MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

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All unambiguous end-of-line hyphens have been removed, and the trailing part of a word has been joined to the preceding line. Every effort has been made to preserve the Māori macron using unicode.

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Official History of New Zealand in the Second World War 1939–45

The authors of the volumes in this series of histories prepared under the supervision of the War History Branch of the Department of Internal Affairs have been given full access to official documents. They and the Editor-in-Chief are respinsible for the statements made and the views expressed by them.

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1958

[FRONTISPIECE]

Major-General Sir Fred Bowerbank, KBE, ED, Director-General of Medical Services (Army and Air)

Major-General Sir Fred Bowerbank, KBE, ED, Director-General of Medical Services (Army and Air)

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

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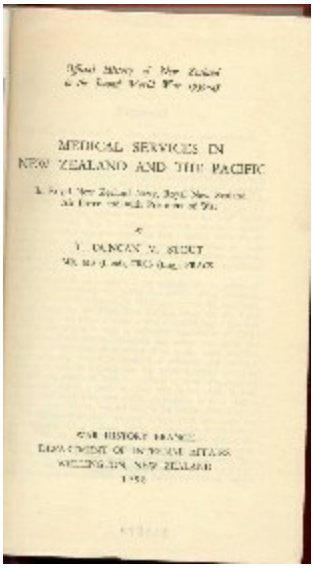

Official History of New Zealand in the Second World War 1939–45

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

In Royal New Zealand Navy, Royal New Zealand Air Force and with Prisoners of War

T. DUNCAN M. STOUT MB, MS (Lond), FRCS (Eng), FRACS

WAR HISTORY BRANCH

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FOREWORD

Foreword

By Major-General Rt. Hon. Sir Harold Barrowclough, kcmg, cb, dso, mc, ed

I COUNT it a great privilege to have been invited to write a foreword for this volume and I gladly accept the Medical Editor's invitation. I do so because, like many other non-medical men who will certainly read this book, I have a profound regard for the work which was done by the New Zealand Medical Corps in the two World Wars of this century, and also because in the South Pacific theatre in World War II I had exceptionally favourable opportunities for observing that work and feel a special obligation to acknowledge publicly the splendid contribution made by every member of the Corps, whether commissioned or non-commissioned, to the welfare of the Expeditionary Force which I had the honour to command.

This volume is not confined to the activities of that portion of the Corps which served with 3 New Zealand Division in the operations in the Solomon Islands. In addition it records the work done by the Corps for the Royal New Zealand Navy and the Royal New Zealand Air Force at home as well as abroad, and it describes also the very fine work done by individual members of the Corps in prisoner-of-war camps. Wherever the service was given the pattern was the same. Everywhere there is the same excellent organisation, the same high standard of efficiency and the same devotion to duty. It is fitting that this splendid service should be recorded and preserved, both as a tribute to those who rendered that service and as a guide to those who follow after. In both respects this book admirably fulfils its purpose. It is at once a faithful report of what was achieved in the fateful years 1939–45 and an inspiration to those who may have to plan, and indeed are now planning, for a possible similar conflagration in the future. None of us can contemplate another large-scale war without the utmost dismay; but none of us dares to

ignore such a possibility. The strategy and tactics of such a war will be vastly different from those of any previous struggle, but the need for a disciplined, competent and well equipped medical service will remain. Indeed, I venture to think that that need will be greater than ever before. I believe that those whose duty it is to organise, train and equip such a service will find much to help them in the story told here, and in other volumes of the Official War History, of the work of the New Zealand Medical Corps.

It is a trite saying that 'Good wine needs no bush' and it is not my purpose, nor is it at all needful, that I should over-advertise the merits of this work. They will be abundantly apparent to anyone who cares to read and study it. Nevertheless I should not like to conclude this Foreword without paying tribute to the impersonal way in which this volume has been written. The reader will find but few names mentioned. The emphasis is not on the performance of the individual, but on the record of the service. I am confident that this feature of the work will earn the unqualified approval of every member of the New Zealand Medical Corps.

H. E. Barrowclough

Wellington
4 February 1958

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

PREFACE

Preface

IN this third and final volume of the official medical history of New Zealand in the Second World War are covered the activities of the New Zealand Medical Corps with the Pacific forces, with prisoners of war in Europe, with the Royal New Zealand Navy, with the Royal New Zealand Air Force, with hospital ships, and the army and civil medical organisations in New Zealand. Preceding volumes are a clinical volume (*War Surgery and Medicine*) and a volume on the medical services in the Middle East and Italy, besides a unit history by J. B. McKinney of the medical units in the same theatres.

The Army in the Pacific had limited combat experience, but its story is important, especially if at any future time a New Zealand Division is required to assume a garrison or combatant role in the Pacific area. The Air Force record covers both New Zealand and Pacific activities, but no separate medical records are available of the New Zealand squadrons attached to the Royal Air Force. The medical service with our Navy was small, but it could not be disregarded, and its story has been comprehensively covered by Surgeon Captain H. K. Corkill.

The section on medical work with prisoners of war has been made possible by compendious reports by Captain J. Borrie and supplementary material by Brigadier W. H. B. Bull, who were both prisoners of war for four years along with many other New Zealand medical officers and orderlies.

The army medical organisation in New Zealand under Major-General Sir Fred Bowerbank was, of course, basic to any overseas activity and is broadly dealt with in this volume, along with planning by the National Medical Committee and related activities such as those of the Health Department.

The volume is a composite one and has been difficult to complete, partly because the phases of the medical war effort covered were largely outside the experience of the Medical Editor or his assistant, J. B. McKinney. A considerable debt, therefore, is owed to those who gave of their time to help with information and correction.

Medical war activities in the preservation of health, saving of hospital beds, conservation of manpower for the forces, and restoration of the sick and wounded to health with as little subsequent disability as possible, are vastly important to a nation's war effort and its public welfare. If this war history results in greater appreciation of what is involved and preserves some of the lessons of experience, it should prove its worth.

,

Medical Editor

September 1957

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Raventhorpe Convalescent Depot

F. T. Bowerbank collection

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER I — WITH THE NEW ZEALAND BRIGADE IN FIJI

CHAPTER I
With the New Zealand Brigade in Fiji

I: Medical Arrangements

NEW ZEALAND was on the alert regarding developments in the Pacific for many years before the outbreak of the Second World War, and reports submitted to the Government by the Chiefs of Staff indicated a possible threat to British possessions in the Pacific by Japanese aggression. When, on 3 September 1939, New Zealand declared war on Germany, a Pacific Defence Conference had already been held and a policy based on its recommendations decided upon. In fact, the first party of 2 NZEF, a detachment of a special force known as A Company, was then at sea, en route for Fanning Island.

On 10 June 1940 Italy declared war on the Allies. Fifteen days later French resistance collapsed. The possibility of Japan joining the Axis powers loomed more threateningly, and the New Zealand Chiefs of Staff decided that it was time to reinforce the Fiji defences. Arrangements were made with the Fiji Government for the accommodation and control of the force, including the Fiji Defence Force, then being trained by New Zealand personnel, and the formation of the proposed force was commenced by the withholding of men from the Third Echelon. These troops and a section of the 4th Reinforcements were drafted into a brigade group, at first known as B Force and later given the official title of 8 Infantry Brigade Group.

The brigade's engineer unit being of the reinforcements and untrained, 18 Army Troops Company, detailed for the Middle East, was temporarily held back as an advanced party for Fiji. From 23 July to 11 August the Brigade Commander and the officer commanding the B Force engineers visited Fiji, the former to make a detailed appreciation of the territory that his force was to defend and the latter to plan defences and camp construction. The Medical Corps was then called on for assistance, and during September Major J. Russell Wells [1] of 7 Field Ambulance, the

brigade's medical unit, was also sent to Fiji to investigate health conditions.

---

[1] Lt-Col J. R. Wells; Ashburton; born Waihola, Otago, 28 May 1893; surgeon; medical officer, NZMC, 1917–19; 8 Bde Gp Sep 1940–Mar 1941 (7 Fd Amb and OC Mil Hosp); medical officer, 2 NZEF, 1941–42; HS *Maunganui*, Dec 1942–May 1943; SMO Waiouru, Burnham, and Papakura Military Camps, 1943–45.

On 27 September, at Berlin, Japan signed a ten-year alliance with Germany and Italy. War in the Pacific became an immediate threat and preparations for the despatch of the force to Fiji were pushed ahead. With the calling up of the 4th Reinforcements at the beginning of October, 8 Brigade was mobilised, with headquarters at Ngaruawahia. Eighteenth Army Troops Company embarked for Suva on 9 October to engage in preliminary camp construction.

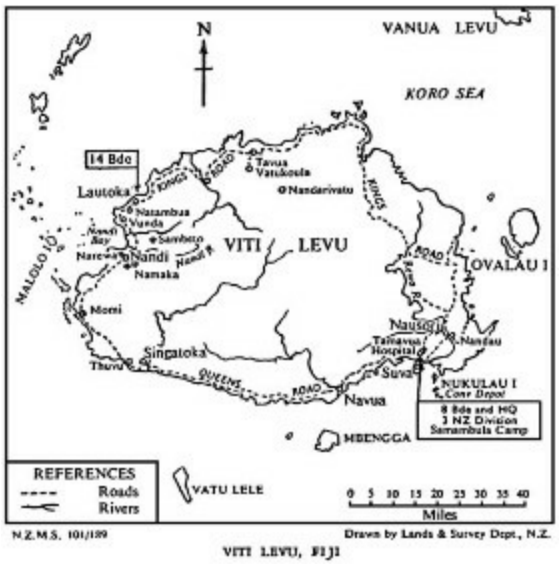
Formation, Training and Departure of 7 Field Ambulance

In New Zealand the organisation of 7 Field Ambulance proceeded rapidly. Personnel assembled at Trentham during the first four days of October. Thorough training was out of the question, however. Not only did the men have too short a period in camp, but the regular instructor was fully engaged with a course for medical officers. However, an NZMC sergeant and young medical officers attending the course gave assistance whenever possible and managed to impart some information and the elements of infantry drill. All ranks were sent on final leave on 16 October, and the unit left for Fiji in the *Rangatira* in three drafts with the units of 8 Brigade on 28 October, 11 November and 19 November. In view of the task ahead, namely providing a medical service for a force that was split into two sections operating 180 miles apart, the establishment allowed was above that of an ordinary field ambulance. The strength of the unit on embarkation was 281, comprising Headquarters 112, A Company 56, B Company 56, and ASC attached 57.

Medical Planning

Major Wells was sent to Fiji in September as medical officer to the advanced party of B Force with instructions to obtain from the Medical Officer of Health at Suva information on all matters affecting the health of troops – climate, diseases, purity of water supply, drainage, nature of soil at site of proposed camps, and nature and amount of fresh fruit and vegetables available. Valuable assistance and advice was given to him by the acting director of medical services in Fiji, Dr McPherson, and the medical officer of health, Dr Baxter.

The climate was found to be wet and humid with an average rainfall of 120 inches a year. On the western side of the island of Viti Levu, however, there was less rainfall (60 inches) and a lower humidity. Typhoid fever occurred sporadically, more especially in the Indian settlements and native villages. Bacillary dysentery occurred at certain seasons of the year and at times assumed epidemic proportions. Hookworm, yaws and filaria were all endemic and prevalent in the native population. As regards venereal disease, syphilis was practically non-existent, but gonorrhoea was fairly prevalent, more especially among the half-caste population. Mosquitoes were numerous and were responsible for a considerable incidence of dengue fever. Anopheline mosquitoes were not indigenous to the area and malaria did not occur.



VITI LEVU, FIJI

Generally, all sources of water supply, except deep wells, which were not common, were regarded as unsafe for drinking without treatment. For the main Samambula camp water was to be drawn by pipeline from the Suva reservoir and was quite suitable for ablution purposes but perhaps not for drinking. The water supply for Namaka camp on the west coast 152 miles away was to be pumped from a nearby river, filtered and chlorinated. Both camp sites chosen were on rising ground with good drainage, and their elevation enabled them to benefit from exposure to the winds. In view of the prevalence of typhoid, dysentery and hookworm, and the necessity to minimise the fly nuisance and the risk of food con- tamination, the Force Engineer, Lieutenant-Colonel McKillop, [1] agreed to recommend the installation of septic tanks and underground drainage at both camp sites. This proposal was strongly supported by the local medical authorities. Fly-proofing of all food storage space, kitchens and messrooms was to be adopted as the buildings were erected.

It was decided that all milk would have to be pasteurised before delivery, otherwise condensed or dried milk would have to be provided. Tinned milk had mostly to be used. Fresh vegetables were produced only in limited quantities, but arrangements were made for large-scale production at a camp farm at Namaka camp. It was thought that potatoes would have to be imported from New Zealand.

Drill uniforms were found to be satisfactory, but it was recommended that several pairs of shorts and open-necked shirts be supplied as they were much more comfortable and generally suitable. Canvas stretchers were supplied for beds. At Samambula 28-men huts were erected, while at Namaka the men were housed in tents, with messrooms, cold storage and cookhouses in wooden buildings. The wooden huts at Samambula were constructed along the ridges so as to be well ventilated by the winds. Drying rooms were erected, but actually the men made use of native laundries.

It was decided by the DGMS to establish two hospitals for the care of

New Zealand troops. The larger of these was to be situated at Tamavua, Suva, and would accommodate two hundred patients (this was reduced to 140 before construction commenced in February 1941), as well as providing complete medical and surgical facilities.

The second hospital was to be placed at Namaka, on the other side of the island where one-third of the force was to be stationed, and would accommodate only fifty patients. Originally this hospital was intended only for short-term cases, and anyone needing longer hospitalisation was to be evacuated by road to Tamavua. The rough roads, however, rendered this impracticable and finally the Namaka hospital was equipped in the same way as the Tamavua hospital. When the first draft of troops of 8 Brigade was sent to Fiji at the end of October the plans for the Tamavua hospital had not been finalised, and it was some months before building actually started. Arrangements had, however, been made for a temporary hospital to be established in the hostel of the Girls' Grammar School, Suva. Its three large dormitories were converted into wards, and the smaller rooms were adapted to serve as hospital offices and

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[1] Col E. R. McKillop, CMG, OBE; Wellington; born Invercargill, 26 Jul 1895; civil engineer; 1 NZEF 1915–19; Staff Engineer, HQ B Force (Fiji), 1940–41; Deputy Commissioner, Defence Construction Council, 1941–45; later Commissioner of Works.

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departments. Fifty patients could be accommodated, and expansion was provided by a marquee and tents erected in the grounds. This hospital was used for nine months.

When A Company of 7 Field Ambulance disembarked at Suva on 2 November a section took over the hostel, where it was soon ready to admit patients, and the remainder of the company marched some four miles to Samambula camp. Here they were quartered in bell tents with wooden floors, which later were to give place to huts. Though the camp site had been drained it was still muddy. A mile of road had been formed

around the area by the engineers, and a mile and a half of six-inch piping laid from the Suva reservoir to the camp. The town power supply had been connected to the camp and electric power was supplied to the cookhouses and key buildings. Regimental aid posts were set up in the camp by 7 Field Ambulance to deal with the sick parades.

A measles epidemic had delayed the calling up of the 4th Reinforcements in New Zealand and the infection had broken out among the troops on board the *Rangatira*. The few patients were speedily isolated and every effort made to prevent the spread of the disease, to which the native Fijians possessed little immunity, and which had caused heavy mortality amongst them in the past. Later a small isolation hospital and a venereal disease hospital were run by A Company at Samambula camp.

B Company of 7 Field Ambulance travelled with the second flight of 8 Brigade, disembarking at Lautoka with 30 Battalion on 13 November and moving to Namaka, some 18 miles from the port, where a camp was established. Here a small camp hospital was set up in a building already on the site, pending the construction of hospital buildings six months later, and RAPs were established.

Suva Hospital

The main body of 7 Field Ambulance under Lieutenant-Colonel Davie [1] arrived at Suva with 29 Battalion on 22 November. Lieutenant-Colonel Davie became SMO of the Force as well as CO of the ambulance, and Major Wells was appointed OC of the company running the Suva hospital. Some twenty-three sisters under Matron Thwaites [2] came with this draft and were attached to the hospital and quartered in a nearby private boarding house.

By the time of the arrival of the sisters the hospital held about twenty-five patients. Owing to the temporary lack of equipment,

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[1] Lt-Col P. C. Davie, ED, m.i.d.; born NZ 6 Jul 1887; surgeon;

medical officer RAMC, 1915–18; CO 7 Fd Amb (Fiji) Oct 1940–Oct 1941; OC NZ Tps HS *Oranje* 1941–42; CO 2 Fd Amb (NZ) 1942–43; died Dec 1949.

[2] Matron Miss G. L. Thwaites, RRC; born NZ 23 Jun 1899; Matron, Military Hospital, Suva, Nov 1940–Aug 1941; Waiouru and Trentham Camp Hospitals, 1942–43; HS *Maunganui* Dec 1944–Mar 1946.

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surgical operations were performed by field ambulance medical officers at the Colonial War Memorial Hospital in Suva.

Sunburn, sore feet and bronchial trouble were the commonest minor ailments, but as the men became acclimatised their incidence decreased. Unfortunately, as far as the hospital was concerned, the effect of this improvement was more than counteracted by the influx of new patients from the third draft, some of whom were suffering from tonsillitis and measles. By 24 November the number of patients had increased to 68. In order to deal with the increased numbers of measles cases, the projected isolation annexe, consisting of an operation tent and a YMCA marquee with holding capacity of 32 acute cases and 72 convalescents, was opened at Samambula on 27 November. There was increasing danger of an epidemic, and both Suva and Namaka were put out of bounds to the troops.

Difficulties continued. The drug supplies, inadequate from the beginning, were rapidly depleted, and the strictest economy had to be exercised. The number of patients increased until lack of accommodation added its problems. Units were requested to send in only their most urgent cases. On 23 December the hospital staff was quartered in the old, and condemned, government buildings in order to provide room for more patients on the verandahs where the staff had been sleeping.

Seventh Field Ambulance expanded and improved its organisation, and although still short of many requirements, considerable progress

was made. On 28 January 1941, Major Talbot, [1] an eye, ear, nose and throat specialist, arrived from New Zealand and was attached to the hospital at Suva. Two more ambulances arrived for the unit and at the end of the month other equipment came to hand, including a diathermy set and inductotherm machines. The dispensary still lacked adequate supplies of drugs and dressings.

An optician in Suva carried out spectacle repairs, a physiotherapy department was set up and an operating room was equipped.

Lack of medical supplies reached a very serious state and had an epidemic broken out, or hostilities begun, 7 Field Ambulance would have been unable to cope with the situation. The eye, ear, nose and throat specialist was unable to perform his work because he lacked equipment, and the SMO was so badly in need of certain equipment that he bought it locally out of Sick and Wounded funds before authority was granted from New Zealand. However, the position was slightly eased on 21 February, when the *Matua* arrived from New Zealand with twenty-five cases of supplies.

More drugs and equipment, including fifty-nine packages of medical comforts from the New Zealand Red Cross, arrived on 24

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[1] Maj L. S. Talbot; Timaru; born NZ 26 Oct 1879; medical practitioner; medical officer 7 Fd Amb Jan 1941–Aug 1942; 4 Gen Hosp Oct 1942–Nov 1943.

March and 7 Field Ambulance was now better stocked than it had ever been.

At the temporary hospital in Suva X-ray equipment was installed in May but the eye, ear, nose and throat department was still awaiting further equipment from New Zealand. A request was made for blood plasma from New Zealand or the United States, as the SMO considered that the local blood bank would be insufficient for prolonged hostilities.

Convalescent Depot

A convalescent depot was established at Nukulau Island on 23 January. Nukulau was a little island off the mouth of the Rewa River and 12 miles from Suva; it was formerly a quarantine station for overseas visitors to Fiji, and had recently been used as a military camp. A medical officer with a staff of eleven orderlies was placed in charge of the convalescent camp. The depot opened with twenty-seven patients who were transported from Suva by launch. Conditions were almost ideal on Nukulau. The staff and patients occupied a large, airy hut and there were facilities for tennis, baseball and cricket. A shark-proof net off the beach made swimming safe. Discipline was strict, but nevertheless the depot was very popular.

Unfit Men

There was no increase in the average number of hospital patients in February, but there was a sharp increase in the attendances at RAPs for treatment of septic sores.

At the end of February forty-eight men were reboarded and returned to New Zealand. Commenting on the large number of unfit men, the SMO stated that many of the men were obviously suffering from conditions existing at the time of their enlistment.

The work at the Suva hospital was a strain on the nursing staff and during the month the nurses took turns in having a few days leave at Nandarivatu. Nandarivatu, in the north of the island and 2000 feet above sea level, was an ideal spot for a rest cure, its climate being much better than that of the lower levels. Convalescent officers were also sent there.

Many men were returning to New Zealand every month medically unfit; during March over 120 returned. The Fiji Joint Defence Committee discussed the construction of a Convalescent Depot for 1000 men at a hill station in Fiji. It was considered that the serious wastage

of manpower caused by the return of soldiers to New Zealand could be considerably reduced if personnel were given a fortnight's leave in such a camp each year.

Preparations for Emergency

Much preparation was made for an emergency. The hospitalisation of Fijians, Indians and Europeans, army and civilian, was worked out to the last detail. The New Zealand medical officers were to take complete charge and were to be assisted by the local doctors. The local resources were analysed and sites for hospitals and dressing stations planned, consideration being given to the transport difficulties that would arise; barges were to be commissioned immediately on the outbreak of hostilities.

The Fiji Public Works Department prepared twelve ambulance frames that fitted on to local motor trucks, of which about sixty were made available. The whole of February was given up to intensive training. Combined night operations with the troops were carried out on different occasions.

Training

The Samambula section of 7 Field Ambulance carried out training during January. Besides revision of stretcher drill, splinting, bandaging and first aid, there was practice in establishing, organising and equipping a gas centre. Instruction was given in the decontamination of mustard gas cases, the gas proofing of dugouts and the administration of oxygen. Route marches were routine until boots wore out and could not be repaired or replaced. Some officers found that a higher standard of fitness could be achieved by replacing route marches with an exercise involving taking men up some of the many hills in the vicinity of Suva and through jungle, and it was felt that the knowledge of the country thus obtained would have been useful in the event of an enemy landing.

On 20 February, the date fixed for combined operations at Gamboni

in the north of the island, a hurricane set in, but not before A Company had got about 50 miles on the way. B Company, which had had earlier notice of the hurricane's approach, stood fast. A Company was recalled by a motor-cyclist and all save one man were retrieved by nightfall, though not without considerable difficulty from swollen rivers and falling trees, telegraph poles and wires. When the company did return to Samambula it was to find that one of its two large sleeping huts was completely flattened, the roof having been carried several chains away. Communication with Nukulau convalescent camp was entirely cut off for forty-eight hours because of the storm and high tides.

When the hurricane warning was received at the temporary hospital at Suva the marquee was dismantled and the patients were crowded into the wards in the main building; some had to be accommodated in a nearby church. Conditions were very trying during the height of the storm; the electric power failed and by mid-afternoon it was so dark that nurses and orderlies were using hurricane lamps; sacking was packed in every crevice of window and door, but the rain still drove through and saturated everything.

Manoeuvres

From 3–12 March 140 members of 7 Field Ambulance carried out manoeuvres at Gamboni. On 4 March the tented camp was well established when a practice hurricane alarm was given; in fifteen minutes the camp was struck and packed ready to move. The tents were re-erected in quick time and a special squad demonstrated the erecting and setting out of an operation tent. During the manoeuvres strenuous cross-country marches were carried out and wounded were evacuated from steep, bush-clad hills. Bomb-proof shelters and advanced dressing stations were established and camouflaged, and throughout the exercise mock air-raid alarms were given. At times the manoeuvres were so realistic that civilians passing in their cars along the road offered to carry patients to hospitals.

The field ambulances learned a number of lessons from the brigade

manoeuvres; RAPs were best established near roads because stretcher-bearers soon became exhausted carrying patients long distances; paths were needed for walking wounded; aid posts required plenty of direction signs; all ambulances should carry the same type of stretchers as they were useless if the stretcher did not fit; there must be good communication between RAPs, ADS and hospitals.

On 29 May 119 members of the New Zealand Medical Corps were replaced by 116 others from New Zealand. Other replacements by fresh troops from New Zealand were effected from time to time. Many of those who returned to New Zealand went to the Middle East as reinforcements.

Namaka Hospital

At first there was no surgeon at Namaka camp so patients who could travel were transported to Suva for operation. If a surgeon had to be sent to Namaka he took two days to travel there and back by road, but later the use of air transport enabled the return journey to be done in one day. On 24 May 1941 the hospital opened in its new building on the south side of the camp.

The new building had six wards, each of eight beds, with two single-bed side wards; an operating theatre was also provided, although it was some time before it was fully equipped. Nurses were brought over from Suva for emergency duty. The building which the hospital vacated became a dental clinic and battalion RAP.

Tamavua Hospital

The plans for this hospital were not finalised until January when the DGMS, Brigadier Bowerbank, visited Fiji. A start was made with its construction on 10 February on the Tamavua heights, some five miles from Suva. The revised plans provided for a 140-bed hospital which could easily be expanded to 200 beds. The factors of cost and ease of administration entered into the decision to reduce the size of the hospital, and the sick rate in the small force then in the Suva area did

not warrant a larger hospital. On 14 August the patients and equipment were transferred from the temporary hospital in Suva. Within a few hours the hospital was running very smoothly and by the end of the month the number of patients had risen to 88. With the increased facilities at the new hospital the force was no longer dependent on the Suva Public Hospital for the use of X-ray equipment and operating theatre, and it was able to carry out its own bacteriological work.

Besides a well-equipped hospital with hot and cold water throughout and a freezing plant with separate compartments for the meat, butter and milk and vegetables, there were up-to-date nurses' quarters. The officers' and men's quarters too were comfortable. A good parade ground was provided and tennis courts were constructed.

Appointment of ADMS

Because of the additional medical work Colonel McKillop [1] was appointed ADMS in October. In the administration of medical services the ADMS dealt with matters concerning health, hygiene and sanitation, while the CO Field Ambulance dealt with the administration of the field ambulance, the hospitals and defence matters.

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[1] Col A. C. McKillop, m.i.d.; Christchurch; born Scotland, 9 Mar 1885; Superintendent, Sunnyside Hospital, Christchurch; medical officer, 1 NZEF, 1914–16; CO 1 Gen Hosp Jan 1940–Jun 1941; ADMS Pacific Section, 2 NZEF (Fiji), Aug 1941–Jul 1942; ADMS 1 Div (NZ) Aug 1942–Mar 1943; died Christchurch, 5 Aug 1958.

II: General Conditions in Fiji

The establishment and maintenance of the force in Fiji was beset with numerous difficulties. Conditions of army life were such that the troops began to voice complaints which received press publicity in New Zealand early in 1941. Brigadier Bowerbank had been on a visit of inspection to Fiji from 16 to 21 January, and the report he made on 30

January received the close attention of War Cabinet. Complaints seem to have been concerned with general discomfort and deficiencies without any particular reference to health and medical conditions, but Brigadier Bowerbank was able to give the background against which the complaints had to be set.

The troops had arrived in November 1940 at the beginning of the rainy season and the period of the hottest weather and preparation for their reception had just commenced. Work on the camps was still in its initial stages, and though this was pushed ahead by the engineers, it was some months before completion and comfortable conditions could be expected. Under such conditions some degree of confusion and considerable discomfort was inevitable, and was noticed by troops who had previously trained in completed and permanent camps in New Zealand. The discomforts could be divided into two groups, those which were inevitable under active-service conditions and those which were avoidable. It could not be denied that there were conditions in the latter category.

One of the justifiable complaints was in regard to uniforms. The troops had been issued with only two pairs of shorts and two shirts. In a tropical country like Fiji where men sweat profusely and get wet through frequently, it was necessary for the clothing to be washed frequently. This resulted in rapid deterioration of the cloth, and Brigadier Bowerbank reported the clothing to be in a deplorable condition despite care and attention by the men. Again there did not appear to be sufficient systematised recreational training. Fiji, with its tropical climate, did not permit of the same continuous arduous military exercises as in New Zealand, and consequent inaction led to boredom and a tendency to deterioration in the soldier's physical and mental fitness. Admissions to medical units, however, showed that the health of the troops had not lapsed but had been consistently good. Diseases of the alimentary and respiratory systems predominated.

Other reports indicated that lack of equipment and of highly trained instructors led to dissatisfaction. From the medical point of view, it was

considered that combatant officers and NCOs did not give sufficient attention to elementary camp hygiene. In the early months persistent efforts had to be made by medical officers to convince them that general hygiene and cleanliness was entirely a unit responsibility. The main difficulty was to convince them of the menace of flies and the need also to control the breeding of mosquitoes. As a vector of infective disease the mosquitoes were not serious threats, as there was no malaria on Viti Levu, although dengue and filariasis were endemic, but their bites often gave rise to septic sores.

The incidence of septic sores, which sometimes developed into large and indolent ulcers, was a persistent problem. The ADMS, NZ Army Headquarters, Colonel Wilson, [1] reporting on an inspection of B Force in February 1942, stated that medical officers who had been longest in Fiji considered that lack of adequate laundry facilities was the most important factor in causing these septic sores – far more important than the provision of hot showers. Facilities for the washing of clothes and blankets had been improved to some extent since the early days, but provision was still far from adequate. The sores were most prevalent in the hot humid weather of the rainy season, when they also increased among natives. Vitamin deficiencies were suspected to be causative factors.

Transport was inadequate in the whole of B Force and medical units were handicapped as well as other units, as regards both ambulance cars and trucks. In the early months not a single water cart was available in Fiji, despite the endemicity of typhoid and dysentery. On operational manoeuvres 400-gallon tanks were carted round on trucks, and bleaching powder was thrown into these. Stretchers, general medical stores and theatre instruments were also still required at the time of Colonel Wilson's visit. Such deficiencies were the natural result of an inadequacy of stocks in New Zealand, where replenishment of supplies was so dependent on overseas sources. By comparison the equipment of the medical staff of an American Air Force unit was nothing short of marvellous.

Despite the difficulties the medical unit (7 Field Ambulance) rendered efficient service, successfully carrying out the functions usually performed by several medical units, which speaks much for those who staffed the units.

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[1] **Brig I. S. Wilson, OBE, MC and bar, ED, m.i.d.; Wellington; born Dunedin, 13 Jul 1883; physician; medical officer BEF Fd Amb, RMO 1 Bn Scots Guards, Guards Fd Amb, 1914–18 War; wounded, Somme, 1916; ADMS, Central Military District, 1935–39; ADMS, Army HQ, Sep 1939–Feb 1944; acting DGMS, Army HQ, Feb–Jul 1944; CO 2 Gen Hosp Oct 1944–Jul 1945.**

III: Health of Troops

In September 1941 Lieutenant-Colonel Davie made a survey of the medical services and health of the troops in Fiji in the ten months from November 1940. At the Girls' Grammar School from 2 November 1940, and then at Tamavua from 14 August 1941, the military hospital had provided full medical and surgical services. Throughout it had had the valuable co-operation of the Colonial War Memorial Hospital.

The hostel at the Grammar School had been built to take about thirty-five girls, and there were difficulties when on occasions more than a hundred patients had to be accommodated. The average number in hospital over the ten months was 78. Patients had to be on verandahs screened by canvas curtains or in tents, from which they were driven into the main building by rain. The use of tents enabled cases of diphtheria, dysentery, mumps, and measles to be isolated, but nursing, especially at night and in rainy weather, was difficult.

In the new buildings at Tamavua conditions were very much better. At an elevation of 500 feet the buildings were cooler, and the layout of the hospital was good from the functional point of view. The hospital normally was able to provide for 140 patients, but 250 could be treated without overcrowding, and the quarters for the NZANS and Headquarters Company of 7 Field Ambulance were very good. The only real

disadvantage was the much greater prevalence of mosquitoes in the new situation. Forest and partially cultivated land lay close to the hospital site and everyone needed a mosquito net, whereas often these could be dispensed with at the old hospital. Unfortunately no blackout arrangements were incorporated in the design of the new hospital. It was necessary to arrange for window screens for the operating theatre block, the orderly room, the admission and discharge room, some examination rooms, and at least one ward to enable work to be done efficiently at night under war conditions.

Up to 24 September 1941 the number of patients admitted to the military hospital was 2136, the principal infectious diseases being measles 169, ringworm 105, dysentery 47, mumps 38 and diphtheria 12. Cases of measles and mumps often arrived with fresh troops from New Zealand. Surgical cases totalled 306. There were 50 admissions to the hospital at Samambula camp for venereal disease, including only one case of syphilis. Two deaths had occurred, one following an anaesthetic and one a case of meningitis following mastoid disease. The average strength of 8 Brigade Group during the period was about 3000; the average number of patients in medical units was 135, or 4.52 per cent of the troops.

The number of troops medically boarded during the ten months was 280 out of a total of 6000 troops sent to Fiji by that time. It was felt there was need for greater care in the preliminary examination of troops in New Zealand, especially as regards such conditions as flat feet and varicose veins.

There was a fairly high incidence of men reporting sick, but this was due to the requirement that all men receiving even very minor injuries had to report to the RAP so as to prevent septic sores. It was recognised that plenty of hot water for ablutions was the chief factor in the prevention of septic sores, and it was felt by Lieutenant-Colonel Davie that more hot water should have been supplied to the camps. Cold showers were provided throughout; hot showers had been turned down

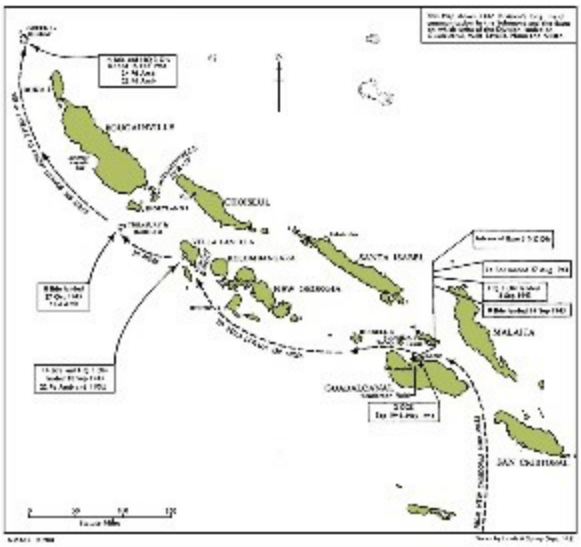
on the question of expense. Septic sores were found to be the greatest single cause of incapacity for training. Fungus infections affecting hands, feet, groins and axillae were also common.

The military hospital of 50 beds at Namaka was staffed by sections of B Company 7 Field Ambulance, and had an average daily bed state of 23. Nursing sisters were brought over by air from Tamavua for emergency duty from time to time. Venereal disease patients were evacuated to the CD hospital, Samambula, but in six months there were only four cases of gonorrhoea from Namaka camp. Climatic conditions were better on the Namaka side of the island, it being noted that when a battalion was changed from Samambula to Namaka there was an immediate reduction in its daily sick parades.

Major Talbot found that eye and ear conditions did not reduce efficiency in Fiji to any marked degree. However, the hot and humid climate was favourable to middle ear infections, and some ears that had been 'dry' for long periods became active, and chronic nasal sinus conditions were troublesome. Soldiers with such infections usually had to be employed at Base or returned to New Zealand. Otitis externa was prevalent in the climate of the Pacific, but could be effectively treated during a period in hospital. Although trachoma is endemic in the Fiji Islands, no cases of trachoma were found in either white soldiers or civilians. There was very little trouble among the New Zealand troops from heterophoria, or from functional asthenopia. An idea that 'glare' in a tropical country would need to be counteracted by the wearing of tinted glasses was at first widespread among the troops. As a matter of fact, glare is no more of a problem in Fiji than it is in New Zealand. The country is, at least on the Suva side, green, and the sky often cloudy, as would be expected with an annual rainfall of from 75 to 150 inches. The idea died out by the use of persuasion and explanation. Very little conjunctival infection occurred. Eye and ENT admissions for eight months totalled 148, while there were 515 out-patients.

Sanitation and Hygiene

Accommodation was reported by Lieutenant-Colonel Davie to be satisfactory in all camps, the ventilation of huts being good. Bedbugs had appeared in the camps on occasions but regular inspection and effective treatment eliminated them. All sewage was water-borne and disposal was very satisfactory. Garbage from the eastern area was carted to the town dump, while that from the western area at Namaka was buried in a Bradford tip on the outskirts of the camp. Cookhouses were fly-proofed. Mosquito control work was carried out and all men in both areas slept under mosquito nets. At Samambula water was drawn in ample quantity from the town supply, while at Namaka water drawn from a stream was filtrated and chlorinated. Some of the troops washed their own clothes but most sent them to a *dhobi*. Fijians and Indians were employed in camp cookhouses and on general sanitary work. They were medically examined and no men with hookworm, venereal disease or tuberculosis were employed.



SOLOMON ISLANDS

The native Fijian forces came under the supervision of the NZMC with the assistance of some Government medical officers on full-time duty; this enabled a closer supervision of both men and camps to be made. All the Fijians had to wear boots or sandals in the camp as a preventive against hookworm. Prophylactic ablution huts were also constructed in their camps. Although there was no malaria in Fiji,

special precautions were taken when aeroplanes arrived from malaria-infected areas.

Food

Fresh vegetables and fruit were supplied in good quantity and condition, but the condition of some of the tinned vegetables supplied gave rise to some concern in September 1941. Frozen mutton arrived in good condition, and local beef supplies were reasonably satisfactory. The hospital dietitian gave lectures to quartermasters and sergeant cooks on the making up of dishes with the food available, the care of food and the avoidance of waste.

General preventive measures undertaken were:

(*a*) Inspection of dairy factories for the selection of milk and butter. This entailed visiting some factories that could compare with some of the best in New Zealand.

(*b*) Bakeries and butchers' shops were inspected in Suva and hygienic conditions were improved.

(*c*) Cafeterias and restaurants open to the troops were inspected periodically.

Japan Enters War

Immediately following the unprovoked attack by Japan on Pearl Harbour on 7 December 1941, extra battalions were sent from New Zealand to build up the strength of New Zealand troops in Fiji to two brigades. There was a period of feverish activity in improving the defences of Fiji as the Japanese swept down through the Solomons and into the north of the Gilbert and Ellice Islands.

The medical requirements of 8 Brigade had to be adjusted in accordance with the tactical situation in Fiji and the build-up of the force to over 12,000 men. The defence problem was one of repelling beach invasions at certain points, the principal areas being near the two military hospitals, Tamavua and Namaka, on the east and west sides of

the island respectively. A coastal road encircled the island, the distance between Suva and Lautoka being 180 miles one way and 150 miles the other.

Two companies of 7 Field Ambulance were immobilised at Tamavua and Namaka as hospital staffs. They were to act as main dressing stations in the event of hostilities. This left only one company free to form advanced dressing stations, and this company alone had the necessary transport to render it mobile.

In the reorganisation it was arranged that the Tamavua military hospital be established as a separate hospital of 140 beds, expandable to 200, and that Namaka military hospital be similarly separately established with accommodation of 50 beds expandable to 100 beds. This latter unit was also to control and staff a hospital at Lautoka for the Civil Construction Unit, which had been sent from New Zealand to complete the airstrip at Nandi, and also to serve the expanded RNZAF units.

To form a complete field ambulance apart from the hospital staffs, two companies were sent from New Zealand to supplement the one remaining mobile company of 7 Field Ambulance. Extra regimental medical officers were also provided for the extra combatant units sent to Fiji. Two small hygiene sub-sections were also despatched from New Zealand – one for each end of the island. Although ten nursing sisters and some reinforcements reached Fiji in February, the remaining reinforcements for the new organisation did not join 8 Brigade until 12 March 1942. Seventh Field Ambulance was then reorganised as a complete field ambulance at Samambula, while Tamavua hospital became a separate unit. The company of the ambulance which was at Namaka remained on the western side, and with the addition of considerable reinforcements in February had become 22 Field Ambulance and serviced the newly formed 14 Brigade.

As the eastern and western areas of the island were practically separate as regards administration, and would have been entirely so if

hostilities had commenced, plans were pushed forward for the erection of a larger hospital at the western side to replace Namaka hospital. This small hospital was overcrowded as it had to receive and treat all cases in its brigade area, and in addition it was badly sited on the edge of the extensive aerodrome, which would have made its position untenable in the event of hostilities. The new hospital, with a 300-bed capacity, was erected on slightly elevated ground on the bank of the Sambeto River, some miles away, but owing to the return of the force to New Zealand in July it was never used by the New Zealanders.

At Tamavua members of the field ambulance worked three eight-hour shifts a day for many weeks tunnelling out a 250-bed hospital shelter in the soapstone beneath a hill across the road from the Tamavua hospital. It was completed under the supervision of engineers as a major project in the defence scheme. Shelters and slit trenches were also dug out at Battle Headquarters at Tamavua village, as well as RAPs round the area of Suva's defences, which were to be manned in the event of attack by New Zealanders and members of the Fiji Defence Force.

Unfit Men

In his monthly report for May 1942 the ADMS stated:

The general health of the service personnel is good but far too many men are sent here who are quite unfitted for service in the tropics. It has been the custom in New Zealand to fill drafts with Grade II men when Grade I men were not available. This system should be discontinued: no man should be sent for service here unless he is absolutely fit. On no account should a man suffering from skin trouble be sent to Fiji: a large number of men suffering from acne, more or less quiescent when they left home, have had to be boarded. Men suffering from slight varicose veins, varicocele and other minor disabilities that cause little trouble in New Zealand, have symptoms very markedly increased and spend so much time excused duty or on light duty that they have to be boarded. No man who has a head injury or a nervous breakdown should be passed

for service over here. A very large number of cases have been boarded for asthma, some of whom reported at the time of original examinations that they were subject to that disability. [1]

The ADMS again stressed the necessity for hot showers for the men and a better laundry service. The natives did not cleanse garments properly and he suggested that a brigade laundry should be set up. Septic sores had increased with the scratches the men received in jungle training and the ADMS recommended that each man should be provided with an antiseptic of some sort to apply immediately to even the slightest injury. Everything was being done to provide protective foods for the troops but Vitamin 'C' was a problem.

The ADMS reported in June that a few cases of anxiety neurosis had lately appeared and a special board had been set up to examine forty men attached to Suva Battery. A large proportion were found to be definitely mentally enfeebled and should never have been passed for service. The ADMS considered it unreasonable that such men had been sent to units which contained native troops. He stated that he agreed with the 'Anxiety Neurosis Committee, 2 NZEF ME' that a psychiatrist should be attached to the mobilisation camps in New Zealand.

Fiji Crisis

In the early months of 1942 Japanese submarines were active around Fiji, and when the Allied defences collapsed in the Far East and the enemy's thrust reached the southern Solomons, considerable anxiety was felt about the adequacy of the Fiji defences. In April the New Zealand Chiefs of Staff advised Cabinet that another division was required for Fiji, and as America was considering sending troops to New Zealand the situation should be placed fully before that country. When New Zealand pointed out that to send another division would cripple the defences of the Dominion, the United States suggested that it should take over complete responsibility for Fiji and Tonga and the New Zealand garrison could return to the Dominion. This proposal was agreed to by

the British, Fijian and New Zealand governments and in June troops of 37 United States Division began to arrive in Fiji, which was transferred to United States command on 18 July 1942.

Eight thousand New Zealand troops returned to the Dominion in July and August and about 2000 remained at the request of the United States. These men were in anti-aircraft and commando units.

It was hoped by the Americans that the New Zealand troops thus relieved would be made available for amphibious training with 1 Marine Division in anticipation of joint offensive action to the north-west.

Americans Take Over

On 14 June the Civil Construction Unit hospital which had recently been used by Namaka hospital as a convalescent depot was closed and the building was handed over to an American medical unit. The next day seventeen stretcher cases from the Namaka hospital were taken by ambulance to Suva, where they embarked for New Zealand. The walking patients of the hospital left for Suva on 16 June and all equipment and stores were handed over to 142 US General Hospital.

On 17 June 141 patients from Tamavua hospital, 81 patients from Namaka hospital, and 38 boarded personnel embarked at Suva. The medical staff, including 35 nurses, of 71 US Station Hospital arrived in the middle of the month, and on 28 June the Tamavua hospital was officially handed over to the United States medical staff.

In July the hospital and field ambulance staffs returned to New Zealand with other troops to undergo reorganisation as 3 NZ Division and be prepared for service elsewhere in the Pacific.

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[1] The complaint of the medical services in Fiji with regard to the inadvisability of sending troops from New Zealand with minor disabilities such as flat feet, varicose veins and varicocele, and with previous history of head injury, is in keeping with similar complaints from the Middle East and later from New Caledonia.

These complaints tended to cease when medical officers realised that the real problem was one not of any organic disability but of psychoneurosis, which became more marked in a debilitating climate and in periods of inactivity.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: MEDICAL ARRANGEMENTS

I: Medical Arrangements

NEW ZEALAND was on the alert regarding developments in the Pacific for many years before the outbreak of the Second World War, and reports submitted to the Government by the Chiefs of Staff indicated a possible threat to British possessions in the Pacific by Japanese aggression. When, on 3 September 1939, New Zealand declared war on Germany, a Pacific Defence Conference had already been held and a policy based on its recommendations decided upon. In fact, the first party of 2 NZEF, a detachment of a special force known as A Company, was then at sea, en route for Fanning Island.

On 10 June 1940 Italy declared war on the Allies. Fifteen days later French resistance collapsed. The possibility of Japan joining the Axis powers loomed more threateningly, and the New Zealand Chiefs of Staff decided that it was time to reinforce the Fiji defences. Arrangements were made with the Fiji Government for the accommodation and control of the force, including the Fiji Defence Force, then being trained by New Zealand personnel, and the formation of the proposed force was commenced by the withholding of men from the Third Echelon. These troops and a section of the 4th Reinforcements were drafted into a brigade group, at first known as B Force and later given the official title of 8 Infantry Brigade Group.

The brigade's engineer unit being of the reinforcements and untrained, 18 Army Troops Company, detailed for the Middle East, was temporarily held back as an advanced party for Fiji. From 23 July to 11 August the Brigade Commander and the officer commanding the B Force engineers visited Fiji, the former to make a detailed appreciation of the territory that his force was to defend and the latter to plan defences and camp construction. The Medical Corps was then called on for assistance, and during September Major J. Russell Wells [1] of 7 Field Ambulance, the

brigade's medical unit, was also sent to Fiji to investigate health conditions.

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[1] Lt-Col J. R. Wells; Ashburton; born Waihola, Otago, 28 May 1893; surgeon; medical officer, NZMC, 1917–19; 8 Bde Gp Sep 1940–Mar 1941 (7 Fd Amb and OC Mil Hosp); medical officer, 2 NZEF, 1941–42; HS *Maunganui*, Dec 1942–May 1943; SMO Waiouru, Burnham, and Papakura Military Camps, 1943–45.

On 27 September, at Berlin, Japan signed a ten-year alliance with Germany and Italy. War in the Pacific became an immediate threat and preparations for the despatch of the force to Fiji were pushed ahead. With the calling up of the 4th Reinforcements at the beginning of October, 8 Brigade was mobilised, with headquarters at Ngaruawahia. Eighteenth Army Troops Company embarked for Suva on 9 October to engage in preliminary camp construction.

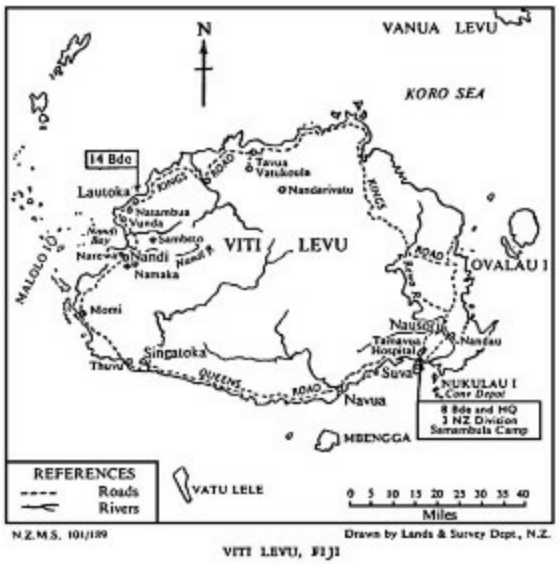
Formation, Training and Departure of 7 Field Ambulance

In New Zealand the organisation of 7 Field Ambulance proceeded rapidly. Personnel assembled at Trentham during the first four days of October. Thorough training was out of the question, however. Not only did the men have too short a period in camp, but the regular instructor was fully engaged with a course for medical officers. However, an NZMC sergeant and young medical officers attending the course gave assistance whenever possible and managed to impart some information and the elements of infantry drill. All ranks were sent on final leave on 16 October, and the unit left for Fiji in the *Rangatira* in three drafts with the units of 8 Brigade on 28 October, 11 November and 19 November. In view of the task ahead, namely providing a medical service for a force that was split into two sections operating 180 miles apart, the establishment allowed was above that of an ordinary field ambulance. The strength of the unit on embarkation was 281, comprising Headquarters 112, A Company 56, B Company 56, and ASC attached 57.

Medical Planning

Major Wells was sent to Fiji in September as medical officer to the advanced party of B Force with instructions to obtain from the Medical Officer of Health at Suva information on all matters affecting the health of troops – climate, diseases, purity of water supply, drainage, nature of soil at site of proposed camps, and nature and amount of fresh fruit and vegetables available. Valuable assistance and advice was given to him by the acting director of medical services in Fiji, Dr McPherson, and the medical officer of health, Dr Baxter.

The climate was found to be wet and humid with an average rainfall of 120 inches a year. On the western side of the island of Viti Levu, however, there was less rainfall (60 inches) and a lower humidity. Typhoid fever occurred sporadically, more especially in the Indian settlements and native villages. Bacillary dysentery occurred at certain seasons of the year and at times assumed epidemic proportions. Hookworm, yaws and filaria were all endemic and prevalent in the native population. As regards venereal disease, syphilis was practically non-existent, but gonorrhoea was fairly prevalent, more especially among the half-caste population. Mosquitoes were numerous and were responsible for a considerable incidence of dengue fever. Anopheline mosquitoes were not indigenous to the area and malaria did not occur.



VITI LEVU, FIJI

Generally, all sources of water supply, except deep wells, which were not common, were regarded as unsafe for drinking without treatment. For the main Samambula camp water was to be drawn by pipeline from the Suva reservoir and was quite suitable for ablution purposes but perhaps not for drinking. The water supply for Namaka camp on the west coast 152 miles away was to be pumped from a nearby river, filtered and chlorinated. Both camp sites chosen were on rising ground with good drainage, and their elevation enabled them to benefit from exposure to the winds. In view of the prevalence of typhoid, dysentery and hookworm, and the necessity to minimise the fly nuisance and the risk of food con- tamination, the Force Engineer, Lieutenant-Colonel McKillop, [1] agreed to recommend the installation of septic tanks and underground drainage at both camp sites. This proposal was strongly supported by the local medical authorities. Fly-proofing of all food storage space, kitchens and messrooms was to be adopted as the buildings were erected.

It was decided that all milk would have to be pasteurised before delivery, otherwise condensed or dried milk would have to be provided. Tinned milk had mostly to be used. Fresh vegetables were produced only in limited quantities, but arrangements were made for large-scale production at a camp farm at Namaka camp. It was thought that potatoes would have to be imported from New Zealand.

Drill uniforms were found to be satisfactory, but it was recommended that several pairs of shorts and open-necked shirts be supplied as they were much more comfortable and generally suitable. Canvas stretchers were supplied for beds. At Samambula 28-men huts were erected, while at Namaka the men were housed in tents, with messrooms, cold storage and cookhouses in wooden buildings. The wooden huts at Samambula were constructed along the ridges so as to be well ventilated by the winds. Drying rooms were erected, but actually the men made use of native laundries.

It was decided by the DGMS to establish two hospitals for the care of

New Zealand troops. The larger of these was to be situated at Tamavua, Suva, and would accommodate two hundred patients (this was reduced to 140 before construction commenced in February 1941), as well as providing complete medical and surgical facilities.

The second hospital was to be placed at Namaka, on the other side of the island where one-third of the force was to be stationed, and would accommodate only fifty patients. Originally this hospital was intended only for short-term cases, and anyone needing longer hospitalisation was to be evacuated by road to Tamavua. The rough roads, however, rendered this impracticable and finally the Namaka hospital was equipped in the same way as the Tamavua hospital. When the first draft of troops of 8 Brigade was sent to Fiji at the end of October the plans for the Tamavua hospital had not been finalised, and it was some months before building actually started. Arrangements had, however, been made for a temporary hospital to be established in the hostel of the Girls' Grammar School, Suva. Its three large dormitories were converted into wards, and the smaller rooms were adapted to serve as hospital offices and

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[1] Col E. R. McKillop, CMG, OBE; Wellington; born Invercargill, 26 Jul 1895; civil engineer; 1 NZEF 1915–19; Staff Engineer, HQ B Force (Fiji), 1940–41; Deputy Commissioner, Defence Construction Council, 1941–45; later Commissioner of Works.

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departments. Fifty patients could be accommodated, and expansion was provided by a marquee and tents erected in the grounds. This hospital was used for nine months.

When A Company of 7 Field Ambulance disembarked at Suva on 2 November a section took over the hostel, where it was soon ready to admit patients, and the remainder of the company marched some four miles to Samambula camp. Here they were quartered in bell tents with wooden floors, which later were to give place to huts. Though the camp site had been drained it was still muddy. A mile of road had been formed

around the area by the engineers, and a mile and a half of six-inch piping laid from the Suva reservoir to the camp. The town power supply had been connected to the camp and electric power was supplied to the cookhouses and key buildings. Regimental aid posts were set up in the camp by 7 Field Ambulance to deal with the sick parades.

A measles epidemic had delayed the calling up of the 4th Reinforcements in New Zealand and the infection had broken out among the troops on board the *Rangatira*. The few patients were speedily isolated and every effort made to prevent the spread of the disease, to which the native Fijians possessed little immunity, and which had caused heavy mortality amongst them in the past. Later a small isolation hospital and a venereal disease hospital were run by A Company at Samambula camp.

B Company of 7 Field Ambulance travelled with the second flight of 8 Brigade, disembarking at Lautoka with 30 Battalion on 13 November and moving to Namaka, some 18 miles from the port, where a camp was established. Here a small camp hospital was set up in a building already on the site, pending the construction of hospital buildings six months later, and RAPs were established.

Suva Hospital

The main body of 7 Field Ambulance under Lieutenant-Colonel Davie [1] arrived at Suva with 29 Battalion on 22 November. Lieutenant-Colonel Davie became SMO of the Force as well as CO of the ambulance, and Major Wells was appointed OC of the company running the Suva hospital. Some twenty-three sisters under Matron Thwaites [2] came with this draft and were attached to the hospital and quartered in a nearby private boarding house.

By the time of the arrival of the sisters the hospital held about twenty-five patients. Owing to the temporary lack of equipment,

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[1] Lt-Col P. C. Davie, ED, m.i.d.; born NZ 6 Jul 1887; surgeon;

medical officer RAMC, 1915–18; CO 7 Fd Amb (Fiji) Oct 1940–Oct 1941; OC NZ Tps HS *Oranje* 1941–42; CO 2 Fd Amb (NZ) 1942–43; died Dec 1949.

[2] Matron Miss G. L. Thwaites, RRC; born NZ 23 Jun 1899; Matron, Military Hospital, Suva, Nov 1940–Aug 1941; Waiouru and Trentham Camp Hospitals, 1942–43; HS *Maunganui* Dec 1944–Mar 1946.

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surgical operations were performed by field ambulance medical officers at the Colonial War Memorial Hospital in Suva.

Sunburn, sore feet and bronchial trouble were the commonest minor ailments, but as the men became acclimatised their incidence decreased. Unfortunately, as far as the hospital was concerned, the effect of this improvement was more than counteracted by the influx of new patients from the third draft, some of whom were suffering from tonsillitis and measles. By 24 November the number of patients had increased to 68. In order to deal with the increased numbers of measles cases, the projected isolation annexe, consisting of an operation tent and a YMCA marquee with holding capacity of 32 acute cases and 72 convalescents, was opened at Samambula on 27 November. There was increasing danger of an epidemic, and both Suva and Namaka were put out of bounds to the troops.

Difficulties continued. The drug supplies, inadequate from the beginning, were rapidly depleted, and the strictest economy had to be exercised. The number of patients increased until lack of accommodation added its problems. Units were requested to send in only their most urgent cases. On 23 December the hospital staff was quartered in the old, and condemned, government buildings in order to provide room for more patients on the verandahs where the staff had been sleeping.

Seventh Field Ambulance expanded and improved its organisation, and although still short of many requirements, considerable progress

was made. On 28 January 1941, Major Talbot, [1] an eye, ear, nose and throat specialist, arrived from New Zealand and was attached to the hospital at Suva. Two more ambulances arrived for the unit and at the end of the month other equipment came to hand, including a diathermy set and inductotherm machines. The dispensary still lacked adequate supplies of drugs and dressings.

An optician in Suva carried out spectacle repairs, a physiotherapy department was set up and an operating room was equipped.

Lack of medical supplies reached a very serious state and had an epidemic broken out, or hostilities begun, 7 Field Ambulance would have been unable to cope with the situation. The eye, ear, nose and throat specialist was unable to perform his work because he lacked equipment, and the SMO was so badly in need of certain equipment that he bought it locally out of Sick and Wounded funds before authority was granted from New Zealand. However, the position was slightly eased on 21 February, when the *Matua* arrived from New Zealand with twenty-five cases of supplies.

More drugs and equipment, including fifty-nine packages of medical comforts from the New Zealand Red Cross, arrived on 24

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[1] Maj L. S. Talbot; Timaru; born NZ 26 Oct 1879; medical practitioner; medical officer 7 Fd Amb Jan 1941–Aug 1942; 4 Gen Hosp Oct 1942–Nov 1943.

March and 7 Field Ambulance was now better stocked than it had ever been.

At the temporary hospital in Suva X-ray equipment was installed in May but the eye, ear, nose and throat department was still awaiting further equipment from New Zealand. A request was made for blood plasma from New Zealand or the United States, as the SMO considered that the local blood bank would be insufficient for prolonged hostilities.

Convalescent Depot

A convalescent depot was established at Nukulau Island on 23 January. Nukulau was a little island off the mouth of the Rewa River and 12 miles from Suva; it was formerly a quarantine station for overseas visitors to Fiji, and had recently been used as a military camp. A medical officer with a staff of eleven orderlies was placed in charge of the convalescent camp. The depot opened with twenty-seven patients who were transported from Suva by launch. Conditions were almost ideal on Nukulau. The staff and patients occupied a large, airy hut and there were facilities for tennis, baseball and cricket. A shark-proof net off the beach made swimming safe. Discipline was strict, but nevertheless the depot was very popular.

Unfit Men

There was no increase in the average number of hospital patients in February, but there was a sharp increase in the attendances at RAPs for treatment of septic sores.

At the end of February forty-eight men were reboarded and returned to New Zealand. Commenting on the large number of unfit men, the SMO stated that many of the men were obviously suffering from conditions existing at the time of their enlistment.

The work at the Suva hospital was a strain on the nursing staff and during the month the nurses took turns in having a few days leave at Nandarivatu. Nandarivatu, in the north of the island and 2000 feet above sea level, was an ideal spot for a rest cure, its climate being much better than that of the lower levels. Convalescent officers were also sent there.

Many men were returning to New Zealand every month medically unfit; during March over 120 returned. The Fiji Joint Defence Committee discussed the construction of a Convalescent Depot for 1000 men at a hill station in Fiji. It was considered that the serious wastage

of manpower caused by the return of soldiers to New Zealand could be considerably reduced if personnel were given a fortnight's leave in such a camp each year.

Preparations for Emergency

Much preparation was made for an emergency. The hospitalisation of Fijians, Indians and Europeans, army and civilian, was worked out to the last detail. The New Zealand medical officers were to take complete charge and were to be assisted by the local doctors. The local resources were analysed and sites for hospitals and dressing stations planned, consideration being given to the transport difficulties that would arise; barges were to be commissioned immediately on the outbreak of hostilities.

The Fiji Public Works Department prepared twelve ambulance frames that fitted on to local motor trucks, of which about sixty were made available. The whole of February was given up to intensive training. Combined night operations with the troops were carried out on different occasions.

Training

The Samambula section of 7 Field Ambulance carried out training during January. Besides revision of stretcher drill, splinting, bandaging and first aid, there was practice in establishing, organising and equipping a gas centre. Instruction was given in the decontamination of mustard gas cases, the gas proofing of dugouts and the administration of oxygen. Route marches were routine until boots wore out and could not be repaired or replaced. Some officers found that a higher standard of fitness could be achieved by replacing route marches with an exercise involving taking men up some of the many hills in the vicinity of Suva and through jungle, and it was felt that the knowledge of the country thus obtained would have been useful in the event of an enemy landing.

On 20 February, the date fixed for combined operations at Gamboni

in the north of the island, a hurricane set in, but not before A Company had got about 50 miles on the way. B Company, which had had earlier notice of the hurricane's approach, stood fast. A Company was recalled by a motor-cyclist and all save one man were retrieved by nightfall, though not without considerable difficulty from swollen rivers and falling trees, telegraph poles and wires. When the company did return to Samambula it was to find that one of its two large sleeping huts was completely flattened, the roof having been carried several chains away. Communication with Nukulau convalescent camp was entirely cut off for forty-eight hours because of the storm and high tides.

When the hurricane warning was received at the temporary hospital at Suva the marquee was dismantled and the patients were crowded into the wards in the main building; some had to be accommodated in a nearby church. Conditions were very trying during the height of the storm; the electric power failed and by mid-afternoon it was so dark that nurses and orderlies were using hurricane lamps; sacking was packed in every crevice of window and door, but the rain still drove through and saturated everything.

Manoeuvres

From 3–12 March 140 members of 7 Field Ambulance carried out manoeuvres at Gamboni. On 4 March the tented camp was well established when a practice hurricane alarm was given; in fifteen minutes the camp was struck and packed ready to move. The tents were re-erected in quick time and a special squad demonstrated the erecting and setting out of an operation tent. During the manoeuvres strenuous cross-country marches were carried out and wounded were evacuated from steep, bush-clad hills. Bomb-proof shelters and advanced dressing stations were established and camouflaged, and throughout the exercise mock air-raid alarms were given. At times the manoeuvres were so realistic that civilians passing in their cars along the road offered to carry patients to hospitals.

The field ambulances learned a number of lessons from the brigade

manoeuvres; RAPs were best established near roads because stretcher-bearers soon became exhausted carrying patients long distances; paths were needed for walking wounded; aid posts required plenty of direction signs; all ambulances should carry the same type of stretchers as they were useless if the stretcher did not fit; there must be good communication between RAPs, ADS and hospitals.

On 29 May 119 members of the New Zealand Medical Corps were replaced by 116 others from New Zealand. Other replacements by fresh troops from New Zealand were effected from time to time. Many of those who returned to New Zealand went to the Middle East as reinforcements.

Namaka Hospital

At first there was no surgeon at Namaka camp so patients who could travel were transported to Suva for operation. If a surgeon had to be sent to Namaka he took two days to travel there and back by road, but later the use of air transport enabled the return journey to be done in one day. On 24 May 1941 the hospital opened in its new building on the south side of the camp.

The new building had six wards, each of eight beds, with two single-bed side wards; an operating theatre was also provided, although it was some time before it was fully equipped. Nurses were brought over from Suva for emergency duty. The building which the hospital vacated became a dental clinic and battalion RAP.

Tamavua Hospital

The plans for this hospital were not finalised until January when the DGMS, Brigadier Bowerbank, visited Fiji. A start was made with its construction on 10 February on the Tamavua heights, some five miles from Suva. The revised plans provided for a 140-bed hospital which could easily be expanded to 200 beds. The factors of cost and ease of administration entered into the decision to reduce the size of the hospital, and the sick rate in the small force then in the Suva area did

not warrant a larger hospital. On 14 August the patients and equipment were transferred from the temporary hospital in Suva. Within a few hours the hospital was running very smoothly and by the end of the month the number of patients had risen to 88. With the increased facilities at the new hospital the force was no longer dependent on the Suva Public Hospital for the use of X-ray equipment and operating theatre, and it was able to carry out its own bacteriological work.

Besides a well-equipped hospital with hot and cold water throughout and a freezing plant with separate compartments for the meat, butter and milk and vegetables, there were up-to-date nurses' quarters. The officers' and men's quarters too were comfortable. A good parade ground was provided and tennis courts were constructed.

Appointment of ADMS

Because of the additional medical work Colonel McKillop [1] was appointed ADMS in October. In the administration of medical services the ADMS dealt with matters concerning health, hygiene and sanitation, while the CO Field Ambulance dealt with the administration of the field ambulance, the hospitals and defence matters.

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[1] Col A. C. McKillop, m.i.d.; Christchurch; born Scotland, 9 Mar 1885; Superintendent, Sunnyside Hospital, Christchurch; medical officer, 1 NZEF, 1914–16; CO 1 Gen Hosp Jan 1940–Jun 1941; ADMS Pacific Section, 2 NZEF (Fiji), Aug 1941–Jul 1942; ADMS 1 Div (NZ) Aug 1942–Mar 1943; died Christchurch, 5 Aug 1958.

II: GENERAL CONDITIONS IN FIJI

II: General Conditions in Fiji

The establishment and maintenance of the force in Fiji was beset with numerous difficulties. Conditions of army life were such that the troops began to voice complaints which received press publicity in New Zealand early in 1941. Brigadier Bowerbank had been on a visit of inspection to Fiji from 16 to 21 January, and the report he made on 30 January received the close attention of War Cabinet. Complaints seem to have been concerned with general discomfort and deficiencies without any particular reference to health and medical conditions, but Brigadier Bowerbank was able to give the background against which the complaints had to be set.

The troops had arrived in November 1940 at the beginning of the rainy season and the period of the hottest weather and preparation for their reception had just commenced. Work on the camps was still in its initial stages, and though this was pushed ahead by the engineers, it was some months before completion and comfortable conditions could be expected. Under such conditions some degree of confusion and considerable discomfort was inevitable, and was noticed by troops who had previously trained in completed and permanent camps in New Zealand. The discomforts could be divided into two groups, those which were inevitable under active-service conditions and those which were avoidable. It could not be denied that there were conditions in the latter category.

One of the justifiable complaints was in regard to uniforms. The troops had been issued with only two pairs of shorts and two shirts. In a tropical country like Fiji where men sweat profusely and get wet through frequently, it was necessary for the clothing to be washed frequently. This resulted in rapid deterioration of the cloth, and Brigadier Bowerbank reported the clothing to be in a deplorable condition despite

care and attention by the men. Again there did not appear to be sufficient systematised recreational training. Fiji, with its tropical climate, did not permit of the same continuous arduous military exercises as in New Zealand, and consequent inaction led to boredom and a tendency to deterioration in the soldier's physical and mental fitness. Admissions to medical units, however, showed that the health of the troops had not lapsed but had been consistently good. Diseases of the alimentary and respiratory systems predominated.

Other reports indicated that lack of equipment and of highly trained instructors led to dissatisfaction. From the medical point of view, it was considered that combatant officers and NCOs did not give sufficient attention to elementary camp hygiene. In the early months persistent efforts had to be made by medical officers to convince them that general hygiene and cleanliness was entirely a unit responsibility. The main difficulty was to convince them of the menace of flies and the need also to control the breeding of mosquitoes. As a vector of infective disease the mosquitoes were not serious threats, as there was no malaria on Viti Levu, although dengue and filariasis were endemic, but their bites often gave rise to septic sores.

The incidence of septic sores, which sometimes developed into large and indolent ulcers, was a persistent problem. The ADMS, NZ Army Headquarters, Colonel Wilson, [1] reporting on an inspection of B Force in February 1942, stated that medical officers who had been longest in Fiji considered that lack of adequate laundry facilities was the most important factor in causing these septic sores – far more important than the provision of hot showers. Facilities for the washing of clothes and blankets had been improved to some extent since the early days, but provision was still far from adequate. The sores were most prevalent in the hot humid weather of the rainy season, when they also increased among natives. Vitamin deficiencies were suspected to be causative factors.

Transport was inadequate in the whole of B Force and medical units

were handicapped as well as other units, as regards both ambulance cars and trucks. In the early months not a single water cart was available in Fiji, despite the endemicity of typhoid and dysentery. On operational manoeuvres 400-gallon tanks were carted round on trucks, and bleaching powder was thrown into these. Stretchers, general medical stores and theatre instruments were also still required at the time of Colonel Wilson's visit. Such deficiencies were the natural result of an inadequacy of stocks in New Zealand, where replenishment of supplies was so dependent on overseas sources. By comparison the equipment of the medical staff of an American Air Force unit was nothing short of marvellous.

Despite the difficulties the medical unit (7 Field Ambulance) rendered efficient service, successfully carrying out the functions usually performed by several medical units, which speaks much for those who staffed the units.

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[1] Brig I. S. Wilson, OBE, MC and bar, ED, m.i.d.; Wellington; born Dunedin, 13 Jul 1883; physician; medical officer BEF Fd Amb, RMO 1 Bn Scots Guards, Guards Fd Amb, 1914–18 War; wounded, Somme, 1916; ADMS, Central Military District, 1935–39; ADMS, Army HQ, Sep 1939–Feb 1944; acting DGMS, Army HQ, Feb–Jul 1944; CO 2 Gen Hosp Oct 1944–Jul 1945.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

III: HEALTH OF TROOPS

III: Health of Troops

In September 1941 Lieutenant-Colonel Davie made a survey of the medical services and health of the troops in Fiji in the ten months from November 1940. At the Girls' Grammar School from 2 November 1940, and then at Tamavua from 14 August 1941, the military hospital had provided full medical and surgical services. Throughout it had had the valuable co-operation of the Colonial War Memorial Hospital.

The hostel at the Grammar School had been built to take about thirty-five girls, and there were difficulties when on occasions more than a hundred patients had to be accommodated. The average number in hospital over the ten months was 78. Patients had to be on verandahs screened by canvas curtains or in tents, from which they were driven into the main building by rain. The use of tents enabled cases of diphtheria, dysentery, mumps, and measles to be isolated, but nursing, especially at night and in rainy weather, was difficult.

In the new buildings at Tamavua conditions were very much better. At an elevation of 500 feet the buildings were cooler, and the layout of the hospital was good from the functional point of view. The hospital normally was able to provide for 140 patients, but 250 could be treated without overcrowding, and the quarters for the NZANS and Headquarters Company of 7 Field Ambulance were very good. The only real disadvantage was the much greater prevalence of mosquitoes in the new situation. Forest and partially cultivated land lay close to the hospital site and everyone needed a mosquito net, whereas often these could be dispensed with at the old hospital. Unfortunately no blackout arrangements were incorporated in the design of the new hospital. It was necessary to arrange for window screens for the operating theatre block, the orderly room, the admission and discharge room, some examination rooms, and at least one ward to enable work to be done efficiently at

night under war conditions.

Up to 24 September 1941 the number of patients admitted to the military hospital was 2136, the principal infectious diseases being measles 169, ringworm 105, dysentery 47, mumps 38 and diphtheria 12. Cases of measles and mumps often arrived with fresh troops from New Zealand. Surgical cases totalled 306. There were 50 admissions to the hospital at Samambula camp for venereal disease, including only one case of syphilis. Two deaths had occurred, one following an anaesthetic and one a case of meningitis following mastoid disease. The average strength of 8 Brigade Group during the period was about 3000; the average number of patients in medical units was 135, or 4.52 per cent of the troops.

The number of troops medically boarded during the ten months was 280 out of a total of 6000 troops sent to Fiji by that time. It was felt there was need for greater care in the preliminary examination of troops in New Zealand, especially as regards such conditions as flat feet and varicose veins.

There was a fairly high incidence of men reporting sick, but this was due to the requirement that all men receiving even very minor injuries had to report to the RAP so as to prevent septic sores. It was recognised that plenty of hot water for ablutions was the chief factor in the prevention of septic sores, and it was felt by Lieutenant-Colonel Davie that more hot water should have been supplied to the camps. Cold showers were provided throughout; hot showers had been turned down on the question of expense. Septic sores were found to be the greatest single cause of incapacity for training. Fungus infections affecting hands, feet, groins and axillae were also common.

The military hospital of 50 beds at Namaka was staffed by sections of B Company 7 Field Ambulance, and had an average daily bed state of 23. Nursing sisters were brought over by air from Tamavua for emergency duty from time to time. Venereal disease patients were evacuated to the CD hospital, Samambula, but in six months there were

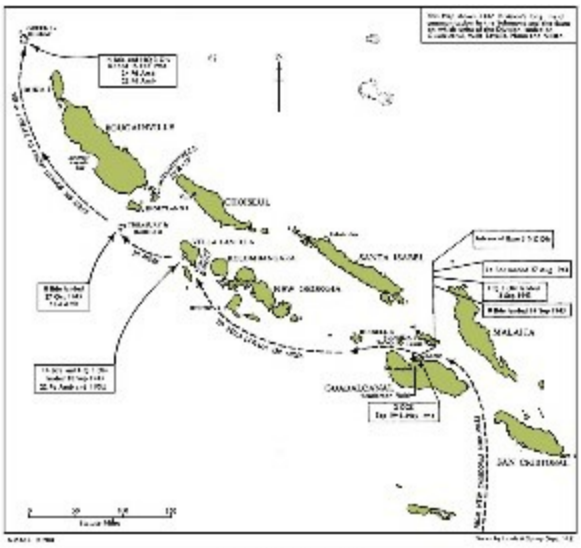
only four cases of gonorrhoea from Namaka camp. Climatic conditions were better on the Namaka side of the island, it being noted that when a battalion was changed from Samambula to Namaka there was an immediate reduction in its daily sick parades.

Major Talbot found that eye and ear conditions did not reduce efficiency in Fiji to any marked degree. However, the hot and humid climate was favourable to middle ear infections, and some ears that had been 'dry' for long periods became active, and chronic nasal sinus conditions were troublesome. Soldiers with such infections usually had to be employed at Base or returned to New Zealand. Otitis externa was prevalent in the climate of the Pacific, but could be effectively treated during a period in hospital. Although trachoma is endemic in the Fiji Islands, no cases of trachoma were found in either white soldiers or civilians. There was very little trouble among the New Zealand troops from heterophoria, or from functional asthenopia. An idea that 'glare' in a tropical country would need to be counteracted by the wearing of tinted glasses was at first widespread among the troops. As a matter of fact, glare is no more of a problem in Fiji than it is in New Zealand. The country is, at least on the Suva side, green, and the sky often cloudy, as would be expected with an annual rainfall of from 75 to 150 inches. The idea died out by the use of persuasion and explanation. Very little conjunctival infection occurred. Eye and ENT admissions for eight months totalled 148, while there were 515 out-patients.

Sanitation and Hygiene

Accommodation was reported by Lieutenant-Colonel Davie to be satisfactory in all camps, the ventilation of huts being good. Bedbugs had appeared in the camps on occasions but regular inspection and effective treatment eliminated them. All sewage was water-borne and disposal was very satisfactory. Garbage from the eastern area was carted to the town dump, while that from the western area at Namaka was buried in a Bradford tip on the outskirts of the camp. Cookhouses were fly-proofed. Mosquito control work was carried out and all men in both

areas slept under mosquito nets. At Samambula water was drawn in ample quantity from the town supply, while at Namaka water drawn from a stream was filtrated and chlorinated. Some of the troops washed their own clothes but most sent them to a *dhobi*. Fijians and Indians were employed in camp cookhouses and on general sanitary work. They were medically examined and no men with hookworm, venereal disease or tuberculosis were employed.



SOLOMON ISLANDS

The native Fijian forces came under the supervision of the NZMC with the assistance of some Government medical officers on full-time duty; this enabled a closer supervision of both men and camps to be made. All the Fijians had to wear boots or sandals in the camp as a preventive against hookworm. Prophylactic ablution huts were also constructed in their camps. Although there was no malaria in Fiji, special precautions were taken when aeroplanes arrived from malaria-infected areas.

Food

Fresh vegetables and fruit were supplied in good quantity and condition, but the condition of some of the tinned vegetables supplied gave rise to some concern in September 1941. Frozen mutton arrived in good condition, and local beef supplies were reasonably satisfactory. The

hospital dietitian gave lectures to quartermasters and sergeant cooks on the making up of dishes with the food available, the care of food and the avoidance of waste.

General preventive measures undertaken were:

(a) Inspection of dairy factories for the selection of milk and butter. This entailed visiting some factories that could compare with some of the best in New Zealand.

(b) Bakeries and butchers' shops were inspected in Suva and hygienic conditions were improved.

(c) Cafeterias and restaurants open to the troops were inspected periodically.

Japan Enters War

Immediately following the unprovoked attack by Japan on Pearl Harbour on 7 December 1941, extra battalions were sent from New Zealand to build up the strength of New Zealand troops in Fiji to two brigades. There was a period of feverish activity in improving the defences of Fiji as the Japanese swept down through the Solomons and into the north of the Gilbert and Ellice Islands.

The medical requirements of 8 Brigade had to be adjusted in accordance with the tactical situation in Fiji and the build-up of the force to over 12,000 men. The defence problem was one of repelling beach invasions at certain points, the principal areas being near the two military hospitals, Tamavua and Namaka, on the east and west sides of the island respectively. A coastal road encircled the island, the distance between Suva and Lautoka being 180 miles one way and 150 miles the other.

Two companies of 7 Field Ambulance were immobilised at Tamavua and Namaka as hospital staffs. They were to act as main dressing stations in the event of hostilities. This left only one company free to form advanced dressing stations, and this company alone had the necessary transport to render it mobile.

In the reorganisation it was arranged that the Tamavua military hospital be established as a separate hospital of 140 beds, expandable to 200, and that Namaka military hospital be similarly separately established with accommodation of 50 beds expandable to 100 beds. This latter unit was also to control and staff a hospital at Lautoka for the Civil Construction Unit, which had been sent from New Zealand to complete the airstrip at Nandi, and also to serve the expanded RNZAF units.

To form a complete field ambulance apart from the hospital staffs, two companies were sent from New Zealand to supplement the one remaining mobile company of 7 Field Ambulance. Extra regimental medical officers were also provided for the extra combatant units sent to Fiji. Two small hygiene sub-sections were also despatched from New Zealand – one for each end of the island. Although ten nursing sisters and some reinforcements reached Fiji in February, the remaining reinforcements for the new organisation did not join 8 Brigade until 12 March 1942. Seventh Field Ambulance was then reorganised as a complete field ambulance at Samambula, while Tamavua hospital became a separate unit. The company of the ambulance which was at Namaka remained on the western side, and with the addition of considerable reinforcements in February had become 22 Field Ambulance and serviced the newly formed 14 Brigade.

As the eastern and western areas of the island were practically separate as regards administration, and would have been entirely so if hostilities had commenced, plans were pushed forward for the erection of a larger hospital at the western side to replace Namaka hospital. This small hospital was overcrowded as it had to receive and treat all cases in its brigade area, and in addition it was badly sited on the edge of the extensive aerodrome, which would have made its position untenable in the event of hostilities. The new hospital, with a 300-bed capacity, was erected on slightly elevated ground on the bank of the Sambeto River, some miles away, but owing to the return of the force to New Zealand in July it was never used by the New Zealanders.

At Tamavua members of the field ambulance worked three eight-hour shifts a day for many weeks tunnelling out a 250-bed hospital shelter in the soapstone beneath a hill across the road from the Tamavua hospital. It was completed under the supervision of engineers as a major project in the defence scheme. Shelters and slit trenches were also dug out at Battle Headquarters at Tamavua village, as well as RAPs round the area of Suva's defences, which were to be manned in the event of attack by New Zealanders and members of the Fiji Defence Force.

Unfit Men

In his monthly report for May 1942 the ADMS stated:

The general health of the service personnel is good but far too many men are sent here who are quite unfitted for service in the tropics. It has been the custom in New Zealand to fill drafts with Grade II men when Grade I men were not available. This system should be discontinued: no man should be sent for service here unless he is absolutely fit. On no account should a man suffering from skin trouble be sent to Fiji: a large number of men suffering from acne, more or less quiescent when they left home, have had to be boarded. Men suffering from slight varicose veins, varicocele and other minor disabilities that cause little trouble in New Zealand, have symptoms very markedly increased and spend so much time excused duty or on light duty that they have to be boarded. No man who has a head injury or a nervous breakdown should be passed for service over here. A very large number of cases have been boarded for asthma, some of whom reported at the time of original examinations that they were subject to that disability. [1]

The ADMS again stressed the necessity for hot showers for the men and a better laundry service. The natives did not cleanse garments properly and he suggested that a brigade laundry should be set up. Septic sores had increased with the scratches the men received in jungle training and the ADMS recommended that each man should be provided

with an antiseptic of some sort to apply immediately to even the slightest injury. Everything was being done to provide protective foods for the troops but Vitamin 'C' was a problem.

The ADMS reported in June that a few cases of anxiety neurosis had lately appeared and a special board had been set up to examine forty men attached to Suva Battery. A large proportion were found to be definitely mentally enfeebled and should never have been passed for service. The ADMS considered it unreasonable that such men had been sent to units which contained native troops. He stated that he agreed with the 'Anxiety Neurosis Committee, 2 NZEF ME' that a psychiatrist should be attached to the mobilisation camps in New Zealand.

Fiji Crisis

In the early months of 1942 Japanese submarines were active around Fiji, and when the Allied defences collapsed in the Far East and the enemy's thrust reached the southern Solomons, considerable anxiety was felt about the adequacy of the Fiji defences. In April the New Zealand Chiefs of Staff advised Cabinet that another division was required for Fiji, and as America was considering sending troops to New Zealand the situation should be placed fully before that country. When New Zealand pointed out that to send another division would cripple the defences of the Dominion, the United States suggested that it should take over complete responsibility for Fiji and Tonga and the New Zealand garrison could return to the Dominion. This proposal was agreed to by the British, Fijian and New Zealand governments and in June troops of 37 United States Division began to arrive in Fiji, which was transferred to United States command on 18 July 1942.

Eight thousand New Zealand troops returned to the Dominion in July and August and about 2000 remained at the request of the United States. These men were in anti-aircraft and commando units.

It was hoped by the Americans that the New Zealand troops thus relieved would be made available for amphibious training with 1 Marine

Division in anticipation of joint offensive action to the north-west.

Americans Take Over

On 14 June the Civil Construction Unit hospital which had recently been used by Namaka hospital as a convalescent depot was closed and the building was handed over to an American medical unit. The next day seventeen stretcher cases from the Namaka hospital were taken by ambulance to Suva, where they embarked for New Zealand. The walking patients of the hospital left for Suva on 16 June and all equipment and stores were handed over to 142 US General Hospital.

On 17 June 141 patients from Tamavua hospital, 81 patients from Namaka hospital, and 38 boarded personnel embarked at Suva. The medical staff, including 35 nurses, of 71 US Station Hospital arrived in the middle of the month, and on 28 June the Tamavua hospital was officially handed over to the United States medical staff.

In July the hospital and field ambulance staffs returned to New Zealand with other troops to undergo reorganisation as 3 NZ Division and be prepared for service elsewhere in the Pacific.

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[1] **The complaint of the medical services in Fiji with regard to the inadvisability of sending troops from New Zealand with minor disabilities such as flat feet, varicose veins and varicocele, and with previous history of head injury, is in keeping with similar complaints from the Middle East and later from New Caledonia. These complaints tended to cease when medical officers realised that the real problem was one not of any organic disability but of psychoneurosis, which became more marked in a debilitating climate and in periods of inactivity.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 2 — THIRD DIVISION IN NEW CALEDONIA AND THE SOLOMONS

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: ORGANISATION OF 3 NZ DIVISION MEDICAL UNITS IN NEW ZEALAND AND FUNCTIONING IN NEW CALEDONIA

I: Organisation of 3 NZ Division Medical Units in New Zealand and Functioning in New Caledonia

The following medical units returned to New Zealand from Fiji in July 1942: Base Hospital (from Tamavua); Base Hospital (from Namaka); 7 Field Ambulance; 22 Field Ambulance; Hygiene Section (from Samambula); Hygiene Section (from Namaka); ADMS with Medical Stores Section. After a period of leave the members of these units reassembled at Papakura and the reorganisation of the Division began.

The two hospitals were amalgamated to form 4 NZ General Hospital. Equipment and personnel for a general hospital were made up from the constituent units and Army Headquarters supplied deficiencies. This was the first time a general hospital had been equipped in New Zealand, and many items had to be improvised or manufactured locally; some were not available when the unit went to New Caledonia. The two field ambulances (7 and 22) were light field ambulances. These were built up to full field ambulance war establishment in both equipment and personnel.

The two hygiene sections were formed into 6 Field Hygiene Section. The Medical Stores Section was formed into an Advanced Depot of Medical Stores and brought up to war establishment in both equipment and personnel.

New units formed were two Field Surgical Units, which were complete in equipment and personnel, and whose personnel were drawn mainly from the experienced orderlies of 4 NZ General Hospital; a Malaria Control Unit – again complete in personnel and equipment, its officers being a medical officer, an entomologist and an engineer officer; a Field Transfusion Unit complete with equipment and refrigerator van;

an Optician Unit and a Motor Ambulance Convoy. (Additional units formed and equipped in New Zealand during 1943 and sent forward to join the Division were 2 NZ CCS, 2 NZ Convalescent Depot, and 24 NZ Field Ambulance.)

Training

The main points of training in New Zealand from July to December 1942 were:

1. **Route marching. All units were expected to attain a standard of 20 miles a day with ease.**
2. **The move of the Division in October from Auckland to the Hamilton – Cambridge – Te Aroha area. This took the form of a three-day march by all units concerned.**
3. **Medical units were given the opportunity of sending orderlies to Auckland and Waikato hospitals for training in hospital and theatre work. This training extended over a period of six weeks in each case.**
4. **Field ambulances had small 20-bed Camp Reception Stations in their brigade areas. These CRSs held minor sick but evacuated the bulk of the cases to public hospital.**
5. **Fourth NZ General Hospital opened a small hospital in Hamilton at the Hamilton West School.**
6. **Manoeuvres – a full-scale exercise lasting ten days was held in the Kaimai Range late in October. The medical units taking part were 7 and 22 Field Ambulances. The manoeuvre took place in country similar to that which it was anticipated would be encountered in the Pacific. The manoeuvres gave the opportunity to gain experience in field hygiene away from the established camps.**
7. **Special emphasis was laid on field hygiene and malaria control and also on evacuation in the field. (A special course in hygiene was held for senior combatant officers.)**

The ADMS left for New Caledonia on 7 November to make preliminary medical arrangements and the medical units proceeded overseas in two flights in December.

On 1 December there embarked 22 Field Ambulance, advanced party of 4 General Hospital, 1 Field Surgical Unit, 6 Field Hygiene Section and 1 Malaria Control Unit.

On 28 December the balance of the units embarked – 7 Field Ambulance, 4 General Hospital, 2 Field Surgical Unit, 4 MAC and Advanced Depot of Medical Stores.

New Caledonia - General Situation

As later events were to prove, the turning point in the war in the Pacific had been reached in 1942 when on 4 June the United States Fleet dealt a crushing blow against the Japanese Fleet at the Battle of Midway. From that stage the Allies turned to the offensive. In August 1942 Americans landed on the Japanese-held island of Guadalcanal in the Solomon Islands, 1000 miles to the north of New Caledonia. The outcome of operations on Guadalcanal was still being awaited when 3 NZ Division reached New Caledonia in December 1942 and January 1943. Complete control of the Solomons was considered an essential pre-requisite for Japanese offensive operations against the New Hebrides, New Caledonia and Fiji. The issue lay between the eventual domination of the Solomons from Allied airfields and the possibility of the Japanese landing artillery, putting Henderson Field on Guadalcanal out of action, and nullifying the Allied strategical advantage.

NEW CALEDONIA

In New Caledonia 3 NZ Division came under the operational command of the United States forces. The whole island was divided for

purposes of defence into three sectors. The Fighting French forces held the southern sector, including the main port of Nouméa, 43 US Division the central sector, and the New Zealanders were allotted the northern sector, where particular attention was to be paid to the defence of supplies and airfields at Plaine des Gaiacs and Koumac and the installations at Pam and Gomen. Plans for the defence of other points and airfields were to be prepared and a continuous watch kept on both coastlines.

The New Zealanders replaced American troops required for fighting on Guadalcanal, and when that island was conquered in February 1943 they entered upon a garrison role and underwent further training while the Division was being built up. But the completion and concentration of 2 NZEF (IP) in New Caledonia took another six months. Lack of shipping was the main difficulty, though there were problems of manpower in New Zealand. The furlough draft from the Middle East was a major complication. For months the Division was deficient in equipment as well as in troops, and its participation with the Americans in the Solomon Islands campaign was delayed.

Dispositions of Medical Units

When 3 Division moved into New Caledonia it occupied areas extending from the north of the island to the south of Bourail. Fourteenth Brigade, with headquarters on the Taom River, was in the northern section; 8 Brigade was in the central section with headquarters in the Népoui valley and within easy reach of the airfield at Plaine des Gaiacs; 15 Brigade was in the southern section, with headquarters at Néméara. (When 43 US Division moved from New Caledonia north into the Solomons combat zone in February 1943, 8 Brigade took over the central sector of the island at Bouloupari. This necessitated an extension of brigade sections and duties until the Division extended over three-quarters of New Caledonia.)

The New Zealand units were scattered over a wide area in which road

communications were bad, so ADMS 3 NZ Division arranged for each field ambulance to establish one or more dressing stations as required to serve their respective brigade groups and for the main dressing station to provide the fullest possible treatment. Field surgical units were attached to the two field ambulances.

When they arrived in New Caledonia in December 1942 and January 1943, the New Zealand medical units were disposed in the following locations:

ADMS 3 NZ Division	Moindah
6 Field Hygiene Section	Moindah
4 MAC	Moindah
1 Malaria Control Unit	Base- Bourail
22 Field Ambulance	Tinipp (near Ouaco) – 14 Brigade
1 Field Surgical Unit (att 22 Fd Amb)	Tinipp
7 Field Ambulance	Népoui valley – 8 Brigade
7 Field Ambulance (B Coy)	Néméara-15 Brigade
2 Field Surgical Unit (att 7 Fd Amb)	Népoui valley
4 General Hospital	Boguen valley
Advanced Depot Medical Stores	Boguen valley
1 Optician Unit	Boguen valley
1 Field Transfusion Unit	Attached to Veterinary Depot, US Forces

In addition there were 14 RMOs with combatant units and at base camp and at the Base Detachment at the port of Nouméa.

The Base Camp Reception Hospital came into being in the three months from January 1943, when the disposition of units in New Caledonia proved the necessity for a hospital in the base area to admit the lighter sick and also patients with venereal disease. The OC of the unit was also SMO of the base area. The unit had an operating theatre. It admitted patients from April 1943 to August 1944.

Climate

The climate of New Caledonia was sub-tropical and healthy. During the summer months high temperatures were reached but, for the most part, humidity was low. The nights were comparatively cool, facilitating sleep. The average rainfall was 40 inches a year, half of which fell during the 'rainy season' from January to April. The climate was less trying than that of Fiji, which was farther north, and acclimatisation was not difficult for the average New Zealander.

Endemic Diseases

Hookworm was widespread among the population of the island, as in all Pacific islands. A survey of school-children had revealed that over 50 per cent were infected with either ankylostomiasis or trichocephaliasis. Dysentery, both amoebic and bacillary, was endemic. Dengue fever was prevalent in the towns. Typhoid fever occurred among the native and civilian population, while tuberculosis was common. Leprosy was endemic and the thousand cases among the local population were not strictly segregated but continued to live with their families. Sporadic cases of plague occurred, the rat flea being common. Dermatitis of all sorts and impetigo were widespread, but septic sores, a common cause of disability in Fiji, were not prevalent. Cases of filariasis, dengue fever and yaws also occurred. Venereal disease, especially gonorrhoea, was fairly common among the local population.

There was no malaria as the anopheles mosquito was not present on the island. Other mosquitoes, however, were relatively common, especially during the rainy season. (In most camp areas the prevailing species, aedes vigilax, a salt-marsh breeder, proved troublesome in the wet months, January to April. At their peak periods the mosquitoes interfered considerably with work and morale, while they were associated with outbreaks of dengue fever in March.)

Health of Troops

Special instructions on hygiene and sanitation were issued to the troops and steps were taken to safeguard them against endemic disease.

In the early weeks following the Division's arrival there were many cases of diarrhoea and an outbreak of gastro-enteritis affecting seventy men, but no serious outbreaks of other infectious disease. The incidence of diarrhoea decreased as the troops became acclimatised, just as had happened with the American troops. Skin diseases and ear and upper respiratory infections accounted for much of the sickness.

Sanitation

Under the supervision of the Divisional Hygiene Officer and personnel of 6 Field Hygiene Section the general standard of field sanitation was raised and measures were taken to combat the flies. Difficulties were experienced at first as timber was scarce and no fly-proofing materials were available, making it impossible to provide fly-proofing for kitchens and ration stores, while supplies of disinfectants were on a low scale. Latrines were of the deep-trench box-cover type. Basins of disinfectant were placed outside them. Funnel urinals were formed with pipes of bamboo leading into a pit filled with stones. Refuse at base camp was kept in fly-proof drums and disposed of twice daily to a pig farmer. Refuse in the form of tins was burnt daily, the tins then being crushed and buried. Sullage water was disposed of by soak-hole methods or by means of an evaporation pit.

Hygiene Units

Two units accompanied 3 Division: the Base Hygiene Unit and 6 NZ Field Hygiene Section.

The base unit consisted of 1 officer, 6 NCOs and 10 men. Its role was a stationary one in New Caledonia and it was concerned with established and well-built camps. The Field Hygiene Section consisted of 1 officer, 4 NCOs and 10 men. The officer was a medical officer and the large percentage of the men were tradesmen (plumbers, carpenters, etc.) and there were four ASC personnel attached.

This latter unit was attached to the Division and was an integral

part of it. It was mainly used near Divisional Headquarters and detachments of it, usually under a senior NCO, were associated with the brigades. In the brigades the detachments lived with the field ambulances. During the training period in New Caledonia 6 Field Hygiene Section was primarily concerned with training its own personnel and sanitary personnel and officers and men in outside units. Courses were run for sanitary personnel and lectures given in their own camps to officers and NCOs. The workshop was busy preparing sample latrines, collapsible safes, grease traps, fly traps, etc., from which units could copy their own. A portable blanket fumigator was in use and was taken to units regularly. All this time the routine camp inspections, water inspections and hygiene duties were carried out by the unit.

Water

In the selection of camp sites proximity to a stream was considered of first importance to provide for ablution and bathing facilities. Bacteriological examination of samples of water taken from various streams from which drinking water was drawn for the use of units and camps showed in almost every case evidence of some degree of contamination. Strict control of measures adopted for the purification of drinking water was therefore carried out. The water carts supplied from New Zealand were found to be unsatisfactory in many respects. A plan was therefore developed for the establishment of water points, thus reducing the employment of water carts to a minimum. At the points the water was pumped into canvas tanks, then chlorinated and filtered and stored in camp containers.

Rations

Rations were issued according to the American scale and were mostly tinned foods. This provided a varied diet, sufficient in amount and well balanced, but the troops found it irksome and unpalatable and food value was lost in items that were not eaten. The diet was rather different from that in New Zealand, and many men missed the more

bulky meal of bread and meat, but as the cooks became accuWH2PMe to the new type of rations they provided more attractive meals. Rations as supplied in some cases proved unfit for consumption and it was necessary to condemn large quantities, especially of salted beef and pork. A special administrative instruction was therefore issued on the inspection of foods. Hospital rations on a special scale were provided for patients.

At first 90 per cent of food came out of tins, and among a proportion of New Zealand troops, particularly some of the staff of 4 General Hospital, a nutritional anaemia (macrocytic) was detected, moderate but definite in degree. This was, in part, thought to be due to a deficiency in the ration, which did not contain any meat comparable to bully beef, and, in part, to the disinclination of troops to eat certain of the American canned foods. The anaemia did not respond to iron, but improved on both liver extract and yeast extract (marmite), and it was assumed to be due to lack of the so-called extrinsic factor. With the addition of fresh meat, fresh butter, fresh fruit and vegetables to the ration there was no further evidence of the trouble. During March 1943 supplies of frozen meat and butter began to come forward from New Zealand, and then fresh vegetables and fruit, some from Australia.

A new appointment to the staff of 4 General Hospital in the person of a messing officer made possible the better balancing and arranging of the hospital diets and facilitated the purchasing of certain local fruits and vegetables, and, for the patients, of eggs, fish and fresh milk. When additional trained cooks arrived from New Zealand, the standard of messing at the hospital became as high as in the best camps in New Zealand.

Some units obtained leases of local land and set about growing their own fresh vegetables to offset the predominance of canned foods, while canteen purchases and issues and parcels from New Zealand provided supplementary items.

Work of Field Ambulances

The field ambulances had to provide more or less complete medical services for their respective brigades and to that end established small hospitals. Soon after its arrival in December 22 Field Ambulance was running a hospital near Ouaco, at the foot of Mount Ouazangou and near the Tinipp River – about 200 miles from Nouméa and about 100 miles from the New Zealand base in the Bourail area. With 1 FSU attached and with the posting of seven sisters of the NZANS in January, the hospital was well staffed. At first only tents were used for the hospital but a building was erected in February; it was 94 feet long and was divided into three wards with a total capacity of sixty beds. The engineers assisted with a compressor to dig post-holes in the rocky site, the men of the unit provided timber gangs and erected the structure, while native labour was employed to thatch a roof with niaouli bark. The building had a concrete floor. Other medical units also built these native-style huts or *bures*: 7 Field Ambulance at Népoui and Bouloupari, Base Camp Reception Hospital at Bourail. They were used for messrooms, cookhouses and stores as well as for wards. Nursing sisters were also attached to the hospitals run by 7 Field Ambulance at Bouloupari and by A Company 22 Field Ambulance at Népoui after 7 Field Ambulance had left the latter site. The sisters, in addition to their nursing duties, trained nursing orderlies, and this instruction proved of great value when the units moved forward to the Solomon Islands. X-ray examinations were carried out by 109 US Station Hospital before X-ray equipment was functioning at 4 General Hospital.

The field ambulances were to some extent deficient in equipment. Tools were insufficient for the necessary construction work, as were timber, wire and tarpaulins. Twenty-second Field Ambulance reported that its lighting equipment included two old 1910-pattern acetylene lamps without carbide, and 1 FSU likewise had one of these lamps which had arrived in New Zealand in 1918. Mosquito nets were of wide-mesh gauze which did not restrict the entry of unfed or small mosquitoes, though they did prevent their exit after they were swollen with human blood.

As 4 General Hospital was not completed until early March 1943 the field ambulance and reception hospitals were called upon to cope with the sickness during the initial period of settling in and acclimatisation. Most units were not up to full strength, which increased the burdens on the different staffs.

Training of Medical Personnel in New Caledonia

The training depot for other ranks was attached to the Base Camp Reception Hospital, as at Maadi Camp in Egypt. Field training and instruction in field sanitation were also given to junior medical officers of 4 General Hospital so as to fit them for divisional units. Technicians and medical officers were trained in malaria control and investigation at the American Naval Hospital. Regular clinical meetings, attended by all medical officers in the force, were held fortnightly at 4 General Hospital, where lectures and demonstrations were given. Leading Americans from their hospital staffs attended frequently and often acted as guest speakers. Both hospital and field medical officers thus gained knowledge of tropical diseases and also kept up their clinical work. In May 1943 a malaria control and tropical hygiene school was established to train the staff of the malaria control unit and unit malaria squads and to spread knowledge of malaria throughout the force. The field units carried out combat training and landing operations in conjunction with their brigades. They learnt the futility of attempting beach landings with the weight of equipment usually carried. New Zealand equipment was felt to compare very unfavourably with that of the United States forces; for example, four United States stretchers weighed only as much as one New Zealand stretcher.

General Medical Arrangements

From the outset the fullest co-operation was extended by the Americans to the ADMS 3 NZ Division (Colonel Twhigg [1]) and his officers. The American medical organisation in New Caledonia comprised a 750-bed hospital at La Foa, two station hospitals, each of 250 beds,

and a medical battalion, their equivalent of three of our field ambulances. There was no convalescent depot, cases being sent to Australia, New Zealand or the United States for long convalescence. The medical battalion was withdrawn from the northern sector prior to the arrival of New Zealand units. Hence it was necessary for the two New Zealand field ambulances to function from the outset. Arrangements were made for 109 American Station Hospital at Kalavere to receive the more seriously ill New Zealand patients until such time as 4 NZ General Hospital could be established.

Medical Planning

The undecided composition of the Division – whether it was to have two or three brigades – affected the planning of the medical services. A conference of senior medical officers was held at Headquarters 3 Division on 29 March 1943 to discuss medical requirements for the force in view of the then recently approved expansion. Account was also taken of prospective battle casualties in coming active operations, and the likely incidence of malaria, dysentery, septic sores, mental sickness and other ailments in the Solomon Islands.

In New Caledonia there were two field ambulances, two field surgical teams, one general hospital (600 beds), one base camp reception hospital (75 beds) and one camp reception station (20 beds). Being formed and trained in New Zealand for addition to

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[1] Brig J. M. Twhigg, DSO, ED, m.i.d.; Wellington; born Dunedin, 13 Sep 1900; physician; CO 5 Fd Amb May 1940-Nov 1941; p.w. Nov 1941; repatriated Apr 1942; ADMS 3 NZ Div Aug 1942-Apr 1943; DDMS 2 NZEF (IP) Apr 1943-Aug 1944; ADMS 2 NZEF (UK) Oct 1944-Feb 1946.

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3 Division was one casualty clearing station (200 beds), one field ambulance, and one convalescent depot (500 beds).

To cope with the estimated requirements of a force of 15,000

engaged in combat duty in a malarious region, it was decided that another unit of similar capacity and type to the CCS would be necessary. Without knowing the future role of the force it was difficult to determine whether this unit should be a 200-bed hospital (expandable) or a 200-bed CCS (expandable). The plan suggested was that the two field surgical units be amalgamated to form the basis of a CCS, that the establishment be brought up to that of a CCS and the balance of necessary equipment provided.

This plan was approved by the DGMS at Army Headquarters in New Zealand, but with the decision in June to limit the Division to two complete brigades of 12,000 men, an extra medical unit was not thought necessary. The choice then lay between sending forward 24 Field Ambulance, which was ready to proceed overseas, and disbanding it and forming the proposed new CCS. A decision was made in favour of using the field ambulance, which with the addition of one or both field surgical units could act as a forward operating unit.

Hospital Arrangements

With the opening of 4 General Hospital, the policy in regard to the medical care of New Zealand troops was to utilise New Zealand hospital facilities as far as possible. In cases of urgency, or where the medical officer was of the opinion that road travel would adversely affect the patient, he was admitted to the nearest suitable hospital irrespective of nationality.

In deciding what surgical operations should be performed at field ambulance main dressing stations, with or without field surgical units attached, the policy laid down was that urgent operations should be performed at the MDS, particularly in cases where the time factor or hazards of transport assumed importance. Operations not urgent were carried out in the field units only if in the opinion of the surgeon the cases could be satisfactorily treated under the conditions prevailing, and the patient was not deprived of the advantages of special facilities available at the general hospital.

Medical Headquarters, 2 NZEF (IP)

To meet the requirements of the force as it was constituted by early 1943 a medical headquarters was established at HQ 2 NZEF (IP); it was responsible for administration of the medical services, exclusive of divisional medical services, for co-ordination between United States and New Zealand medical services, for medical supplies, for medical boardings, for evacuation of sick and wounded, and for medical records and statistics. The United States command was responsible for all transportation from New Zealand to New Caledonia and return, and for all rations, including medical supplies. The Americans evacuated sick and wounded New Zealanders and Americans to New Zealand. The New Zealand Division delivered patients to a given location in New Caledonia and the New Zealand Army took re-delivery at the ship's side at a New Zealand port, usually Auckland.

Colonel Twhigg was appointed DDMS 2 NZEF (IP) and in April 1943 Colonel Speight [1] became ADMS 3 NZ Division.

4 General Hospital

The establishment, as arranged in New Zealand, for 4 General Hospital was for a 600-bed hospital with extra surgical equipment so that a 200-bedded hospital could, if necessary, be budded off from it at any time. In November 1942 Colonel Tennent [2] was appointed commanding officer, with Lieutenant-Colonel Comrie [3] in charge of the surgical division and Lieutenant-Colonel Sayers [4] in charge of the medical division. On account of his pre-war experience as a medical missionary in the Solomons, the last officer was brought back from the Middle East to be consultant in tropical diseases to the Pacific force.

The first site of 4 General Hospital in New Caledonia was at Boguen valley, a position selected for tactical reasons so that the hospital could serve both the Division and the base organisation. The tented hospital opened there on 8 March 1943 after two months' strenuous work by the

staff, who, without much engineering assistance and with little equipment, had to clear bush, construct roads, erect tents, and build native-type huts [5] with rain, mud and mosquitoes as trying handicaps. The mosquitoes which bred uncontrolled

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[1] Col N. C. Speight, CBE, ED; Dunedin; born Dunedin, 6 Jul 1899; surgeon; medical officer 1 Conv Depot Mar-Nov 1940; CO 6 Fd Amb Jun-Nov 1941; p.w. Nov 1941; repatriated Apr 1942; ADMS 4 Div (NZ) Nov 1942-Mar 1943; ADMS 3 Div Apr 1943-Nov 1944.

[2] Col A. A. Tennent, m.i.d.; Wellington; born Timaru, 4 Sep 1899; medical practitioner; 2 i/c 4 Fd Amb Sep 1939-Mar 1940; DADMS 2 NZEF Mar-Dec 1940; CO 1 Conv Depot Dec 1940-Oct 1941; CO 4 Fd Amb Oct-Nov 1941; p.w. Nov 1941; repatriated Apr 1942; ADMS 4 Div (NZ) Aug-Oct 1942; CO 4 Gen Hosp 2 NZEF (IP) Nov 1942-Nov 1943; SMO Sick and Wounded, Army HQ, 1944; ADMS, Central Military District, 1944–45.

[3] Lt-Col E. Y. Comrie; Hastings; born Pukekohe, 12 Apr 1900; surgeon; OC Tamavua Hosp Mar-Jun 1942; i/c surgical division 4 Gen Hosp Sep 1942-Jan 1944; CO 2 CCS Jan-May 1944; 3 Gen Hosp Jul-Dec 1944; i/c surgical division 2 Gen Hosp Jan-Nov 1945.

[4] Col E.G. Sayers, CMG, Legion of Merit (US); Dunedin; born Christchurch, 10 Sep 1902; physician; medical officer 1 Gen Hosp May 1940; i/c medical division 1 Gen Hosp Aug 1941-Sep 1942; 4 Gen Hosp Oct 1942-Sep 1943; Consultant Physician 2 NZEF (IP) 1943–44; CO 4 Gen Hosp Nov 1943-Aug 1944; Dean of University of Otago Medical School.

[5] The huts were built from the stuffed trunks of niaouli trees (eucalyptus) and thatched by the natives with grass or bark. They were used for administrative buildings, cookhouses and kitchens.

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in the large salt marshes on the coast were a constant distraction at

this time. The equipment which arrived in February had suffered damage from being stored in the open at the port of Népoui, 60 miles away, and also got soaked in open trucks carrying it to the hospital site. The original operating theatre, comprising a single large Indian pattern tent with a smaller tent as an ante-room, boasted a concrete floor and insect proofing, but some excellent surgery was performed in this rather rudimentary structure. Later the theatre was enlarged to consist of four large Indian pattern tents arranged in the form of a cross, with a space in the centre giving access to a theatre on either side, a changing room in front and a sterilising room behind. This arrangement worked admirably, especially when the tents were raised to give more head room and the centre poles done away with, an inside frame supporting the roof. During April construction was halted and consideration was given to transferring the hospital to the former site of 109 US Station Hospital, but work was resumed as the hospital continued to stay at Boguen. In April an epidemic of dengue contracted at Bourail and Nouméa increased the number of patients at the hospital, and a macrocytic anaemia due to dietary deficiencies was detected in some of the hospital staff.

During the following months the hospital slowly settled down into a routine, dealing mainly with mild cases of sickness and accidental injuries. High temperatures and high humidity no longer prevailed and the mosquito plague diminished. On 16 July eighty New Zealand WAACs arrived to augment the staff, and allowed some of the orderlies to be released to field units. In August, when the CCS and field ambulances closed prior to moving forward to the Solomon Islands, the number of patients rose to 292, nearly the capacity of the hospital.

Re-location of 4 General Hospital

On 2 July 1943 DDMS 2 NZEF (IP) attended a conference with American senior medical officers to discuss medical arrangements for 2 NZEF (IP) when 3 Division should move forward to a combat zone. In the forward areas would be the divisional units comprising the three field

ambulances, the CCS and field surgical units. Base units located in New Caledonia would be 4 General Hospital and 2 Convalescent Depot. As the general policy was to evacuate casualties from the Solomons by hospital ships or other surface craft to Nouméa, it was decided to shift 4 General Hospital to the neighbourhood of this port, from which also patients were evacuated to New Zealand.

A site was selected in Dumbé'a valley, 11 miles from Nouméa, and adjacent to the site being prepared for 8 US General Hospital. Development of the site for the hospital was begun forthwith. At first the hospital was accommodated in tents until the permanent prefabricated wooden wards manufactured in New Zealand were available.

The move of the main body of 4 General Hospital to Dumbé'a valley was completed early in October, and the hospital opened to receive patients on 8 October 1943. A detachment of 150 beds remained at Boguen to provide hospital facilities for troops in the base area until 2 Convalescent Depot opened a hospital at Kalavere. The depot (which had arrived from New Zealand on 24 August and opened temporarily at Roadhouse Houailou) shifted in September to the site vacated by 109 US Hospital at Kalavere in the Moindah area. Here a prefabricated hospital of 150 beds was erected by engineers and was opened on 7 March 1944, when the combined unit became 2 NZ Convalescent Depot and Kalavere Hospital.

At Dumbé'a valley, where it opened on 9 October, 4 General Hospital functioned as a 600-bed hospital equipped on a lavish scale. It was constructed of wooden huts prefabricated in New Zealand and erected by New Zealand engineers. Every building had electric light, hot and cold running water, water closets, a telephone, and, where necessary, steam sterilisation and cooking. A large powerhouse with enormous boilers fired by diesel oil fuel drove a dynamo generating enough electric power to supply the needs of a town of 2000 inhabitants. It was not completed until June 1944. There was water-carried drainage and sewage disposal. The X-ray plant was an elaborate one but was not installed until some

time after the hospital opened.

The hospital was not called upon to operate anywhere near capacity, as the limited actions of 3 Division brought few wounded and the sickness rate was kept low, numbers being held and treated at 2 CCS at the advanced base on Guadalcanal. Towards the end of October the first New Zealand battle casualties from 14 Brigade's operations on Vella Lavella were admitted. They had been evacuated by sea and air transport through the CCS to Nouméa harbour or Tontouta airfield, whence they were brought to the hospital by 4 NZ MAC. In November Colonel Sayers succeeded Colonel Tennent as commanding officer. By January 1944 nine of the ten wards had been completed and the detachment from Boguen, along with 1 Army Optician Unit, rejoined its parent unit. In April many medical boards were held and X-ray examinations carried out prior to the troops returning to New Zealand. During May the hospital had the highest number of patients since its inception – 465. This was largely due to the admission of ankylostomiasis cases from the Division. Two buildings and their contents were extensively damaged by fire in June and July. In July, as the force was being withdrawn to New Zealand, the hospital prepared to close, and by the end of August all the patients and most of the staff had left New Caledonia.

2 NZ Convalescent Depot and Kalavere Hospital

The Convalescent Depot was established on the former 109 US Station Hospital site at Kalavere in September 1943. It was at this time that it was decided to move 4 General Hospital from the nearby Boguen valley, 30 miles away, to Dumbéa valley, and it was arranged that a 150-bed hospital wing be attached to the depot in order to service the surrounding base camps. In the meantime 4 General Hospital maintained a 200-bed hospital at Boguen valley. Provision was made for the addition of 22 NZANS and 39 NZWAACs, as well as 49 orderlies, to the convalescent depot staff. Tents with concrete floors were used as wards but were later replaced by prefabricated huts. Lieutenant-Colonel Wood [1] was a very active CO until his sudden death on 13 January 1944,

when Lieutenant-Colonel Bennett [2] was appointed to command. The number of patients in the depot varied between 100 and 200. It was not until 9 March that the Boguen detachment was closed and Kalavere hospital, which had just been completed on the Convalescent Depot site, then provided the hospital facilities for the base area. At Dumbéa valley 4 General Hospital catered for the casualties from 3 Division in the Solomon Islands, although cases demanding specialist surgical or medical treatment were transferred there from Kalavere. The buildings and facilities at Kalavere were still being extended when arrangements were made from April onwards for the return of part of the Pacific force to New Zealand for employment in essential industry. However, the unit's work did not diminish suddenly as a local outbreak of dengue fever, and ankylostomiasis and other cases transferred from the Solomons, taxed the bed space in June and early July. The unit was closed on 6 August.

Work of 2 Convalescent Depot

On admission to the Convalescent Depot patients were placed in one of four categories for remedial training. This physical training

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[1] Lt-Col J. H. H. Wood; born NZ 21 Dec 1898; medical practitioner; CO 2 Conv Depo Jun 1943-Jan 1944; died 13 Jan 1944.

[2] Lt-Col F. O. Bennett, OBE; Christchurch; born Christchurch, 19 Feb 1899; physician-private, NZMC, 1918–19; 2 i/c 22 Fd Amb (Pacific) Aug 1943-Jan 1944; CO 2 Conv Depot Jan-Jul 1944; SMO Papakura Camp Sep-Dec 1944; OC Tps HS *Maunganui* Dec 1944-Nov 1945.

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was controlled by two non-medical officers and a staff of seven sergeant instructors, all of whom had had experience of similar work in New Zealand. Those in each category were divided into squads according to the type of disability. There were squads for upper limb and plaster

cases, for lower limb and foot corrective exercises, for post-operational and abdominal cases, and for general physical training. Prior to discharge patients had rigorous training in unarmed combat, hill climbing, route marching and advanced gymnastics. Organised games had a valuable place in the training syllabus – swimming, baseball, basketball, cricket, softball, medicine ball and archery – while cycling was also popular. The depot had an excellent swimming pool and reasonably large recreation areas.

By the beginning of December 1943 occupational therapy was well developed, there being a metal workshop, an arts and crafts hut, and a carpenter's workshop. There was also a gardening class. In charge of the occupational therapy was the AEWS officer, who also instituted educational classes.

The medical officers reclassified the patients each week and spent as much time as possible with the convalescents during training hours, making corrections in treatment as required. When the unit was required to run a 150-bed hospital, 22 sisters and 39 WAACs were added to the staff.

Dental Services

The dental services were under the control of the ADDS, NZEF (IP), Lieutenant-Colonel Rout, [1] and comprised a camp dental hospital, a dental store, a mobile dental unit and several self-contained dental sections, including two maxillo-facial injury sections. The last two sections were attached to 4 General Hospital and 2 CCS respectively. One dentist was available for every 1500 men in the force. The mobile dental unit of 8 dental officers and 40 other ranks (including 14 ASC drivers) had its own transport, camp equipment and cook, and established permanent camps successively at Moindah and Bouloupari in New Caledonia and at Point Cruz on Guadalcanal. For each officer there was a complete outfit of field dental equipment, so that as many sub-sections as necessary could be detached for service with individual formations in the field. There were one or more on each of the three

islands of the Solomons occupied by our troops. The camp dental hospital was established at Base Reception Depot, Tene valley, five miles from Bourail. At first accommodation was in large tents, but later prefabricated tropical huts were made available.

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[1] **Lt-Col O. E. L. Rout; Dunedin; born NZ 15 Jan 1904; dental surgeon.**

On Guadalcanal a building with a wooden floor was constructed to replace as surgeries the tents with coral-sand floors, but the latter form of accommodation was used on Vella Lavella, Treasury and Nissan.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

II: GUADALCANAL

II: Guadalcanal

Towards the end of July 1943 the ADMS 3 Division, Colonel Speight, accompanied the GOC's reconnaissance party to Guadalcanal, where an examination of the staging area allotted to 3 Division was carried out. The sites of the brigades were decided upon and satisfactory positions for medical units were selected. Generally speaking the areas were in good order, were clean, and had not been occupied for some weeks. Drainage was good and few mosquitoes were seen. All drinking and washing water had to be carted to the camp sites, but this state of affairs was alleviated somewhat by the fact that nowhere was any camp likely to be farther than two miles from the beach and one brigade would actually be camped beside the beach.

Early in August 3 Division was engaged in preparations for its move to the Solomon Islands. The move itself was carried out in three flights, 14 Brigade Group embarking on 15 August, Divisional Headquarters Group embarking on 22 August, and lastly, 8 Brigade Group embarking on 2 September. For the purpose of the move and until further notice, 2 CCS (Lieutenant-Colonel Wilson [1]) and 1 Malaria Control Unit (Major Jack [2]) were placed under command of ADMS 3 Division.

The groups exercised en route in amphibious operations at Efate in the New Hebrides and then concentrated in Guadalcanal.

Active Operations in the Solomon Islands

When the units of the Division landed on Guadalcanal in three successive flights on 27 August, 3 September and 14 September 1943, that island was the principal forward base for actions in progress 200 miles away to the north-west in the New Georgia Group of the Solomon Islands. New Caledonia was 1000 miles away to the south and New

Zealand a further 1000 miles farther back.

By the time the Division arrived to play its part in the Solomons campaign the strategy of bypassing enemy-occupied islands was in operation. In order to achieve success this strategy required the use of large numbers of aircraft to provide air cover, patrols and to pulverise enemy bases and aerodromes; motor torpedo-boats to work at night attacking enemy barges transporting personnel and supplies to their various island garrisons; landing craft of all sizes to ferry our own troops and equipment for each engagement, and naval vessels to protect convoys of smaller craft and, if necessary, to bombard enemy positions at the point of attack. These were all available for Admiral W. F. Halsey's forces, of which 3 Division was a valuable striking unit.

Briefly, the strategy of bypassing was to get behind the enemy, isolate his bases, and force him to evacuate or surrender by cutting his supply lines and smashing his airfields and defences. This was achieved by capturing some island ahead of an enemy base and establishing there with the greatest possible speed airfields, naval bases and supply dumps. Thus established, air power from the new base supported the next move forward and enabled a continuous assault to be maintained on the enemy.

The capture of Vella Lavella was a typical example of this bypassing strategy. It forced the Japanese to evacuate Kolombangara and several smaller islands north of New Georgia and paved the way for the next forward thrusts to the Treasuries, Empress Augusta Bay, and ultimately to the Green Islands.

After the arrival of 3 Division on Guadalcanal action was not long delayed, but the Division seemed fated to be dispersed. Never once during the Solomons campaign did the two brigades work together in one concerted action. By the time 8 Brigade was disembarking on Guadalcanal 14 Brigade was embarking for its move forward. From then on the two brigades fought on separate islands, one a long hop ahead of the other, so that their only direct links were by wireless and aircraft.

There can be no connected story of their activities, for the brigades did not join up again until they returned to New Caledonia in 1944.

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[1] **Lt-Col S. L. Wilson, DSO; Dunedin; born Dannevirke, 17 Apr 1905; surgeon; surgeon 2 Gen Hosp Aug 1940–Jun 1941; Mob Surgical Unit Jun 1941–Feb 1942; 1 Mob CCS Feb 1942–Mar 1943; CO 2 CCS (Pacific) Aug 1943–Jan 1944.**

[2] **Maj D. McK. Jack; Auckland; born Whangarei, 8 Mar 1914; house surgeon; medical officer 4 Fd Amb 1940; RMO Pet Coy May-Sep 1940; 4 Fd Amb Sep 1940–Sep 1942; 7 Fd Amb (Pacific) Dec 1942–Aug 1943; OC Malaria Control Unit Aug–Dec 1943.**

III: LANDING ON VELLA LAVELLA

III: Landing on Vella Lavella

The Division's first task, that of clearing Vella Lavella, fell to 14 Brigade. When the units disembarked on Guadalcanal two American divisions were engaged in eradicating the last of the Japanese from Arundel Island and the north coast of New Georgia. Munda airfield was operating and fighter planes based there supplemented those from Guadalcanal which daily pounded the enemy strongholds in the north. Units from one of the American divisions based on New Georgia had been in action on Vella Lavella for some time and had succeeded in driving the Japanese garrison into the north of the island, where they were holding an area in Paraso Bay on the north-east coast, and at Mundi Mundi on the west coast.

Approximately 3700 troops of 14 Brigade made the landing on Vella Lavella on 18 September 1943. They travelled the 220 miles from Guadalcanal in two days in a convoy consisting of six Landing Ships, Tank (LSTs), six Assault Personnel, Destroyers (APDs) and six Landing Craft, Infantry (LCIs), escorted by five destroyers, and carrying with them large supplies of ammunition, petrol, equipment, stores and transport.

VELLA LAVELLA
22 Field Ambulance and 1 FSU were established at Gill's Plantation

VELLA LAVELLA

22 Field Ambulance and 1 FSU were established at Gill's Plantation

At dawn on 18 September, under an umbrella of fighter aircraft, many of them flown by New Zealand airmen, men and supplies poured from the landing craft on to beaches in the south-east of the island at Barakoma, the enemy having been pushed back by the Americans to the opposite side of the island. A Japanese air attack came shortly after midday, but by that time disembarkation had been completed.

General Barrowclough [1] took over command of the island and its defences on 18 September, the Division being under command of 14 US Corps on New Georgia. The headquarters of 14 Brigade were established in Gill's Plantation behind Joroveto, midway up the east coast and within easy reach of Joroveto River, which was the principal water supply.

Action in Vella Lavella

Between 500 and 700 Japanese were cornered by American troops, supported by Fijian scouts, along the northern area of the island where the coast was deeply indented and mangrove swamps added to transport and communication difficulties. The task of 14 Brigade was to relieve the Americans and clear the island as quickly as possible. Vella Lavella was clothed in dense jungle from the water's edge to the mountain crests of the interior. In this jungle the enemy had to be found and attacked.

The plan of operation entailed the use of 35 Battalion and 37 Battalion as combat teams, with 30 Battalion in reserve. Each combat team had its engineers from 20 Field Company, medical sections from 22 Field Ambulance, and supply personnel from 16 MT Company, with artillery working in support. The method of attack was to make a pincer movement, bringing each battalion in from a flank and ultimately trapping the Japanese garrison when the two battalions affected a meeting.

By 21 September beach-heads had been established by 37 Battalion at Paraso Bay on the north coast and by 35 Battalion at Mundi Mundi River on the north-west coast. American units withdrew as the New Zealanders took over, and with them went the Fijian scouts. Then from the beach-heads units moved in bounds round the coast in small landing craft. Patrols crept through the jungle and swamps along the coast, paving the way for the advance of each battalion as the enemy was driven back on his main base at Timbala Bay.

Conditions were harsh and difficult. Rain fell, drenching the men and soaking their equipment and stores and turning the jungle into a bog. Progress was slow, amounting to only 300 to 600 yards a day during contact with the enemy, and a company front was rarely

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[1] **Maj–Gen Rt. Hon. Sir Harold Barrowclough, KCMG, CB, DSO and bar, MC, ED, m.i.d., MC (Gk), Legion of Merit (US), Croix de Guerre (Fr); Wellington; born Masterton, 23 Jun 1894; barrister and solicitor; NZ Rifle Bde 1915–19 (CO 4 Bn); comd 7 NZ Inf Bde in UK, 1940; 6 Bde May 1940–Feb 1942; GOC 2 NZEF in Pacific and 3 NZ Div Aug 1942–Oct 1944; Chief Justice of New Zealand.**

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more than 100 yards wide. The men moved along narrow tracks in single file, hindered by tree roots and clutching vines and always on the alert against ambush or enemy traps. Every noise was suspect for the Japanese soldier, hidden among the roots of trees or up the trees

themselves, held his fire until patrols came within five or ten yards. At night perimeters were formed and not a man moved beyond the spot where he lay and secured himself as darkness fell. Every yard of ground had to be searched thoroughly, and when it was declared clear by the patrols, other troops followed round the coast in landing craft, establishing bases at sites dictated by openings in the reef for the next probe forward.

By 5 October the enemy garrison had been forced back into an area between Warambari and Marquana Bays. The following night, while the two battalions were preparing for a final assault, the encircled Japanese, numbering about 400–500, were evacuated by barge to destroyers which were waiting off the north end of the island. But the enemy did not escape unscathed. Three American destroyers attacked the Japanese convoy and sank many of the barges which were evacuating their men from Vella Lavella. By 9 October, when patrols from the two battalions met, all Japanese resistance was considered at an end.

Enemy casualties were estimated at 200–300 killed and wounded.

Fourteenth Brigade Group casualties were 3 officers and 28 other ranks killed, 1 officer died of wounds, and 1 officer and 31 other ranks wounded.

The task had taken nineteen days and on its completion 14 Brigade Group was made responsible for the prevention of Japanese re-entry into the island, and also for the prevention of any isolated Japanese escaping from the island.

Medical Operations

Attending the sick and wounded in the jungle was full of difficulties and threw considerable strain on unit medical officers. With each of the two combat teams there was an advanced dressing station of 22 Field Ambulance. Sick and wounded were evacuated by barge to a main dressing station established by 22 Field Ambulance under Lieutenant-

Colonel Shirer [1] among the palms of Gill's Plantation. Attached to the MDS was 1 Field Surgical Unit. From the MDS, which also admitted American bomb casualties, sick and wounded were returned to the Casualty Clearing Station on Guadalcanal, 220 miles away, cases usually making the journey by plane.

The average time of evacuation from front line to RAP varied from two to six hours, being prolonged at times by infantry losing

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[1] Lt-Col W. F. Shirer, ED, m.i.d.; Wellington; born Wellington, 16 May 1898; medical practitioner; CO 22 Fd Amb Aug 1942–Nov 1943.

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their direction. Two cases lay where they fell for two hours before they were removed by an officer under machine-gun fire in a Japanese fire lane. The troops had no blankets and stretchers were improvised from jungle coats; the wounded were carried along a bewildering maze of tracks, no compasses being available.

When battalion headquarters moved forward the RAP staff packed its equipment into haversacks and moved forward too. At the new site a tarpaulin was erected for protection against torrential rains, and under it medical equipment such as splints, dressings, instruments, drugs and blood plasma was set out in preparation for casualties. When a man was wounded, first aid was given on the spot by the company medical orderlies, and the man was taken to the aid post as quickly as possible. It usually took eight men to get one stretcher case back to the RAP, and the stretcher-bearers found their work difficult in the extreme. At the RAP additional treatment was given and the casualty sent on to the ADS.

The ADS was one mile behind the RAP, along a mud track. Evacuation took from one to two hours according to the condition of the patient. At the ADS wounds were dressed with sulphonila-mide powder, haemorrhage arrested, fractures splinted and morphia and ATS

administered. There was a hold-up in evacuation between the ADSs and MDS. Both ADSs were five to six hours away by Higgins boat, and evacuation depended entirely on when these boats were available. In most cases this meant an all-night wait at the ADS for the patients, who left on barges in the morning after twelve to fourteen hours' delay. After a six-hour journey the barges landed patients at the MDS landing at Gill's Plantation, Joroveto. Thus patients did not reach the MDS until up to twenty-eight hours after wounding. Requests were made for casualties to be evacuated by boat at night to reduce the evacuation time by about half. Boats, however, were in short supply and this constituted a bottleneck for military movement, the forwarding of supplies and the evacuation of casualties. This also limited the number of medical personnel who could be sent to the forward area.

The first group of battle casualties to arrive at 2 CCS on Guadalcanal were five men from 35 Battalion, who reached the CCS on 1 October. Battle casualties continued to arrive until 15 October.

Surgery

Most of the surgery was performed by 1 Field Surgical Unit. This unit, besides operating on New Zealand wounded from the forward areas, attended to numerous bomb casualties from the enemy strafing of American troops and barges on nearby beaches. A well-equipped resuscitation ward proved invaluable. Between 25 September and 10 October seventy operations were performed under general anaesthesia in the theatre. Many blood transfusions were given, and about 150 infusions of plasma and many infusions of glucose and saline. Abbott's apparatus was used and proved very satisfactory.

The set-up of the surgical unit at this stage consisted of one IPP tent for the theatre, one IP 180 lb. tent at the rear end for stores, and another IP 180 lb. tent leading off from the side which provided space for scrubbing, sterilisation, linen and other supplies.

The operating theatre was an IPP tent with a coral floor and with

sides attached so that it could be blacked out during a bombing raid. An operating table fitted between the tent poles, and round the sides were various shelves made of rustic saplings or undressed timber. Batteries in a corner provided the lights which were suspended over the table. Dressings and guards were sterilised in two small autoclaves which were heated over primus burners. Slightly forward of the theatre tent another IPP tent was erected for resuscitation and connected with the sterilisation tent. All tent floors were covered with white coral sand and well drained. There were some splinter-proof wards sunk to a depth of three feet in the coral. The tents were camouflaged and blacked out. This set-up proved eminently satisfactory.

One difficulty was sweating. Sweat literally poured from all the occupants of the theatre and it was difficult for a surgeon to bend over a wound without contaminating it.

The anaesthetic was usually ether (Squibb's) following an induction by either ethyl chloride or a mixture. The difficulty in hot climates of preventing the too rapid evaporation of ether did not prevail here on account of the excessive humidity. Very frequently pentothal sodium was given, up to 40 cc., and was invariably satisfactory.

Surgical treatment again was as simple as the nature of the case would allow. *Débridement* and sulphanilamide powder were the essentials. Wounds were not closed. Foreign bodies were removed only if easily accessible. Fractures were usually put up in plaster or Kramer wire. There was of course no X-ray.

Of the battle casualties that arrived at the MDS (where the field hospital was situated) only one New Zealander died. No case of tetanus was seen. Anti-tetanic serum was in very short supply and when not available tetanus toxoid (1 cc.) was given instead. Gas gangrene occurred in some neglected wounds and was treated by wide excision and heavy doses of sulphadiazine. One man died with gas gangrene, and in this instance the infection was secondary to multiple wounds from bomb splinters.

The vigour of the wounded as they arrived was always a matter of surprise. They were filthy, unshaven, possibly starved and with flies crawling over their bloodstained dressings. Despite this they frequently walked or hopped to the ward, stood any amount of handling, took an active share in looking after themselves, rarely complained of pain and made a rapid recovery.

One of the major difficulties was post-operative treatment. Most of this was done by trained orderlies, who were competent in most nursing techniques and were able to give injections and in some cases plasma and blood transfusions. No nursing sisters were available in the forward areas and orderlies were undergoing their first experience in nursing seriously wounded men.

Cots, mattresses and linen were available at the MDS, but it was found impossible to continue using sheets owing to the difficulty of washing and drying them.

The correct time for evacuation provided a nice problem in surgical judgment. Serious cases required very gentle handling and it might be dangerous to transfer them too soon, especially as the journey to the airfield was a long one over a track axle deep in mud and studded with large lumps of coral. Despite this, early evacuation was preferred. The main reason was that the conditions were entirely unsuitable for a smooth convalescence. Rain, often torrential, fell daily and no blankets or clothing could dry properly. The area was infested with ants, flies, crabs and rodents. During the time these casualties were being accommodated bombing raids occurred every night. To lower all these casualties into foxholes was not practicable, nor was the field ambulance, despite all its efforts, able to supply at the time enough foxholes for all the patients. Later, surgical wards were constructed below ground level. This gave fair protection except against a direct hit or falling shrapnel.

Another problem was diet. All food was tinned and was devised more for front-line troops than for invalids. Another factor that helped to

determine evacuation was the limit of accommodation. It was necessary at all times to reserve a large amount of space for a sudden emergency. As a result of all this any man whose incapacity was liable to be at all prolonged was evacuated at the earliest moment that was consistent with safety. One such case, an abdominal injury, died though it was doubtful if his evacuation was a contributing factor. The condition of a few others deteriorated on the way though all subsequently recovered.

Bomb Casualties

At Vella Lavella 22 Field Ambulance actually received more casualties from air attack than from ground fighting, but these casualties were mainly Americans. On 25 September enemy aircraft bombed an LST that was unloading and wounded some troops, and a week later inflicted more serious casualties among a small concentration of troops on a supply ship. Fifty-five cases were admitted on the second occasion, most of the wounded being gravely injured — buttocks blown away, traumatic amputations of arm or leg, pneumo-thorax, perforation of abdomen and diaphragm, fracture dislocation of spine, etc. Most had some form of compound fracture and all had ugly flesh wounds, often multiple, yet forty-eight cases survived and were later evacuated by air, nearly all within a week. Some had to be evacuated prematurely so as to obtain special nursing attention. Treatment of the New Zealand battle casualties was a welcome contrast – their wounds were mainly from bullets, and only those who survived surgical shock during evacuation from the jungle were received at the MDS. The bomb casualties were brought in promptly over a short distance by truck, ambulance car and jeep. The mounting superiority of the Allied air force soon minimised bombing dangers and only an occasional bomb casualty was received later.

Use of Red Cross

In regard to the Japanese attitude to the Geneva Convention, the ADMS 3 Division made exhaustive inquiries from American officers and

officers of the South Pacific Scouts who had had extensive experience of jungle fighting. It was found that the treatment accorded to the Allies in Japanese hands depended largely on the attitude of the particular Japanese commander in the area concerned. At the same time it was known that Japanese troops in the Solomons area included large numbers of fanatics whose one aim was to kill as many men as possible, wounded or otherwise, before they themselves were killed.

The field of vision in jungle fighting was so extremely limited, and parties of both sides came upon each other so suddenly, that shooting commenced before any question of the recognition of medical units arose.

The policy laid down by the ADMS in forward areas was that the Red Cross emblem was not to be shown and red crosses on ambulances were to be painted over. Stretcher parties going into the jungle were convoyed by ASC personnel attached to field ambulances, armed with tommy guns. These precautions had been found necessary by American medical units.

(*Note:* Experiences during the Treasury Islands operations, when Japanese on patrol were found infiltrating into the lines of medical units, and publications indicating the active hostility of Japanese medical personnel and the general attitude of the Japanese to this subject, led to authority being granted for the issue of suitable arms to members of the New Zealand Medical Corps, if they so desired, for the protection of their patients and of themselves. All NZMC personnel, whether in base or forward areas, were early in 1944 given instruction and practice on a voluntary basis in the use of pistol, rifle, bayonet, hand grenade and Thompson sub-machine gun.

Stretcher-bearers effecting long carries in the jungle would have been considerably hampered by having to carry arms, and to obviate this the practice was often followed of sending an armed escort with stretcher-bearer parties in the jungle.)

Hygiene and Sanitation on Vella Lavella

Active operations of 14 Brigade Group on Vella Lavella showed a remarkable lack of appreciation by the individual soldier, in spite of training, of matters of field hygiene, and in particular the disposal of faeces and the treatment of water for drinking. This resulted in many cases of dysentery during the operations. Sanitary policing of any newly occupied areas or beach-heads came to be regarded as of the utmost importance as gross fouling could occur in the first hour, and the resultant damage to health could be out of all proportion to the short time of occupation. Where possible the Field Hygiene Section endeavoured to include some sanitary personnel from the unit with the initial body of troops making a fresh beach landing or moving a camp site. The primary object of these men was to establish latrines on the beach-heads for immediate use and to arrange a rubbish dumping area. Two types of field latrines were advocated – either a simple hole to be filled in after use, or a hole with a covering of a simple hinged lid over a foot-square piece of board with a latrine hole in the centre. Units, especially combat units, required individual chlorination tablets and platoon water filters of German or Italian pattern.

Supervised rubbish dumps on the Bradford tip system were liberally provided by 6 Field Hygiene Section on Vella Lavella. With a bulldozer a hole was cut out of the coral, 50 yards long and 10–12 feet deep. Trucks could be run into it and the rubbish placed at one end. The rubbish was burned and later covered with coral by the bulldozer. Owing to difficulty in keeping this constantly covered, it was necessary to insist on all tins being crushed to prevent insect breeding in retained water. As the troops were on American rations there were large numbers of tins to be disposed of, and they were potential fly and mosquito breeding places. At first on Vella Lavella flies were troublesome, but the problem was gradually controlled. Breeding occurred in decaying coconuts and other vegetable matter, and partly in unsatisfactory food dumps and latrines. Fly traps and safes at first were too few in number, but units remedied this as supplies of material came to hand. Unfortunately most of this type of

equipment was left behind by units as 'unessential' for the forward move.

Health of Troops

In the first month on Vella Lavella skin diseases were very prominent, and in some units 40–50 per cent of the troops were on sick parade daily with these complaints. It was impossible to state the aetiology, but it was thought that all the following factors were involved: poor conditions of living during combat, combined with lowered resistance from exhaustion and exposure and poor food during this period; insufficient personal cleanliness, including washing of clothes; rapidity-of bacterial growth in the tropics. The climate was hot and humid but not unbearable.

A large number of cases of dysentery occurred in the early stages of the fighting but later only sporadic cases were seen. The dysentery was of a mild bacillary type and the epidemic affected 37 Battalion while in combat. It was controlled by the use of sulpha-guanidine. In such circumstances Lieutenant-Colonel Sayers, the Consultant Physician, thought it would be well worth while giving sulphaguanidine or sulphathiazole prophylactically.

There were twenty-eight new cases of malaria in the Division in October, a number occurring in 35 Battalion which was in combat on Vella Lavella. This to some extent was inevitable as it was impossible to carry or use nets during actual operations. October was stated by Colonel Sayers to be always a good month as regards malaria. There were few anopheline mosquitoes although a certain amount of larval breeding was going on, mainly in streams. Excellent work was done by 1 NZ Malaria Control Unit. Very soon after arrival the unit had roughly surveyed the whole area, marked the breeding places, and started oiling and other control measures. It contacted the American control unit and divided up the territory to be covered by each organisation. Blood films of samples of troops were taken to estimate the true malaria rate. Malaria discipline at first was deficient. Atebrin was taken regularly

under supervision, but there was some laxity in enforcing dress regulations. Officers did not set a good example to their men and punishment was not inflicted on offenders. Repellent was not used and washing and bathing after 5.30 p.m. was widespread. Discipline, however, was tightened up and malaria was not a real problem, even with the advent of the wet season later.

The general health of the troops, however, deteriorated and they became listless due to the climatic conditions and unsatisfactory food. There seems little doubt that insufficient attention was paid to hygiene by combatant officers.

Japanese Medicines and Foods

On Vella Lavella Lieutenant-Colonel Sayers was able to examine captured medicines and foods. Quinine hydrochloride in tablets of 1½ grains was supplied in large quantities, but the reason for the small dosage could not be ascertained. Ampoules of intravenous quinine and atebrin were also found. Other drugs were stock lines such as were used in any RAP.

Japanese tinned foods were of good quality, especially the vegetables, and multi-vitamin pills and vitamin powders for adding to soup were found.

When Colonel Sayers talked with captured Japanese labourers he learned that they had no regular suppressive quinine or atebrin, were not issued with nets, and had only a very little repellent cream. Fighting troops were given some nets and officers had spray guns. They had seen no oiling of breeding places carried out.

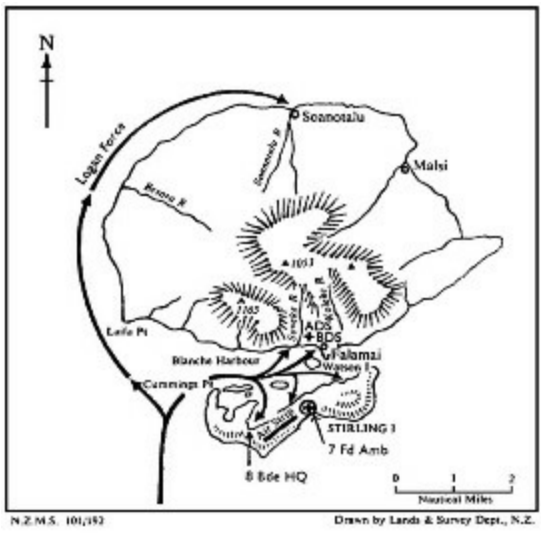
IV: TREASURY ISLANDS

IV: Treasury Islands

From the time of its arrival in Guadalcanal in mid-September 8 Brigade embarked on a series of battle exercises. On 16 October 1943 the Brigade Commander received orders from 1 US Marine Amphibious Corps to seize and hold the Treasury Islands, capture or destroy the enemy forces in the area, establish a long-range radar station in the north of Mono Island, and establish an advanced naval base with facilities for motor torpedo-boats and a staging refuge for landing craft. The first flight of the brigade was to land in the Treasury Group on 27 October.

At this time the brigade was camped on the north coast of Guadalcanal, 350 miles from the prospective scene of operations. Approximately 2000 American troops, who were to come under the command of 8 Brigade Group for the operation, were also assembled at Guadalcanal. A total force of 6574 was prepared for embarkation in five flights at five-day intervals. The medical units included were 7 Field Ambulance (244) and 2 Field Surgical Unit (11). Of the above force 3700 were to sail with the first flight.

This flight arrived at Blanche harbour, Mono Island, in the early hours of 27 October. The destroyers *Pringle* and *Philip* opened fire on the Falamai area at 5.45 a.m. and the first wave of infantry landed on the beach between the Saveke River and Falamai at 6.26 a.m. The landing craft came under enemy machine-gun fire from Mono Island and also from Cummings Point on Stirling Island. Eight men were wounded at this stage. A beach-head was quickly established by 29 and 36 Battalions, though it was not secure until later in the day.



8 BRIGADE LANDINGS ON MONO AND STIRLING ISLANDS

8 BRIGADE LANDINGS ON MONO AND STIRLING ISLANDS

Meanwhile 34 Battalion, artillery units and Brigade Headquarters were established on Mono Island without opposition. Throughout the first day of the operation the brigade had excellent naval and air support.

At the end of the day's operations the brigade could not estimate the total casualties inflicted on the enemy, but 21 New Zealanders had been killed and 70 wounded, while the United States units under the brigade's command suffered 9 killed and 15 wounded.

By 31 October units had consolidated and patrols began to sweep Mono Island, routing out nests of Japanese who had taken refuge in the interior. Mono Island rises abruptly from the sea to a cone over 1000 feet high, with rivers cutting through it, and in the dense jungle are many caves and creeper-covered cliffs. Here the enemy hid until he was probed out, a slow and trying task which took days to accomplish. Enemy remnants were still being mopped up at the end of November and some Japanese eluded capture for months.

The seizure of the Treasury Group went according to plan and on 1 November, when the American Marines landed at Empress Augusta Bay, Bougainville, the Treasury Islands were ready to 'provide protection for future convoys' to that area. This latter Allied move bypassed over 24,000 enemy troops stationed in south Bougainville and the adjacent

islands of Shortland and Ballale. The enemy possessed in the area enough barges to transport 3000 men from Shortland to Mono (18 miles) in a night. However, the enemy reaction to the Treasury landing was 'surprisingly supine' and he made no attempt to reinforce or evacuate his garrison.

By 12 November 8 Brigade Group had accounted for 205 Japanese killed and had taken eight prisoners – the latter were either badly wounded or were captured by native scouts. The New Zealand casualties were 40 killed and 145 wounded and the American casualties 12 killed and 29 wounded.

Medical Plan

The medical plan was limited by several factors. First, there was restricted accommodation for personnel – 128 for 7 Field Ambulance and 10 for 2 Field Surgical Unit was the allocation in the first echelon. This allowed for little more than half the personnel to be taken forward in the first lift. Second, there was a limitation on the tonnage of equipment which could be carried on the LCTs and also on the number of vehicles.

Briefly, the medical plan called for the establishment of an MDS or (more properly) a field hospital on Stirling Island at a spot in reasonable proximity to the landing beach, a bearer company to establish an ADS and beach evacuation station on Mono Island within the two-battalion perimeter, and a small detachment of one medical officer and four other ranks to accompany the Soanotalu force, where little opposition was expected. It was visualised that all casualties would be held until the LSTs of later echelons could evacuate them to Vella Lavella, where there would be an American hospital. Evacuation from the Beach Dressing Station to the MDS was to be by small surface craft across Blanche harbour.

Medical Operations

It was mutually arranged by CO 7 Field Ambulance, Lieutenant-

Colonel Hunter, [1] and the American medical officers of the LST flotilla that in the initial stages, during the time the LSTs were unloading at Mono Island, they would take and surgically treat all casualties. One of the LSTs had a good improvised operating theatre in its sick bay and both medical officers on board were experienced surgeons. This plan worked excellently, greatly

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[1] Lt-Col S. Hunter, OBE; Christchurch; born Ashburton, 10 Dec 1902; medical practitioner; CO 7 Fd Amb Jun 1942–Dec 1944.

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the work of the MDS. The Americans took back forty-seven casualties, providing surgical treatment and care for them en route to Guadalcanal (to which the LSTs returned direct without calling at Vella Lavella). They were admitted to 2 NZ CCS.

A Company Movements

It was envisaged that after the initial unloading of the LCIs a Beach Dressing Station would be set up at the centre of the perimeter in close proximity to the beach. This was to be run by one medical officer and approximately eight other ranks, with a minimum of first-aid and ordnance equipment. The remainder of the company were to establish a more elaborate dressing station about 150 yards from the beach towards the left flank. The beach station was formed in a small creek bed, much as planned. Owing to the fact that the majority of casualties were occurring on the beach among ship-unloading parties and that the area chosen for the ADS was still under heavy fire, no endeavour was made to establish a fully functioning ADS before late afternoon. Runners readily made contact with the adjacent RMOs, but stretcher parties were not sent out until called for because they were needed more on the beach itself. At this stage there were no trucks and all carriage of wounded was

by hand. Distances were short and four-men stretcher parties were sufficient. During the day only RAP treatment, including plasma, could be given on account of the exposed position of the Beach Dressing Station. Most casualties were evacuated direct to the LSTs until 4 p.m., but some casualties from early afternoon onwards were diverted to the MDS, largely to avoid over-burdening the LST. The number of men available (46) was only just sufficient to do the requisite stretcher-carrying from RAPs and on to the LSTs. By 4.30 p.m. all casualties had been evacuated and the beach station was moved to the site originally chosen for a dressing station. Foxhole digging for personnel had priority and was all that could be accomplished before dark. Heavy mortar and bombing attacks were experienced during the night. At daybreak an attempt was immediately made to set up a proper ADS consisting of tarpaulins and tents, one tent being dug three feet under the ground with a coconut log pallisade. Casualties that had occurred during the night commenced to come in about 8 a.m. and filtered through all day. All movement of casualties from forward positions ceased at dusk. During the night of 28–29 October extensive infiltration of Japanese took place into the ADS lines and there was a lot of desultory firing and grenade throwing throughout the night. Fortunately there were no casualties among the personnel, most of whom were armed. As a result of consultation with the Brigade Commander, the ADS personnel were withdrawn to the MDS site at dusk on the second night and a small Beach Dressing Station was set up on Mono at an early hour the following morning, the personnel returning thereafter to the MDS every night. This worked efficiently.

Headquarters Company Movements

Along with the Field Surgical Unit, Headquarters Company personnel and equipment belonging to each unit were disembarked on Stirling Island about thirty minutes after the first assault wave of troops had landed (approximately 6.45 a.m.). No opposition had been encountered there, which was fortunate as the infantry had not landed in the same place and no perimeter had been established. A track was hacked

through some 150 yards of heavy jungle and equipment carried up from the beaching area. All the area had to be cleared by our own working parties, but by midday a skeleton dressing station was working and ready to receive the first casualties, which arrived about 1 p.m. Both Field Ambulance and Field Surgical operating theatres were in commission and were fully occupied until 10 p.m. or later. During the late afternoon further tentage was erected. On the following days a steady stream of casualties and sick came in for treatment. Five days after the initial landing when the second echelon arrived, fifty-one patients were evacuated with the outgoing LSTs. A new site had been selected for a hospital area and partially cleared, and with the evacuation of another thirty-seven patients on the third echelon LSTs a move was made with the remaining patients and all tentage and equipment were taken to the new area. This area was much more suitable, clearer, better drained and not encroached upon to the same extent by numerous other camps. In the initial stages tentage was in short supply. Owing to weight difficulties only a minimum was brought on LCIs in the expectation that within twenty-four to forty-eight hours the heavier tents and equipment would be transhipped across to Stirling Island. This movement did not occur and it was many days before all equipment was reassembled. Difficulties in unloading under fire were greater than was anticipated. There was marked confusion of unit equipment and some was destroyed by bombing and fire. When a fire broke out salvage parties pulled equipment to the outskirts and a great deal lay undiscovered in the surrounding bush for several days. By dint of a good deal of overcrowding all patients were under shelter, but one lesson learnt was that tentage accompanying personnel should not be reduced so much in future. One unfortunate result of overcrowding in the area was that sanitary arrangements temporarily broke down. Dysentery cases were admitted at an early stage from one of the units and unfortunately many of our nursing personnel contracted it, largely due to the general rush and proximity of the dysentery latrines to the general camp and cookhouse area.

Soanotalu Detachment

This landing in the north of Mono was unopposed. From the third night onwards determined attacks were made by the Japanese on the positions of this force. Casualties in our troops were light and evacuation by LCM to the MDS presented no difficulty.

RMOs

A large number of RMOs, both United States and New Zealand, were attached to the various units of the force. Liaison between these medical officers and the field ambulance was easy to maintain and supplies were kept moving forward without difficulty.

Battle Casualties

Battle casualties admitted to the MDS on successive days from 27 October to 1 November were 53, 19, 15, 9, 4 and 6, while there were nine cases of accidental injury and 62 admissions of sick for the same period. Up to 9 November there were 128 battle casualties (20 Americans) and 199 other admissions (including 22 Americans).

Evaluation

In general the medical plan worked out much as visualised. The handling of the first casualties by the American surgeons on LSTs allowed 7 Field Ambulance ample time to get the MDS adequately set up before having to cope with casualties. The construction of the MDS was no light work in heavy jungle with the minimum number of personnel, many of whom were temporarily lost to the unit in assisting with general unloading of cargoes. It was felt that the transhipping of wounded to the LSTs in no way prejudiced their chances, nor was it of any great moment that the journey was one of thirty hours back to Guadalcanal rather than six to nine hours to Vella Lavella.

One striking thing in jungle warfare was that no casualties arrived at an ADS or even an RAP after dark. The wounded man remained in his foxhole until dawn – a severe penalty on the casualty, but unavoidable

where instructions were explicit that anyone who moved after dark was an enemy, and was treated as such. All stretcher parties were accompanied by armed guards from unit personnel and were occasionally subjected to sniping, though no casualties resulted.

It was learnt that if a medical establishment was to be placed in a perimeter of defence, then it must be a perimeter in more than name only. On Mono Island the perimeter was evidently so extensive that large gaps were left through which the enemy could infiltrate with impunity. Where perimeters appeared difficult to establish and maintain, it was felt that all medical personnel should be armed if they wished and grenades appeared to be the most effective weapons. In any case, medical establishments at night in close proximity to defended areas served little useful purpose as casualties were never handled at night, except at their final destination, and with reasonable evacuation facilities an ADS would be cleared by nightfall and remain empty until morning.

Surgery

The vast majority of wounds were multiple – occurring from grenades, tommy guns or mortars. Second Field Surgical Unit attached to 7 Field Ambulance carried out the major surgery. The field ambulance operating theatre dealt with the less severe wounds and eased the strain on both personnel and equipment of the surgical unit. A resuscitation team had previously been organised, with a medical officer controlling this department and, in addition, determining the priority of cases for operation. Use was made of plasma and, when necessary, of blood transfusions.

The surgical unit, 2 FSU under Major Waterworth, [1] performed its first operation at 2 p.m. on the day of assault. The hospital was situated only a quarter of a mile across the water from the fighting zone and barges brought wounded from the ADS without great loss of time, so that the majority of operations were performed within twelve hours of a man being wounded. The Trueta technique of excision of wounds was used, frosting with sulphanilamide powder and leaving the wounds open and

packed lightly with vaseline gauze.

It was noted that there was a very low proportion of abdominal wounds compared with Middle East figures. In the short range of jungle fighting, often 25 yards or so, such wounds were generally fatal and accounted for many of those killed in action.

All New Zealand casualties passed through 2 CCS at Guadalcanal. After treatment only 61 per cent required to be evacuated to 4 General Hospital on New Caledonia for further treatment. The others were well enough to return to their units.

Blood Bank

Plasma was of great value for resuscitation but a need was felt for whole blood. In only two cases was whole blood given as it was considered unjustifiable to utilise donors under the prevailing conditions.

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[1] **Lt-Col G. E. Waterworth, m.i.d.; Napier; born Auckland, 23 Aug 1896; medical practitioner; OC 2 FSU Dec 1942–Jan 1944; i/c surgical division 4 Gen Hosp Jan-Sep 1944.**

Water

Water filters (Italian and German varieties) were received by 7 Field Ambulance just prior to departure from Guadalcanal and were of immense value. It was seventy-two hours at least before a water point was established on Stirling Island, as a road had to be driven two miles through to the lakes by a bulldozer. The unit dug a small hole ten yards from the edge of the sea and was able to pump water out with a German filter to meet its immediate needs. It was slightly brackish but otherwise quite suitable. Filters were likewise of great importance to the ADS company. It was felt that the number of filters on issue to the Division should be greatly increased, as water points would always be difficult to

establish in unroaded island country. Halazone and water sterilising tablets were available but they were not used, and it was felt that a number of the cases of dysentery could have been prevented as units drank untreated water from foul streams.

Equipment

The operation on the Treasury Islands provided most valuable information in regard to equipment. A jungle medical kit in a tin containing atebrin, iodine, sulphaguanidine, water sterilising tablets, morphia syrette, extra dressings and meta fuel was recommended for personnel in assault groups. It was found that the only equipment that the ADS, MDS and Surgical Unit could depend on getting for the first forty-eight to seventy-two hours was what the personnel could carry off an LCI. Heavy equipment packed on an LST might reach them quickly, but more often than not it would be three to four days before it was procurable, especially as unloading was going on under enemy fire. Moreover, LCI equipment should be literally 'hand carries', that is, stout boxes with rope handles, weighing not more than 120 pounds. Heavier packages were encumbrances and unduly slowed up unloading. They might have to be carried ashore through three to four feet of water. Seventh Field Ambulance had provided itself with over 100 well-made boxes, but even then a percentage of the equipment was carried in unsuitable crates.

It was noted that for the task allotted to it the bearer (ADS) company carried far too much equipment. All that was needed were stretchers, tarpaulins (four of 30 ft. by 18 ft., and possibly one tent), Thomas splints, two-gallon water containers, a hydra burner, medical comforts, morphia syrettes, phenobarbitone, plasma, elasto-plast in large quantities, a surgical haversack and spare field dressings. In regard to the first field dressings, there was a big call on these as in the Vella Lavella action. The explanation was that, with multiple wounds, the wounded man's own field dressing could not possibly cover all his wounds and his fellow soldiers had to supplement it with their own

supplies. The medical services had to carry extra field dressings in large quantities. The small tin United States field dressing appeared more suitable than the British pattern.

Field ambulance panniers had been revised in New Caledonia, but there were still a number of articles in them which appeared to be of little value in the early stages of the operation, and items more in demand could have been substituted. Medical supplies came forward without difficulty. Requests sent back on returning LSTs of one echelon were fulfilled on the echelon arriving ten days later. In addition, signals could be sent for urgent supplies.

Under brigade instructions the vehicles allowed on the first echelon were one 30–cwt truck and four jeeps. Prior to leaving New Caledonia 7 Field Ambulance had constructed a simple frame which could be attached to the jeeps to enable them to carry three stretchers. This adaptation was very useful and the jeeps were the only ambulance vehicles the unit had. The need for a closed ambulance was not felt in the prevailing conditions.

Attached as an appendix at the end of this chapter is a list of the equipment carried by 7 Field Ambulance and 2 Field Surgical Unit at the landing on the Treasury Islands, together with comments by the respective commanding officers.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

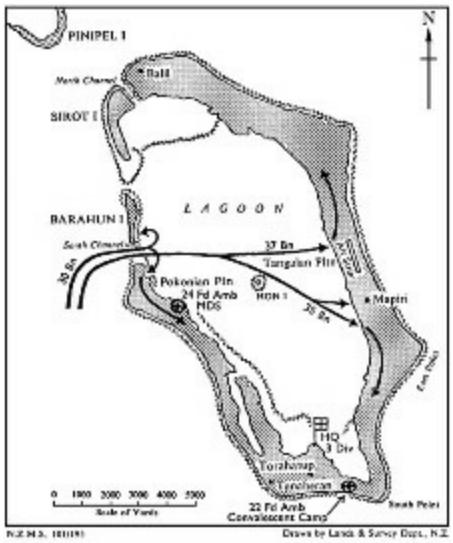
V: LANDING ON NISSAN ISLAND

V: Landing on Nissan Island

From November 1943 to February 1944 was a time of consolidation for 3 Division while the ground was prepared for another northward move. On the right flank of the central Pacific battlefield United States forces landed on Tarawa and other islands of the northern Gilberts in November, and a further thrust carried them to Kwajalein, in the Marshalls, and into the inner ring of the Japanese defences. On the left flank successful landings had continued along the northern coast of New Guinea and on New Britain in the plan to immobilise the big enemy bases of Rabaul and Kavieng. New Zealand troops were concerned with the central thrust up through the Solomons which was to end with the capture of the Green (Nissan) Islands.

These islands, only four degrees from the Equator, lie north-west of Bougainville and only 135 miles from Rabaul. Their capture was to assist in completing the Allied ring around New Britain and New Ireland and it disrupted all traffic between Rabaul and Kavieng and Bougainville and Buka. A vital reason for the seizure of the group was the need there for airfields from which pressure could be maintained on enemy bases.

The coral atoll called Green Islands is frequently referred to as Nissan because Nissan Island represents 90 per cent of the land area. Nissan is an elliptically shaped ribbon of land, less than a mile in width, surrounding a lagoon about eight miles long and three miles wide. The open sea enters the lagoon through three small gaps in the ellipse of land, thus making the two small islands of Sirot and Barahun at the north-west of Nissan. The main channel, which is between Nissan and Barahun, is only 15 feet deep, so that although the lagoon is deep, only shallow draft vessels may enter. There are no high hills and no watercourses on these islands, but the jungle is thick and substantial areas are covered by coconut plantations.



LANDING ON NISSAN ISLAND

LANDING ON NISSAN ISLAND

Aerial reconnaissance of the islands showed that the enemy was using them constantly as a barge staging base between Bougainville and Rabaul. The enemy did not appear to be maintaining large numbers of men permanently on the islands, and it was expected that the opposition 3 Division was likely to meet would fluctuate considerably with the visits of the enemy barges. A commando raid obtained an estimated figure of Japanese strength as about 100 men.

The date of the assault by 3 Division on the islands was fixed for 15 February 1944 and units of 14 Infantry Brigade Group and United States units on Vella Lavella and Guadalcanal prepared for the initial landing. The medical units involved were 24 Field Ambulance (Lieutenant-Colonel Fea [1]), 1 Field Surgical Unit (Major Brunette [2]), and parts of 6 Field Hygiene Section (Major Irwin [3]), and 1 Malaria Control Unit (Major Ferguson [4]). The total force was 5782, of whom 4218 were New Zealanders. They sailed for the Green Islands in thirty-four shallow-draft landing craft. The convoy was attacked several times by enemy planes during the approach to the islands.

At daylight on 15 February the landing began. Thirtieth Battalion landed on the lagoon side of Pokonian plantation and 35 and 37 Battalions landed on the lagoon side of Tangalan plantation, opposite

the channel. The enemy had not laid mines, nor had he ranged weapons on the entrance, and the landing was not opposed by ground forces. Allied fighter-bombers shot down six of fifteen enemy bombers which attempted to disrupt landing operations. A Company of 30 Battalion struck an enemy pocket of resistance on the north of Sirot Island on the third day and suffered five killed and three wounded in accounting for fifteen Japanese. On 20 February Japanese were attacked in entrenched positions at Tanaheran village in the south and 30 Battalion here accounted for sixty-two enemy dead, its own casualties being five killed and seven wounded. There was no further action on Nissan Island. On 23 February small enemy groups were cleaned out on the neighbouring Pinipel and Sau Islands to end organised resistance to 3 Division's seizure of the islands.

During the nine days of the operation, 15–23 February, and the commando raid of 31 January, New Zealand casualties were 10

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[1] Lt-Col W. R. Fea; Hamilton; born Dunedin, 5 Oct 1898; medical practitioner; CO 24 Fd Amb Apr 1943–Sep 1944.

[2] Maj P. C. E. Brunette, m.i.d., Legion of Merit (US); Nelson; born Wellington, 2 Aug 1897; Medical Superintendent, Nelson Public Hospital; medical officer 7 Fd Amb 1941; OC 1 FSU Nov 1942–Aug 1944.

[3] Maj R. M. Irwin, m.i.d.; Waimate; born Christchurch, 27 Oct 1914; medical practitioner; OC 6 Fd Hyg Sec 1943–44.

[4] Maj R. G. S. Ferguson; Wellington; born Auckland, 10 Jun 1916; medical practitioner; medical officer 7 Fd Amb 1942; 22 Fd Amb 1943; OC 1 Malaria Control Unit 1944.

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killed and 21 wounded and American casualties 3 killed and 3 wounded, while 120 Japanese were killed.

Important features of the operation were the provision of water by distillation and the exceptionally careful regard for sanitation and malaria control. Each man landed with his water bottle full and units carried two gallons for each man in bulk. The distillation plants began to work at the end of the first day, but there was an acute shortage of water for some days, troops drinking coconut milk. The fighting troops had to be meticulous as regards sanitation because the atoll was so small that battlefields were likely to become the sites of permanent camps. Within a month of the initial landing 16,448 troops were stationed on Nissan and the American engineers had cleared a considerable portion of the island for an airfield.

Medical Operations on Nissan

Detailed medical arrangements were made by the Americans aboard the LST flotilla to deal with heavy casualties from the initial landing, but as the landing was unopposed the surgical teams on board were not required to function prior to the departure of the convoy on its return journey on the afternoon of 15 February. During the morning 24 Field Ambulance and 1 Field Surgical Unit were fully occupied in establishing an MDS, delay being occasioned by an LST landing the heavy medical equipment at the wrong beach. Consequently, equipment weighing about 20 tons had to be manhandled some 400 yards north to the site originally selected. The MDS, however, was ready to receive casualties at 2 p.m.

The site of the MDS was in a swampy and necessarily restricted area in Pokonian plantation in 30 Battalion zone. It was originally understood that this confined area was to be occupied for security reasons for the first night only. This was a gross underestimate, and when the move to a permanent site was eventually possible five days later, this initial area had become a morass. The new site was in a drier area about one mile south of Pokonian plantation on the lagoon shore. Work with a bulldozer and much blasting of coral, which was very near the surface, was necessary to prepare the site for the MDS. On 20

February 1 Field Surgical Unit moved to the site and set up its theatre, resuscitation tent and hospital tents. By 22 February the whole of the MDS and patients had been transferred to the new site.

Three beach dressing stations from 24 Field Ambulance, one for each battalion, were functioning soon after the landing on 15 February, but later that day two of these moved forward with the advancing infantry battalions. During the following week the sporadic encounters with the enemy produced few casualties, which were handled without difficulty. Twenty-eight battle casualties, mostly with gunshot and grenade wounds, were admitted to the MDS up to 25 February, 26 operations being performed.

On 20 February an evacuation of twenty-two patients, including sick, was made by LST to Guadalcanal, and a further evacuation of thirty-three patients was made on 25 February, the patients having first to be transported across the lagoon for embarkation at Tanga-lan plantation. Evacuation by air began on 13 March, 24 Field Ambulance establishing a holding hospital at the airstrip itself to enable patients to be loaded promptly.

In the meantime 22 Field Ambulance (Lieutenant-Colonel Barrowclough [1]) arrived and established itself at a selected site on the south coast, opening an MDS on 1 March near Tanaheran. Shortly after their arrival the men captured a wounded Japanese in their area and later that evening were molested by three armed Japanese, who escaped capture.

The medical situation now resolved itself into caring for the growing garrison force, no further active operations being undertaken by the Division.

Hygiene and Sanitation

Water supplies proved the greatest problem on Nissan Island, as no water suitable for drinking or cooking occurs naturally there. For the

first few days after landing there was an acute shortage and troops drank copious quantities of coconut milk. Water had to be provided by distillation plants which produced approximately two gallons per man per day. In a few places wells were bored and the water, though brackish and very hard, was used for washing. Tents were used for rainwater catchment, and thus the most satisfactory water for washing was obtained, although the number of containers was inadequate for some time. Extensive facilities for sea bathing were available to almost every unit on Nissan.

During the first three weeks units disposed of their rubbish and garbage within their own lines, but as roads permitted, dumps were established at suitable points along cliffs on the sea coast, with shutes leading straight into deep water. Inadequate disposal of empty coconuts and food refuse led to a large fly population. However, with clearing of camp sites and improvement of sanitation generally, the number of flies was reduced. Native pigs abounded on the island and proved a nuisance by rooting up refuse that had been buried.

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[1] Lt-Col F. G. Barrowclough; Palmerston North; born Riverton, 27 Nov 1898; medical practitioner; medical officer 7 Fd Amb Jan 1941–Nov 1943; CO 22 Fd Amb Nov 1943–Dec 1944.

There were anopheline mosquitoes on Nissan but the area of permanent breeding places was not great, though native wells, pig wallows and pools in low ground required careful search in jungle areas. The exception was the salt swamp area south of Pokonian, which was heavily forested and obstructed by tree roots and was difficult to traverse with oil and sprayers. The rapid increase in man-made breeding places required careful watching and effective control to prevent colonisation by anopheles from the scattered permanent breeding places. This was especially true of the jungle roads. Fortunately the greater part of the island was well drained and did not hold water unless the soil had been disturbed. Cases of malaria were few, although there was an increase to twenty in March. Troops were still failing to apply repellent

Skin disease was again troublesome. On the Treasury Islands a scrub mite had caused skin irritations, but on Nissan a small red-brown caterpillar caused lesions wherever it touched the skin. The pruritis lasted for several days, and often scratching, which was irresistible, left excoriations which became infected and caused temporary disability.

As on Vella Lavella and Mono Islands, New Zealand medical officers gave treatment to the native population on Nissan and Pinipel Islands. Several weekly visits were made to Pinipel on landing craft and the 200 natives were given injections for yaws and other medical treatment. A great improvement in their health, both mentally and physically, was noted. About seventy men worked under supervision for the New Zealand forces. Some 1200 natives were evacuated from Nissan Island immediately after the occupation.

The occupation of Nissan led to the detection in April of hookworm infection in the troops. The natives of the island were heavily infected with hookworm (ankylostomiasis), and the infection probably occurred in the first few days after landing when troops were sleeping in foxholes or on ground that had been infected by natives. It may perhaps have occurred through the wearing of unserviceable canvas jungle boots, most of which were by then in poor repair, with numerous defects in the seams through which infected mud and water could pass. Eosinophilia was also present, though it was concluded that this condition was not necessarily due to hookworm infestation.

Medical Stores

Medical stores during active operations were supplied through the New Zealand Medical Stores Depot, which had its forward headquarters at Guadalcanal and a base store in New Caledonia. A section was on Vella Lavella for a time. Almost all supplies were drawn from American medical depots, under lease-lend agreement, although such items as field equipment and Red Cross hospital supplies came direct from New Zealand. Certain ordnance supplies were handled more satisfactorily by

the Advanced Depot of Medical Stores. Some of the items issued in six months from Guadalcanal were: Petrolatum 718 lb.; Fuschin Basic 360 gms.; Zinc oxide 250 lb.; Calamine 240 lb.; Multivitamin capsules 330,000; Cresol Sap. Soln. 280 gals.; Mercury bichloride 28,000 tabs.; alcohol 640 gals.; Acid acetysal 350,000 tabs.; bandages, 3–in. 1000 doz.; 2-in. 800 doz., 4-in. 500 doz.; Cotton abs. 1200 lb.; Cotton abs., 1 oz., 5800 pkts.; gauze, 1 yd., 1300 pkts.; gauze, 100 yds., 128 rolls; plaster, 1-in. 2500 spls., 3-in. 2800 spls.; sponges surgical 2 × 2, bags of 200, 600; sponges surgical, bags of 500, 280.

It was estimated that during the period of greatest activity the unit was supplying nearly 40,000 troops, including some Americans, RNZAF and RNZN units in the islands.

Casualty Clearing Station

While the unit was on Guadalcanal from 14 September 1943 to 19 May 1944 2 NZ CCS admitted 2210 patients with only two deaths occurring. Twelve hundred and fifty-four patients requiring prolonged treatment or convalescence were evacuated to New Caledonia to 4 General Hospital and 2 Convalescent Depot. The policy was laid down that patients with a convalescent expectancy of less than thirty days (reduced in January 1944 to twenty days) were to remain at the CCS until discharged fit to their units, others being transferred to New Caledonia; air evacuation was used throughout the whole of the period on Guadalcanal, thanks to the co-operation of American air headquarters on the island. The first casualties from the Treasury action were back at 4 General Hospital within forty-eight hours of being wounded. The number of battle casualties from actions by 3 NZ Division was not large, but they were augmented by Fijian wounded admitted from actions on Bougainville. Fijians were cared for in New Zealand medical units where possible and a suitable line of evacuation from New Caledonia to Fiji was in operation. Sickness, notably skin diseases, neurosis and malaria, contributed largely to keep the average bed state of the CCS at 130, with ten to fifteen admissions each day. There was

very little sickness in the Division and no epidemics.

The CCS site was originally cleared with a bulldozer by engineers, who also built kitchens, mess huts and recreation huts. Later, in January 1944, the tented wards were replaced by prefabricated wooden buildings. The unit put in much work under the leadership of Lieutenant-Colonel S. L. Wilson, making its camp site a model area. Later COs were Lieutenant-Colonel Comrie (in January 1944) and Major Riley [1] (in April 1944). Early in March 1944 a team of eight nursing sisters was attached to the CCS from 4 General Hospital. Unfortunately they were not sent forward during the period of active operations to nurse the seriously wounded cases.

The CCS was well staffed and equipped to carry out both medical and surgical treatment. Full knowledge of war wounds as seen in the Middle East was possessed by Lieutenant-Colonel Wilson. Tulle gras dressings were supplied from New Caledonia. X-ray facilities at the adjoining United States hospital were used until an apparatus was available at the CCS. (The X-ray plant was not installed until December 1943 after the Vella Lavella and Treasury actions. The delay was occasioned by scarcity of plant in New Zealand, and then by slow shipment. It was realised that a radiologist and equipment should have been available for the CCS when it was established.) Although the majority of cases had already been operated on by the FSUs or field ambulances, there were batches of wounded admitted for primary treatment.

From 16 October to 31 January 139 wounded were admitted, 80 of them being sent on later to New Caledonia. There was only one death in these cases in the CCS.

End of Active Operations

The possible role of 3 Division in future operations planned for the seizure of Kavieng and the final neutralisation of Rabaul did not eventuate owing to the early and successful occupation by the Americans of the Admiralty Islands and Emirau Island. The campaign in

the south-west Pacific was then virtually ended. From New Zealand instructions were received in March for the withdrawal of troops of 3 Division for work in essential industries in New Zealand. A regrouping of forces at the end of May saw the Division taken out of the combat area and brought back to its old base in New Caledonia, where arrangements were made for its disbandment and return to New Zealand.

Because of its size and composition, 3 Division was not used in the larger operations of the Solomons campaign – Munda and Empress Augusta Bay – but it found its niche and did its work well in the smaller, very valuable, if less spectacular sallies into Vella Lavella, the Treasuries and Green Islands.

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[1] **Maj C. G. Riley; London; born Dunedin, 16 May 1912; medical practitioner; medical officer 2 Gen Hosp Nov 1940–Oct 1941; 1 Gen Hosp Oct 1941–Dec 1942; 4 Gen Hosp Feb–Sep 1943; 2 CCS Oct 1943–Jun 1944.**

VI: Appendices

EQUIPMENT CARRIED AS FIRST PRIORITY BY 7 NZ FIELD AMBULANCE AT LANDING ON TREASURY ISLANDS

Headquarters Company

Description	*Weight lb.*	*Cubic Ft.*	*Contents*
Case	100	3	Table, operating FA, 1.
Case	85	4½	Steriliser, HP portable, 1.
			Steriliser drums, 3.
			Procaine soln, cartons, 4.
			Pentothal sodium amps., 20.
Case	60	4½	Towels, hand, 72.
			Gowns, operating, 15.
			Gowns, nursing orderlies, 12.
			Masks, anaesthetic, 4.
			Masks, theatre, 1.
Case	60	4½	FA Box No. 6, 1.
Case	100	3	FA Box No. 7, 1.
Case	55	4½	Tulle gras, tins, 4; dressings, sterile, tins, 3; vaseline gauze, tins, 19; bandages M/tailed, 6; elastoplast 3-in., tins, 22; sulphanilamide, tins, 12; stretchers ambulance, cushions, 2.
Case	60	4	FA Box No. 5, 1.
Pannier	60	4	FAP No. 1, 1.
Pannier	60	4	FAP No. 2, 1.
Pannier	55	4	Transfusion pannier, 1.
Case	50	4	Head mirror, 1.
			Blood plasma, sets, 17.
			Sodi cit, amps., 15.
Pannier	50	4	RMP, 1.
Pannier	80	4	RFMP, 1.
Pannier	50	4	Fracture pannier, 1.
Case	25	2	FA Box Nos. 1 and 3, 1.

Case	**50**	**4**	**FA Box No. 4, 1.**
Case	**60**	**4**	**FA Box No. 8, Dettol, 1; bleaching powder, tins, 4; companions, medical, 1; instruments, operating, case, 1; clippers, hair, 1.**
Case	**25**	**1½**	**Reserve dressing box, 1.**
Case	**50**	**4½**	**Dressings, shell, 7.**
			Dressings, sterile, tins, 22.
Crate	**80**	**5**	**Splints, Thomas, 14.**
Crate	**60**	**4**	**Bars, suspension, 14.**
			Stirrups and clips, 14.
			Pillows, stretcher, 12.
Cases (10)	**48**	**4½**	**Blankets, 10 in each case.**
Case	**80**	**4½**	**Pyjamas, prs., 40.**
Case	**80**	**4½**	**Pyjamas, prs., 36.**
			Bottles, HW, 16.
			Bottles, HW covers, 14.
Case	**100**	**4½**	**Sheets, ground, 34.**
Case	**100**	**4½**	**Sheets, ground, 33.**
Case	**100**	**4½**	**Sheets, ground, 34.**
Case	**35**	**4½**	**Basins, IE, 13; scissors, stretcher bearers, 24; brushes, shaving, 4; brushes, tooth, 6; sponges, bath, 2; funnel IE, 4-in., 1; brushes, feeder, 11; towels, bath, 24.**
Case	**35**	**4½**	**Nets, mosquito, 15.**
Case	**35**	**4½**	**Nets, mosquito, 15.**
Case	**30**	**4½**	**Nets, mosquito, 20.**
Case	**30**	**4½**	**Bedpans, IE, 6; feeders, 12; measures, IE, 4; bottles, water, FP, 8; buckets, canvas, 4.**
Pannier	**40**	**4**	**Medical comforts pannier, 1.**
Case	**35**	**4½**	**Lamps, hurricane, 12; funnel IE, 4-in, 1; torches, electric, 10.**
Case	**30**	**4½**	**Lamps, hurricane, 9.**
Case	**35**	**4½**	**Spare globes, 2; mantles, spare, 7; lamps, paraffin, pressure, 6; torches, button, 6; burner washers, 53; meth. filler can, 1.**
Case	**120**	**4½**	**Plates, ST, 50; bowls, soup, 50; pannikins, 50; knives CS, 50; forks NS, 50; spoons, dessert, 50; forks, meat, 2; knife, bread, 1.**
Case	**60**	**4½**	**Stoves, oil wickless No. 5, 7.**

Case	**50**	**4½**	**Brush, scrub, 3; brush, nail, 2; jugs, 2; kettles, camp, oval, 5; ladles, cooks, 2; openers, tin, mechanical, 1; buckets, canvas, 2.**
Case	**50**	**4½**	**Stationery bundles, 1; Case WT, sterilising, 1; sprays, hand, pump, 6; slings, stretcher, 48; twine, rolls, 1; stools, camp, 2.**
Crates (15)	**110 (ea.)**	**3 (ea.)**	**Containers, water 2-gal., 5 each.**
Case	**100**	**4½**	**Axes, 3; hooks, bill, 2; hooks, reaping, 3; knives, cane, 8; shovels, GS, 4; spades, 2; twine, balls, 1; taps, 2; pulleys, 1; ttrel, 1; adze, 3; pick, 2; slashers, 6.**
Bundles (5)	**180 (ea.)**	**13 (ea.)**	**Tents IP 180, 1 each.**
Bundles (4)	**300 (total)**	**11 (total)**	**Tarpaulins, WP, 6.**
Case	**30**	**3**	**Ether, tins 1 lb., 28.**
Case	**100**	**5**	**Plasma sets, 30.**
Bundles (12)	**24 (ea.)**	**4 (ea.)**	**Stretchers, ambulance, 2 each.**
Package	**28**	**3**	**Hydro-burner, 1.**
Crate	**24**	**3**	**Stands and plates, 4 each.**
Case	**100**	**3**	**Batteries, 6-volt, 3.**
Case	**100**	**4½**	**Surgical sponges; abdominal swabs; face masks; vaseline gauze, sterile, tins, 12; water, sterile, amps., 4; sulphanilamide powder, 5-gr. sterile packets, 48; sheet, WP, 1; tube, drainage; tube, suction; tetanus, toxoid, 300; procaine, spinal; quinine, intrav., amps., 24; atebrin, intrav., amps., 10; procaine 2 per cent, bottles, 5; sod. sulphathiazole, intrav., bottles, 6; sod. cit., amps., 12; soln. copper sulph., 2 per cent oz., 4; cannister dressing, 1; battery, lamp, 1; brushes, nail, 2; suture, dermal boxes, 3; washer, autoclave, spare, 1; applicators, wood, boxes, 1; tabs pot. permang., 200; procaine and adrenalin, amps., 25; tincture benzoin co., oz., 4; liq. iodi. mit., oz., 4; soln. acriflavine, oz., 4; phenol liq., oz.,**

4; collodion flex, oz., 2; blades, razor, pkts., 3; safety pins, tin, 1; note book and pencil, 1; tab azochloramide, 100; soluble M. and B. amps., 5; matches, pkt., 1.

A Company

Description	*Weight lb.*	*Cubic Ft.*	*Contents*
Case	60	3	Laboratory equipment.
Case	40	4½	Orderly room equipment.
Case	40	4½	Pentothal, sodium; ether; chloroform ethyl chloride; syringes and needles; face masks; adhesive plaster.
Case	50	4½	Ether; dressings.
Case	60	4½	Sterile dressings; gauze swabs, tulle gras; guards; gowns, operating; plaster.
Case	60	4½	Thermette; steriliser; instrument trays; bowls IE; dixie.
Case	70	4½	Primus; Coleman double burner; instrument table; steriliser; SVM.
Case	120	6	Pharmaceutical supplies.
Pannier	80	5	FAP No. 1.
Pannier	60	5	FAP No. 2.
Case	100	5	Plasma sets, 30.
Pannier	50	5	Fracture pannier, 1.
Pannier	80	5	Medical comforts pannier, 1.
Crate	80	3	Tables, folding, 3.
Crate	28	3	Hydro-burner, 1.
Bundle	20	2	Thomas splints, 5; Kramer wire, pieces, 16.
Bundles (12)	20	3	Stretchers, 2; cushions, 2; slings, 4 each.
	(ea.)	(ea.)	
Crates (12)	85	2½	Water cans, full, 2-gal, 4 each.
	(ea.)	(ea.)	
Crates (2)	85	2½	Petrol tins, 2-gal., full, 5 each; kerosene tins,
	(ea.)	(ea.)	2-gal., full, 3.
Bundles (2)	180	13	Tents, IP 180, 1 each.
	(ea.)	(ea.)	
Case	60	4½	Cooking equipment.

Pannier	**70**	**4½**	**RMP, 1.**
Pannier	**70**	**4½**	**Medical comforts pannier, 1.**
Cases (2)	**100**	**4½**	**Tools: Rake, 1; slashers, 8; shovels GS, 6; shovels LH, 5; picks, 4; axes, 5; handsaw, 1; spades, 2.**
	(ea.)		
Crate	**40**	**3**	**Cooking stands, 4.**
Bundles (3)	**180**	**11**	**Tarpaulins, including Red Cross, total, 4.**
	(total)	**(total)**	
Bundles (3)	**30**	**3**	**Tent poles, operating theatre.**
Pannier	**70**	**4½**	**RMP, 1.**

Comment on Medical Equipment by OC 7 Field Ambulance

Syrettes **are greatly preferable to morphia in solution. All medical officers are in agreement with this, one reason being that morphia in solution seems to deteriorate, and that syrettes are much easier to give under adverse conditions. In our opinion they should replace morphia tablets and solution in all panniers and packings.**

Plasma **was of course of great value. We felt the need at times of whole blood, and in two cases whole blood was given. The difficulty is to procure donors who can reasonably spare the blood under active-service conditions.**

I have discussed the question of a blood bank at some length with the medical officers concerned in the evacuation of our initial casualties and they feel also that something should be done in regard to blood in the forward zone. In an initial assault landing the blood should be available in large quantities. To obtain it, it was suggested that a blood bank be established at Guadalcanal from whence it could be carried by LSTs. In later trips maintenance levels only to be carried. It would entail priority 1 for the Fd. Amb. refrigerator but this should not be an impossible task and at least 10–12 pints of blood could be stored in the refrigerator within 4 to 6 hours of landing. It would be taken off the LST just prior to the latter's departure.

***Field Ambulance Panniers*: There are still a number of articles in them which appear to be of little use in the early stages of the operation, e.g. Tannafax, Spts. Amon. Aromat., Lysol tablets (which are neither on US nor NZ supply lines). Even early large amounts of Amytal, Sulphaguanidine and Phenobarbitone are in demand.**

***Plaster of Paris* is required in large amounts and early.**

Comment on Ordnance Equipment

***Vehicles*: Under Brigade instructions a minimum of vehicles was allowed, in our case the first echelon brought one 30 cwt. and 4 Jeeps. These vehicles were really sufficient though we would have welcomed an additional 30-cwt. and a water cart earlier in the picture, especially so in view of the fact that the 30-cwt. was called on frequently for a Brigade Transport pool. The water cart must be an early priority vehicle. It is of value as soon as roads of any sort exist.**

***Water Cans*: These are required in large numbers, either 2 gallons or US 5 gallon pattern. Water may have to be carried by hand some distance through the jungle. Ours were crated in 5 tins (2 gal.) crates with rope handle. This was a mistake, they would have been better carried singly.**

***Medical comfort panniers* are invaluable. Large quantities of sugar and tea should be carried. There is a big demand for these and they are not available from ASC sources for some days.**

***Hot water bottles* were taken in early priority. They are unnecessary in tropical warfare except possibly one or two.**

***Primus stoves* are of great value, but hydra burners are still of more value. The extra weight is more than compensated for by the amount of heating that can be done with them.**

***Tentage* cannot be reduced below present NZEFIP establishment, viz.: 7 IPPs and 45 IP 180 1b. These may not all be required in early**

stages but tents suffer in transport more than most articles and are more likely to be burned or damaged. Tarpaulins are of more value than tents for small dressing stations.

***Tools*: Cane knives are useless – they are far too light. Machetes are the tools required. Similarly G.S. shovels are no good in this soil – spades and hand picks are of much more value. Crowbars would be useful. All tools must be available immediately on landing as they are the first requirement.**

***Sheets* were never used. We had hoped to put the more seriously ill cases in sheets in view of the climate, but this proved to be quite impossible because of the washing difficulty and water shortage. Sheets can never be used in an early stage until water is in free supply and washing facilities organised. The washing machine is worth its weight in gold and should be priority 1 even if it is a bulky article.**

***The refrigerator* was a later arrival and was badly damaged in transit. It would have been very useful, and would be so now if it were functioning but it is not imperative. If a blood bank is to be instituted, the refrigerator must be priority 1.**

***Fuel (white spirit, kerosene), toilet paper and soap* must be taken in large quantities early. Though the ASC carried supplies, there is little possibility of ever getting an issue from ASC sources for some days. They must be carried on the LCIs.**

***Tin mugs* are very poor articles. They taint every drink, get extremely hot immediately hot drinks are put in them, while their sole virtue is that they are unbreakable.**

***Jungle clothes:* The NZ variety of jungle clothing is most unsuitable. It is heavier and hotter than its US counterpart and the camouflage paint stops what little aeration there might be in the fabric. It may be good camouflage; as physiological clothing it is very poor.**

***Mosquito nets:* We carry large stocks of these, and would have been**

unable to manage without these reserves. In action patients never come in with their nets.

Clothing: **As we anticipated, the salvage problem with regard to clothing, web, rifles, etc., was most unsatisfactory. No salvage unit was operating for at least ten days in spite of requests put in by us before the Brigade Group left Guadalcanal. The Medical Corps cannot be held responsible for this type of equipment. They have neither the personnel, space nor time to give to oiling rifles, sorting out soiled and damaged clothing, etc. A salvage group must be functioning right from the commencement of operations.**

EQUIPMENT OF 2 FIELD SURGICAL UNIT

Description	*Weight lb.*	*Cubic Ft.*	Contents
Case	100	11	Theatre lights, electric.
Crate	100	2	2 6-volt batteries.
Case	80	11	Poison cupboard, containing large amount drugs, dressing trays, sterile water jars, sterile dressing drums.
Case	100	9	Rubber aprons; caps; masks; towels; eye shields; French chalk; sterile drums; oil; PQP face cloths.
Case	80	9	Assorted sutures, 20 doz.; antiseptics, 20 bottles; BP blades; sulphanilamide pulv. in tins, 4 lb.; phenol; sticking plaster.
Case	80	9	Drums unsterile gowns; towels; sheets; basins IE 12 in.; soap; towels; gowns, operating, unsterile.
Case	150	11	Cotton wool; bandages 3 in.; flannelette, 4 in.; gauze, POP, assorted; French chalk; vaseline; crinoline; rubber drainage; elastoplast.
Case	80	11	Hurricane lamps, 10; Coleman lamps, 3.
Case	60	6	Tools; picks; shovels; spades.
Case	30	3	Medical comforts; tea; cocoa; etc.
Bundle	30	3	Tent poles, IPP.
Case	100	9	Ward equipment; sterile swabs; shaving gear; dressings; swabs; guards; antiseptics; hair clippers.

Case	**65**	**4**	**Sterile drums; ctg. guards; swabs; 1 6-volt battery.**
Drum	**60**	**3**	**5-gal. drum SVM.**
Crate	**80**	**4**	**4 2-gal. water tins filled in crate.**
Crate	**80**	**4**	**4 2-gal. water tins filled in crate.**
Crate	**80**	**4**	**4 2-gal. water tins filled in crate.**
Crate	**80**	**4**	**4 2-gal. water tins filled in crate.**
Crate	**80**	**4**	**4 2-gal. water tins filled in crate.**
Crate	**60**	**4**	**2 folding tables, small.**
Case	**120**	**10**	**Saline, 6 bottles; glucose, 12 bottles; shell dressings, 26.**
Drum	**60**	**2**	**5-gals. kerosene.**
Drum	**60**	**2**	**5-gals. kerosene.**
Drum	**60**	**2**	**5-gals. kerosene.**
Pannier	**80**	**6**	**Complete set surgical instruments.**
Pannier	**80**		**Transfusion apparatus, comp.**
Case	**70**	**10**	**Kramer wire; Thomas splints; light switches on stand; brooms base.**
Case	**5O**	**6**	**Tools, assorted.**
Case	**60**	**6**	**Rubber tubing, all sizes; gloves, surgeons, 8 doz.; rectal tubes; rubber bandages; ether; chloroform; ethyl chloride; pentothal.**
Case	**120**		**Autoclave; sterilisers, Shimilbush; vaseline gauze; nail brushes; POP.**
Case	**100**	**8**	**Operating table and case; pillow; sheet; blanket.**
Package	**60**	**4**	**Two folding tables, Mk IV.**
Case	**60**	**4**	**1 6–volt battery.**
Package	**70**	**8**	**Tarpaulin QOD.**
Package	**100**	**12**	**½ of 1 IPP.**
Package	**180**	**12**	**1 tent 180 Ib.**
Package	**180**	**12**	**1 tent 180 Ib.**
Package	**100**	**12**	**½ of 1 IPP.**
Package	**60**	**7**	**Bag ctg. 2 IPP sides.**
Package	**60**	**7**	**Bag ctg. 2 IPP sides.**
Package	**70**	**10**	**Peg bag and mallets.**
Package	**80**	**10**	**44–gal. drum w/tap, buckets inside, and 1 bath IG.**

Package	**60**	**3**	**Transfusion standards 3.**

Comment by OC 2 Field Surgical Unit

(1) The weight allowed for first priority equipment was 2 tons.

(2) The allowance adequately covered theatre equipment. There was a minimum of nursing equipment, sufficient to prepare patients for operation, reliance being placed on 7 Fd. Amb. for the balance, an arrangement which worked out well.

(3) Of particular value were the IPP tent for theatre, electric lights and batteries, drums of kerosene, dieselene spirit and water. In spite of their bulk and weight these were just portable and proved indispensable.

(4) A shortage developed in prepared plaster-of-paris bandages and iodine. More should be brought another time in first priority.

EQUIPMENT OF LOGAN FORCE

Description	*Weight lb.*	*Cubic Ft.*	*Contents*
Case	**30**	**4½**	**Ether; WSP; Carlisle dressings; jungle kits; liq. iodine; towels; torch batteries; POP bandages; cotton wool; pentothal and sterile water; ung. salicyl; torch; masks.**
Case	**50**	**4½**	**Mugs; vaseline gauze; pulv, sulphaguanidine; towels; shell dressings; hurricane lamp; mess gear; basin, IG; hammer; calamine; tabs quin. bisulph; Horrocks box; jungle kits; surg. haversack; primus; ground sheets; pup tents.**
Case	**30**	**4½**	**Blankets; biscuits; stirrups; tea; medical companion; Millbank clips; pup tent.**
Crates 2	**80 (ea.)**	**3 (ea.)**	**Water tins, full, each 4.**
Case	**30**	**4½**	**Medical comforts, splints and tools.**
Tin	**20**		**Kerosene, 2-gal. tin, full.**
Bundles 2	**20 (ea.)**	**3 (ea.)**	**Stretchers, 2 each,**
Case	**30**	**4½**	**Plasma sets.**
Bundle	**180**	**13**	**Tent, IP 180.**
Pannier	**50**	**4**	**RMP.**

VII: GENERAL MEDICAL SURVEY – 2 NZEF (IP)

VII: General Medical Survey – 2 NZEF (IP)

Administration

The whole of 2 NZEF (IP) was under the command of the United States Forces and worked in conjunction with them. This applied particularly to the medical services, who were dependent on the facilities of the United States Forces for evacuation of sick and wounded from island to island.

Some difficulty was experienced in the early stages – before 2 NZEF (IP) was properly established – regarding the checking and recording of casualties and hospital admissions in the many cases where New Zealand soldiers were admitted to United States hospitals, and for the lesser number of United States personnel admitted to New Zealand hospitals. However, a satisfactory system was evolved for notification of admissions and the interchange of records of such personnel.

Medical administrative and technical instructions were issued from time to time by DDMS, 2 NZEF (IP), to meet the various problems of administration and treatment as they arose. A few of these instructions were reprints from instructions of the Australian medical services, from whom much useful help and information was gained.

Liaison with United States Medical Units

The American Navy was in administrative control of the South Pacific Area in which 2 NZEF (IP) was engaged. The United States Services were responsible for the transport of our forces and for the evacuation of casualties in the area. The American medical organisation was divided into three sections, controlled respectively by the Army, Navy and Marines. Each arm had its own hospitals and staff but their

activities were co-ordinated.

To the 2 NZEF (IP) medical organisation was delegated the care of their own personnel and also of those of the Royal New Zealand Navy and Air Force and of all British nationals, including civilians. The widely scattered area, however, called for considerable elasticity and in effect casualties from all nationalities were admitted to the nearest suitable medical unit. A close liaison existed between New Zealand Medical Headquarters of the force and of the Division with their opposite numbers in the United States Forces. Interchange of records was arranged with the transfer of a patient and the Americans provided all kinds of supplies, both medical and ordnance. The liaison was a very happy one throughout the period, and our senior officers acknowledged the great help that was given them by the American medical services.

The United States Forces established hospitals of 500–1000 beds in the Solomons, at first using tents and then replacing them with huts. As a result of bombing attacks underground wards were dug under the day wards and were roofed with logs, a layer of gravel and earth and then concrete, which provided the floors for the day wards above.

Supplies

These were obtained mainly from United States supply depots, both Army and Navy. Some supplies came from Australia and others from New Zealand. Ample American supplies were always available, with equivalents for all essential items on the British scale. A Depot of Medical Stores was set up close to Nouméa under the control of DDMS, NZEF (IP). An Advanced Depot moved forward to Guadalcanal and for a time maintained a section on Vella Lavella. It handled Red Cross hospital supplies and National Patriotic Fund Board hospital comforts. Field equipment came from New Zealand, and consisted of standard British Army equipment obtained from Australia and the United Kingdom. Sera and local anaesthetics prepared in New Zealand did not prove satisfactory.

Clothing

Long trousers and long-sleeved shirts were essential as clothing in the jungle, both for protection of the skin and as a precaution against malaria. Tight-fitting belts were undesirable. The canvas jungle boots supplied proved unserviceable, as they became cracked and leaked and were blamed for many skin infections, and also for the hookworm contracted during the occupation of Nissan. Strong leather boots and woollen socks proved the best protection for the feet and the most serviceable footwear. In the Solomons rainproof outer garments were necessary because of the tropical rain. Great difficulty was experienced in drying the wet clothing and garments that had been washed and unit drying sheds were provided later in the campaign.

Special Equipment

Pioneering tools such as axes and slashers (machetes) were of special importance for the preparation of camp sites and bush tracks, for which purpose the assistance of bulldozers was also required, especially in areas subject to bombing.

Medical Arrangements for Assault Landings

In the absence of roads in the initial stages of assault landings, no wheeled transport was of any use and all equipment and supplies had to be carried by the staffs of the medical units. Before the assaults each field unit spent much time in the re-arrangement of its equipment so as to be quite independent of vehicular transport. The lighter equipment was put in canvas holders which were made to fit on with the web pack. The heavier equipment, for which panniers were not available, was packed into strong wooden boxes made with rope handles so as to provide a load of 100 pounds for two men. Even then considerable difficulty was experienced, especially when the equipment was unloaded from landing craft some distance from the camp site.

The priority equipment of the Field Surgical Unit which was carried

with the first echelon weighed only two tons. It included an IP tent which gave a room of 18 feet by 16 feet for an operating theatre. There was a tarpaulin for floor covering and, besides the standard instruments and equipment, fifty gallons of water were carried in drums for immediate use, as well as kerosene, electric batteries and overhead electric lights, intravenous fluids, and even a mechanical blood suction apparatus made from a motor-tyre pump.

The setting up of the MDS and FSU proved to be a laborious and relatively slow process. In the Treasury landing the medical units landed half an hour after the assault troops, but it was six hours later before the tented MDS was ready to receive patients. In the meantime the first casualties were attended to on an LST especially equipped and staffed for surgery by the Americans. The short line of evacuation enabled the surgical staff to operate on casualties generally within twelve hours of wounding.

The casualty rate was 2.6 per cent of the troops in the Solomons, one-third being killed and two-thirds being wounded. The proportion of killed to wounded was much higher than in Italy or Normandy, this showing the deadly nature of jungle fighting.

First Aid

There were difficulties both in rendering first-aid treatment to the wounded and also in evacuating the cases to the MDS from the jungle areas. Little could be done in the jungle except to apply first-aid dressings, Thomas or Kramer splints, and to give morphia and occasionally plasma. Morphia was administered by syrettes, which were freely available even in the individual first-aid kits carried by the assault troops. With troops on patrol at least one man in each section was trained in first-aid. The first-aid kit contained dressings, iodine, sulphonamide, alcohol, aspirin, morphia syrette, atebrin, sticking plaster, field dressing and a two-inch rubber strip from a motor tyre inner tube to act as a tourniquet. (Knife wounds which had a tendency

to free bleeding sometimes called for a tourniquet.) The field dressing was contained in a tin or a waterproof cover, the American tins being most efficient in the wet and hot conditions, while the British field dressing was not sufficiently waterproof and became useless in the wet. The American dressings had the disadvantage of having a conspicuous white bandage and a large dressing pad, but had a valuable sulphanilamide content. The smaller British dressings were more serviceable. There were also difficulties in protecting the wounded and the medical personnel in the jungle from enemy assault.

Evacuation was by stretcher and barge to the Main Dressing Station, to which unit was attached one or other of the FSUs with adequate equipment to undertake the major surgical work. The minor cases were dealt with by the field ambulance staff. This setup was similar to that in the Western Desert. Wound treatment followed the Middle East pattern and relatively little infection was seen. [1]

Evacuation

(a) ***Battle Casualties in the Islands***: Extreme difficulties were experienced in the evacuation of seriously wounded men from the jungle. The patients had to be carried out along narrow tracks in dense bush, with the constant menace of Japanese snipers to contend with, and in some cases the ordinary stretcher could not be used. Movement was as a rule only possible in the daytime, and at night the wounded were kept under shelter in a foxhole until daylight. Barges were used when possible to bring the casualties round the coast of an island to the MDS. This was especially the case at Vella Lavella, while in the Treasuries wounded were brought from Mono Island to Stirling Island, and at Nissan the cases had to be ferried across the lagoon. For motor transport four-wheel-drive ambulance cars with lowered hoods were preferred to jeeps. Flint stretcher apparatus for fitting to vehicles was available if required.

(b) ***From MDS to CCS at Guadalcanal***: The casualties were taken to the CCS at Advanced Base on Guadalcanal by sea or by air, and at first the LSTs used in the landing took back the wounded. These LSTs of 2000-ton capacity could take 100 lying and 200 sitting cases and were fitted out by the Americans as surgical or medical ships. The surgical ships had a liaison team, a resuscitation team and a surgical

team – in all, six medical officers and eleven men – and they were well equipped with an operation room and all essentials, including cooking facilities. Some of the immediate forward surgery was carried out by United States surgical teams on LSTs, on to which were evacuated the casualties which occurred in the

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[1] See *War Surgery and Medicine*.

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first few hours of attack. The United States teams did excellent work and the landing ships proved most satisfactory for the evacuation of wounded between the islands.

Later, as airstrips were made on the occupied islands, the majority of the casualties were taken back by air by Douglas transport planes, which proved eminently satisfactory for the evacuation of the serious cases. Medical holding units were established on the aerodromes by our own or American units.

(c) *From Guadalcanal to New Caledonia*: Evacuation was both by air and sea to the Nouméa area in which 4 General Hospital was situated. Hospital ships and transports were both used.

(d) *From New Caledonia to New Zealand*: Evacuation was by ship, either hospital ship or transport, from Nouméa to Auckland.

The evacuation in all areas was under the administration and control of the United States Forces, and appears to have been carried out without a hitch and without interference from the enemy.

Surgery

The surgical work carried out during the Pacific campaign by the New Zealand Medical Corps consisted largely of the routine civilian type of surgery (mostly of minor degree) necessitated in any large group of men. The ready evacuation of sick and wounded to New Zealand determined that some of the serious and most of the long-term cases were dealt with in the civilian hospitals in New Zealand. There were relatively few battle casualties in the three limited attacks on Vella Lavella, Treasury, and Nissan islands – only 85 killed, 12 died of wounds and 189 wounded. Our medical units attended to a small number of United States wounded, and the CCS also dealt with Fijian casualties

from Bougainville, but on the other hand American units also helped in the handling of our wounded. Of the 182 wounded admitted to medical units, 6.6 per cent died, over 36 per cent were returned to their units in the forward areas from the CCS stationed at Guadalcanal, and over 31 per cent were returned to their units from the General Hospital and Convalescent Depot in New Caledonia. Some 4 per cent were graded for base duties and nearly 22 per cent, fewer than forty cases, were evacuated to New Zealand.

Types of Wounds

An analysis of the New Zealand casualties admitted to medical units shows that limb wounds were predominant, accounting for about one half of the cases, while head wounds, including the face and neck, comprised almost a quarter. Chest wounds and back and buttock wounds accounted for most of the remainder in nearly equal numbers. The abdomen was the site of main injury in only two cases admitted to medical units. It was reported from chaplains who officiated at burials that most of those killed in action were wounded in the abdomen.

After the Treasury Islands assault the CCS reported that the great majority of the cases admitted had flesh wounds, generally involving muscle. Compound fractures were present in a surprisingly small number of the cases. Of the major cases there were three of compound fractures of the skull but no abdominal cases.

The relatively high proportion of fatal wounds and the high proportion of minor wounds in the survivors was undoubtedly due to the predominance of rifle and grenade wounds. In patients admitted to medical units rifle bullets caused 40 per cent of the wounds, grenades 18 per cent, and mortar bombs 24 per cent. Shellfire and bombing were limited and gave rise to relatively few casualties.

During the whole period the CCS was at Guadalcanal the unit admitted only twenty cases of chest injury, and in nine of these grenade or mortar fragments had produced a haemothorax. All the cases made a

complete recovery, three having foreign bodies removed at the base hospital and neither clotting nor infection occurred.

Surgical Technique

Surgery was patterned on that carried out in the Middle East. The withdrawal of experienced medical officers from the Middle East, notably Major S. L. Wilson from the forward surgical team, enabled the latest knowledge of wound treatment to be available. Major Wilson, who was appointed CO of the CCS, drew up a memorandum laying down the methods of surgical treatment then in force in the Western Desert, and this was circulated to the medical units as a technical instruction.

The wounds were debrided and freely opened up. Sulphanilamide powder was then dusted over the wounded area and sterile vaseline gauze applied so as to keep the wound open. No skin sutures were used.

Head wounds were dealt with by the field surgical units of the CCS. The wounds were excised and foreign bodies and bone fragments removed if possible, and the skin sutured with provision for drainage.

Chest wounds were excised, the muscle sutured to close the chest with no stitches in the skin. A preliminary skin suture was used for sucking wounds.

Abdominal cases were explored early after resuscitation.

The few amputations were dealt with by a modified guillotine type of operation, with the usual dressings, and the stump protected by a plaster bandage covering. In the leg a seven-inch tibial stump was usual, and in the thigh amputation was carried out in the lower third.

The original type of Tobruk splint was applied for appropriate lower-limb injuries, including fractures of the femur. The Velpean arm plaster was applied from the shoulder to the knuckle for any fracture of the arm or forearm. An external plaster slab was covered by a circular plaster and a plaster Velpean bandage. Plaster was used freely both for fractures

and large wounds of the limbs and proved satisfactory, although drying was slow in the wet weather.

Sulphonamide was given by the mouth twice daily following wounding, but no special record cards were used.

Penicillin became available in New Caledonia about February 1944. It was used in a few special cases in the forward areas at that time.

The forward units were well equipped to perform surgery and extras had been provided, including suction apparatus, in both FSU and MDS, constructed from tyre pumps and Winchester bottles.

***Anaesthesia*: No special difficulties seem to have been encountered with regard to anaesthesia. Simple methods were employed and no special apparatus was available in the forward areas. The Macintosh ether apparatus became available at 4 General Hospital in 1944, but not in the forward areas, where its use should have been invaluable. The moist climate, however, prevented undue evaporation of ether. The routine anaesthetics were pentothal and ether; ethyl chloride, or a mixture, was sometimes used for induction instead of pentothal. Local and spinal anaesthesia and intravenous pentothal were freely available in all areas.**

Resuscitation

Resuscitation was carried out by the personnel of the field ambulances in tents erected alongside the operating theatre. The Field Transfusion Unit originally set up was abolished and its staff absorbed into the CCS. There was no provision for stored blood, and the small amount of whole blood used was drawn off from donors, mainly ambulance staff, on the spot. Dried plasma, obtained from the United States Forces, was used freely in the main dressing stations with satisfactory results. Few of the casualties required whole blood in addition. At Vella Lavella, for instance, 154 pints of plasma were given and 14 pints of blood. There is no record of any serious reaction

following transfusion of either blood or serum.

Experience showed that both blood and wet plasma kept badly in the hot humid atmosphere of the Solomon Islands. The high humidity, more obvious on refrigeration, softened the viscaps and permitted contamination along the moist thread of the screw-topped bottles. The stored blood had to be used within a week. Serum sent from New Zealand did not keep and was not used. These conditions determined the use of dried plasma. In regard to blood donors on the spot, due precautions were taken to exclude possible malaria. Apart from the malaria risk, it was not good practice to take blood from the forward troops, who were liable to suffer from nutritional anaemia.

The small number of serious casualties did not warrant the institution of a blood bank. If heavy casualties had been encountered, it would have been possible to send whole blood from New Zealand or New Caledonia by air to Guadalcanal and thence to the battle areas. If a blood bank had been established from blood sent from New Zealand there would have been a heavy wastage of blood as casualties were very light.

Gas Gangrene Infection

A few cases of gas gangrene were reported. Three cases were reported at Vella Lavella, one at Nissan and two at the CCS. The one at Nissan followed a crushed leg; the patient was given penicillin and several blood transfusions and amputation was carried out. The two cases seen at the CCS followed the assault on the Treasury Islands, and one died from malignant oedema infection associated with a fracture of the femur. The total of six cases with one death is a rather marked incidence considering the small number of 200 wounded. There was no gas gangrene in the cases which reached 4 General Hospital.

There is no record of any case of tetanus arising during the Pacific operation. Tetanus toxoid had been given to all the troops as a prophylactic, and an extra injection was given following injury. ATS was given when the toxoid immunisation was not complete.

Deaths

There were very few deaths in the field ambulances, the large majority of deaths occurring in the field. At Vella Lavella there were only five deaths (only one of a New Zealander), three of the deaths occurring shortly after admission. At the Treasury Islands there were only five deaths in three months, including a Japanese soldier with an abdominal injury. At Nissan there were three deaths. This gives a total of thirteen, not more than eight being New Zealanders, and amongst these were brain cases and one burn case in which whole blood would not have been of any great value. At the CCS at Guadalcanal there were only two deaths in 2500 admissions, most of whom of course were sickness cases.

Treatment of Wounded in New Caledonia

Owing to the retention of the serious cases at the CCS till they were stabilised and quite fit to travel the 1000 miles to Nouméa, the few wounded received at 4 General Hospital were the lesser wounds or cases nearing the convalescent stage. The fractures were received in plaster splints and, except for the femurs, were soon sent on to New Zealand. A few cases were evacuated from the CCS direct to New Zealand. Special cases, such as one obstructive jaundice, were sent from Noumea by air to Auckland. All patients who would not be fit for Grade A within three months were evacuated to New Zealand as soon as transport was available. (Some 55 per cent of the wounded were discharged from the hospital Grade A.)

Very little sepsis and no gas gangrene was present in wounds at the stage patients were received at New Caledonia. No deaths occurred at 4 General Hospital during the nine months at its Dumbéa site.

Specialist Medical Officers

The relatively close proximity of the force to New Zealand did not call for any extensive specialist medical services, and in any case there were only a limited number of specialists available for posting to the

force. In the event, little specialist work was done in medical units.

There were no orthopaedic surgeons, neuro-surgeons or genitourinary surgeons. Eye, ear, nose and throat specialists were on the staff of 4 General Hospital. A dentist trained in facio-maxillary work under Sir A. McIndoe at East Grinstead was attached to the hospital, and he worked at times in one of the United States Station Hospitals on New Caledonia. The American hospitals provided X-ray examinations both in New Caledonia and Guadalcanal until X-ray departments were functioning in our own units – 4 General Hospital, 2 CCS and 2 Convalescent Depot. Radiologists were trained from members of the force. Two medical officers were sent back to New Zealand for six months' training and returned in December 1943, when they were posted to 4 General Hospital and 2 CCS.

A pathologist was attached to 4 General Hospital for a period and well-trained bacteriologists were on the staff of 4 General Hospital and 2 CCS.

On the medical side, Lieutenant-Colonel Sayers, a specialist, was Consultant in Tropical Diseases.

Tours of the Solomons were carried out by an ENT specialist and a physician with special knowledge of skin conditions, advice on treatment being given to medical units and reports furnished on the problems involved.

Surgery of Civilian Type

This was carried out for acute cases in all the medical units, but the more chronic and specialised cases were dealt with at 4 General Hospital. Appendicitis was the most common condition requiring urgent attention. Accidental injuries were not unduly common. During the period of inactivity on New Caledonia sports injuries were responsible for a marked proportion of them. In the four months up to 30 September 1943 there were 126 cases of this class admitted to 4 General Hospital,

mostly football casualties.

There was more than ample hospital accommodation, equipment and staff to deal with the routine surgical work and the small number of casualties reaching the Base were easily dealt with. (The hospital at Dumbéa was built and equipped on a lavish scale not usually associated with military hospitals.) Evacuation to New Zealand was so easy that cases requiring prolonged treatment were transferred to New Zealand. Fractures of the femur, however, were retained till firm union had taken place.

The casualties from the Fijian battalions, which were all evacuated to 2 CCS and then to 4 General Hospital, were retained during 1944 until all surgery had been finalised, as the American military hospitals had by that time moved on from Fiji and the civil hospital at Suva was fully occupied.

Health of Troops

The health of troops generally throughout the New Zealand Pacific force was of a high standard and in a large measure credit was due to the efficiency of the medical services. The general health of the Army Nursing Service and WAAC was very good and the sickness rate relatively low, with no incidence of epidemic disease.

Reports indicated that troops serving in the Solomons area required to be in the best possible physical condition. In this connection it was considered advisable that men over the age of 35 years should not, unless specially required, be permitted to engage in active service in the Pacific area. The general conditions of living, and the trying climatic conditions, showed their effects most on men of the older age groups, and also tended to exaggerate any pre-service disabilities. Men over the age of 41 were returned to Base at the end of 1943.

It was very fortunate for the New Zealand troops that New Caledonia was not an endemic area for malaria. By the time 3 NZ Division was

preparing to enter the malarious zone in the Solomons it was in a position to profit by the earlier experiences of the Americans in the same area. Lessons had been learnt, at the expense of fairly high casualties, on the need for a comprehensive malaria-control organisation and for strict anti-malaria discipline. The value of atebrin had been realised and it was more readily available. Preparations for the control of malaria in New Zealand troops involved the organisation of a Malaria Control Unit, the training of medical personnel in the diagnosis and treatment of malaria, and the training of combat officers and other ranks in anti-malaria measures.

The Malaria Control Unit consisted of a headquarters and three brigade sections with a total strength of thirty-six officers and men. The headquarters consisted of two officers (the commanding officer and one entomologist) and ten men, one of whom was trained in the laboratory diagnosis of malaria. Each brigade section consisted of one officer and seven men. Two of the three section commanders were entomologists and the other was an engineer. The Malaria Control Unit had excellent preliminary training in the malarious area prior to the New Zealand troops going into it. Parts of the unit worked successively on Efate, Russell and Tulagi islands from January 1943.

Colonel Sayers's pre-war experience in the Solomon Islands was invaluable and data supplied by him was published as a booklet, *Malaria in the South Pacific*. As Consultant in Tropical Diseases Colonel Sayers was sent to Australia and New Guinea, where valuable advice was given by Australian medical officers, particularly Brigadier N. H. Fairley.

In the training of the Division in anti-malaria measures all officers attended lectures and an instructional film, and they in turn lectured the troops; medical officers received sound instruction in the diagnosis, clinical features and treatment of malaria; unit squads attended three-day courses of instruction; and a pamphlet containing advice on malaria precautions and a reprint of the administrative order on the subject was given to every officer. A trained technician was attached to each field. ambulance, and at least one medical officer in the unit was also trained

in thick film technique. Each man kept a malaria record card in his paybook.

It was decided that no short trousers would be taken into the malarious areas (the wisdom of this was later questioned as troops used to wear underpants only), repellent was issued, and atebrin commenced on embarkation. Atebrin was given regularly to all troops in the Solomons in dosage of 0.6 gramme a week and this was continued for a month after withdrawal to New Caledonia or New Zealand. Battle casualties were given 0.3 gramme per day for three days.

Colonel Sayers's pre-war experience was also helpful to the Americans. When 2 Marine Division was sent to New Zealand at the beginning of 1943 after the Guadalcanal campaign, there was great concern over the high incidence of malaria in the division. Commander J. J. Sapero, the naval tropical diseases specialist, was urgently sent for to fly to New Zealand to investigate the situation, and he arranged to take Colonel Sayers with him as adviser. While in New Zealand Colonel Sayers collected his old malaria record cards, and on his return to New Caledonia he analysed them and made the information available to the Americans. It was of considerable value to them in planning their next campaign, particularly regarding the good and bad months for campaigning from the point of view of malaria. Colonel Sayers was also frequently asked to lecture on malaria problems to United States medical officers in the Army and Navy, and was frequently called in for consultation on malaria problems. His services were recognised by the award of the Legion of Merit.

The period during which the Division was on active operations in the forward areas, which were malarious, was the ‘off season’ as far as malaria was concerned. The incidence of malaria in the Solomon Islands increases in the months of May, June, July and August, during the rainy season.

In the earlier stages of operations malaria discipline tended to be bad, but measures were taken to ensure that full control precautions

were adopted. It was obvious, of course, that malaria discipline must become bad when units were actually engaged in combat.

In the forward areas all men admitted as patients to medical units had blood films examined to detect whether or not they had become infected by malaria. This procedure was responsible for the discovery of a number of latent cases.

The standard of malaria discipline and the measures of malaria control adopted by the New Zealand force were the subject of comment by members of the United States Forces, who were impressed with their efficiency. In units with comparable service in the Vella Lavella campaign, the New Zealand rate was less than 0.1 per cent, whereas that of United States troops was up to 10 per cent.

The invaluable work undertaken by the United States engineer service in clearing the malarious areas in the New Hebrides and the Solomons was of the utmost benefit to the whole force, of which our troops formed part of an integrated team.

Fresh cases of malaria developed in the Solomons totalled only 120, while 250 fresh cases, apart from readmissions, developed in New Caledonia among troops returned there. The incidence of malaria in the field, 0.8 per cent of the force involved, was very satisfactory – infinitely better than had been hoped for. This does not mean that a much larger part of the force was not infected and many developed attacks either in New Caledonia or New Zealand after the stopping of suppressive atebrin.

Of the 110 cases developed in the Solomons an analysis of the probable place of infection showed 43 from Guadalcanal, 44 from Vella Lavella, 11 from Treasury and 12 from Nissan. The higher incidence on Vella Lavella is easily understood because on this island the most extensive and most prolonged jungle fighting took place. The low rate on Treasury appears to have been due to the small native population, limited anopheline breeding and low endemicity of malaria among the natives. (Spleen rates for the islands were: Guadalcanal 77, Vella Lavella

67, Treasury 14, Nissan 51.) A large proportion of cases occurred on the base island of Guadalcanal, where at no time were New Zealand troops engaged in combat. A Field Park Company which was on Guadalcanal all the time had the highest malaria rate in the Division, and although the unit was close to an Allied unit where mosquito breeding was not well controlled in the early stages, it was thought there was a failure of malaria discipline.

Most of the small amount of fighting took place outside the real malaria season of February to June. Nearly all camps were on good sites, and malaria control on all islands was good. Malaria discipline was rather better on Treasury and Nissan than on the other two islands. Natives were usually some distance from the camps and not great in number – they were probably of less importance as malaria carriers than the seeded troops who were present. The highest strengths of New Zealand troops on the islands were 11,000 on Guadalcanal, 5700 on Vella Lavella, 4600 on Treasury and 6600 on Nissan. The incidence was so small that it would seem to have had little direct relation to the number of troops, but rather to lapses of discipline in individual units. This would be in line with experience elsewhere.

The number of cases of malaria occurring weekly in New Caledonia after atebrin suppression ceased was: 1st week, 15; 2nd week, 32; 3rd week, 54; 4th week, 62; 5th week, 45; 6th week, 17; 7th week, 8; 8th week, 7; 9th week, 4; and then only odd cases.

Arrangements were made to keep close observation on the troops after their return from the Pacific area so that little chance would arise of any introduction of the disease to New Zealand. Pamphlets giving very full information on the disease and its treatment were distributed to every medical practitioner in New Zealand and the disease was made compulsorily notifiable. Fortunately there were not many cases and the preparations made for the treatment of cases in hospital proved unnecessary.

Skin Diseases

With the campaign against malaria being so successful, the only real medical problem was caused by skin infections, which were very prevalent in all the forward areas and were the greatest cause of hospitalisation. There were many contributory factors. Abrasions, scratches and insect bites were common in the jungle, the hot moist climate favoured bacterial growth, water was sometimes in short supply, the washing and drying of clothes was difficult and the diet was sometimes deficient. Dirty blankets accentuated the trouble. A scrub mite on Stirling Island caused eruptions on the legs and ankles, and a furry caterpillar on Nissan also caused much skin irritation and pruritis.

The great majority of the cases were minor in degree but tended to become chronic under the prevailing conditions. Most of the more severe cases were due to eczematous dermatitis, frequently associated with sweating. Tropical ulcers were not very common, only eighty-one cases being evacuated back to the CCS. The ulcers were very indolent and slow to heal. They resembled the desert sores seen in the Middle East and responded to the same treatment. Boils and septic sores were fairly common, as were prickly heat and sweat eczema of the feet. Tinea of various types was often seen, but seborrhoea was not as common as in the Middle East. Sensitivity to the local application of sulphonamides, which were available freely from the American supplies, accounted for many intractable cases.

Treatment was carried out efficiently in the forward areas, but many cases were evacuated to Guadalcanal and also to New Caledonia. There were 1930 cases hospitalised altogether from June 1943 to July 1944. In spite of the large number of cases dealt with, only 115 men were eventually evacuated to New Zealand because of skin conditions.

Venereal Disease

There was a very low incidence of venereal disease in the force, only forty-four cases of gonorrhoea and two of syphilis being recorded in fourteen months. The prior education of the troops on the subject and

adequate supplies of preventatives were undoubtedly influencing factors, but the opportunities for sexual intercourse were few and not nearly as great as in other campaign areas.

Dengue Fever

Outbreaks of dengue fever occurred in New Caledonia each autumn, the virus being transmitted by mosquitoes. Practically all cases could be traced to infection in towns and villages, while camps in bush areas were singularly free from the disease. Very few of the army personnel stationed in urban areas escaped infection. Some areas were put out of bounds temporarily. In the first outbreak which began in April 1943 the number of cases each month were: April, 120; May, 243; June, 83; July, 37. Of this total of 483 cases, 176 were admitted to 4 General Hospital and others to other medical units. In 1944 the admissions to medical units with dengue were: February, 15; March, 62; April, 94; May, 42; and June, 22.

Intestinal Infections

Both bacillary and amoebic dysentery were endemic in New Caledonia and the Solomons. Mild attacks of diarrhoea were common shortly after the arrival of the troops in New Caledonia, and, just as in Egypt, dysenteric infection was probably responsible for many of the cases. One small epidemic of gastro-enteritis was considered to be due to Sonne infection. Strict enforcement of a high standard of sanitation kept the incidence of dysentery very low. In the Solomons flies were very prevalent in the jungle, and the Japanese had a high incidence of dysentery and contaminated any areas they had occupied. Under combat conditions it proved impossible for our troops to maintain strict sanitary rules and dysentery cases developed during the fighting in the three island operations. Apart from these early cases the incidence in the Solomons was slight.

Colonel Sayers was of the opinion that in future island operations sulphaguanidine should be issued to the troops, to be taken as a

prophylactic measure during the first jungle assaults so as to obviate the initial wastage until the implementation of proper sanitary arrangements. A small number of cases of amoebic dysentery were diagnosed and treated in the hospitals.

Typhoid fever, though present in the civilian population, was not seen in our forces.

Hoo *kworm* was first noticed on Nissan in April 1944, two months after the landings, when anaemia and debility began to show up in a number of the troops. Blood counts then showed that eosinophilia was present in about 30 per cent of the troops. Treatment with 3 per cent tetrachlorethylene was carried out in the unit lines with satisfactory results. It was considered that the eosinophilia present was not wholly due to hookworm infection. An investigation at 4 General Hospital of 100 patients evacuated from Nissan showed little hookworm infection. Other varieties of worms and amoebae were found as well. It was judged that the infection was not serious and that there was no danger of the spread of the infection later to New Zealand. Colonel Sayers has expressed his opinion that hookworm would not be of major importance in any Pacific campaign.

***Yaws* was very prevalent in all the islands. In a survey of 100 Nissan islanders all showed evidence of active or quiescent tertiary lesions, while hyperkeratotic conditions of the feet were present in 93 per cent, sabre tibia in 26 per cent and active ulcers in 19 per cent. Injections were given to large numbers of patients at different periods.**

A small number of cases of infective hepatitis and a few cases of cutaneous diphtheria were recorded.

Psychoneurosis

There were a number of anxiety neurosis cases evacuated from the forward areas, largely due to the debilitating effects of the climate and living conditions, but the problem was an insignificant one. It was

recorded, however, that from the middle of December 1943 to the end of January 1944 a large proportion of cases evacuated to the CCS were suffering from psychoneurosis. In New Caledonia, as in the Middle East, numbers of psychoneurotic cases were boarded back to New Zealand as unfit for military service, before reaching the forward areas.

A study of psychoneurosis in NZEF (IP) was made by Major Adams, [1] and this showed that this disability actually decreased in incidence when troops went into the forward area, thus indicating that a limited amount of active warfare produces less affective reaction than much stagnation remote from battle. In the force 26 men per 1000 became unfit for Grade A1 duties on grounds of psychoneurosis, which was just under one-sixth of those downgraded, and 10 per 1000 required invaliding to New Zealand, which was just over one-sixth of the total thus returned to New Zealand.

A study of those down-graded and employed on base duties showed that, unless possessed of some valuable specialist qualification, psychoneurotics could rarely be employed economically and that such men became more permanently confirmed in their disabilities.

A follow-up of 139 cases seen up to July 1943 in New Caledonia was made on 20 April 1944, that is, after a further ten months' service. Of the group 43 per cent were fit for full overseas duties,

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[1] Maj J. L. Adams; Wellington; born Pahiatua, 17 Oct 1917; physician; medical officer 2 NZEF (IP) Dec 1942–Aug 1944; 3 Gen Hosp Nov 1944–Nov 1945.

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23 per cent were fit for limited duties at Base, and 34 per cent had been returned to New Zealand. The point was made that, following simple explanation of the disorder on one or two occasions in terms within the patient's comprehension, a probationary trial of full duty was warranted if the patient showed reasonable insight into his condition.

Medical Boarding

The boarding of men judged unfit for full active service began soon after the arrival of the force in New Caledonia. The same problems as had arisen in the Middle East were present. It was found necessary to down-grade many men for pre-enlistment disabilities which had been hidden or had been overlooked at the original medical examination. Accidental injuries, most frequently due to football, caused some disability, but sports probably helped to reduce the incidence of neurosis. The static and limited life of the garrison force produced a number of psychoneurotics, but their number was not abnormally high. The condition of these men was found to deteriorate when they were employed on monotonous and uncongenial duties at the Base, as also happened in the Middle East.

There were relatively few men boarded as a result of sickness, the main disability being skin disease, and only a small proportion of these cases was sent to New Zealand. Asthma cases were returned to New Zealand.

Washing and Laundry

In New Caledonia the camps were located near rivers so that the troops had facilities for bathing and also for washing their clothes. Hot showers were provided later in the different units. Some laundry work was carried out by civilians.

In the Solomons water was plentiful in Guadalcanal and Vella Lavella but it was short in the Treasuries and Nissan. Distillation of sea water had to be resorted to and washing facilities were meagre. Also it was difficult to get any washing dry in the wet and humid climate. Drying huts were provided in all units during the later part of the campaign. A portable disinfestor was sent to the forward area in November 1943 and this enabled the blankets to be cleansed regularly. Field medical units were issued with petrol-engined washing machines (domestic type), which proved most useful.

Water

Great care was necessary in the use of water in the Pacific area. Investigation showed that all streams were contaminated, and therefore all drinking water had to be efficiently treated both by filtration and chlorination. Chlorination alone was not effective as amoebic cysts required filtration for their removal. Troops in the jungle required individual water sterilising tablets and small filters. It was found that German and Italian types of filters were very satisfactory for the individual treatment of water and steps were taken to augment their supply.

Rations

During the earlier months following the arrival of the Division in New Caledonia it was noticed that some of the troops and nurses became anaemic. This anaemia was nutritional and was apparently due to an inadequate intake of essential foods particularly meat. The disinclination of New Zealand troops to eat certain American canned foods was an aggravating factor. Various methods were adopted to combat the anaemia. It responded best to yeast concentrates; liver by injection gave a slower response. Later, with the arrival of adequate and suitable rations, such as frozen meat and butter, from New Zealand, and the addition of fresh fruit and vegetables to the diet, no further cases were recorded.

It was felt that there was a need for the development of a special 'jungle ration' for active operations. The Americans had a 'K' ration and the New Zealanders a 'battle' ration, but neither was ideal and a combination of the two might have been more acceptable. What was needed was a ration easily carried, appetising whether eaten cold or hot, easily digested and requiring only a small quantity of water in its preparation. Essential constituents suggested were meat (preferably bully beef), palatable nutritious biscuits, compressed fruits, glucose sweets, salt tablets, chewing gum, coffee, tea or other beverage and dried whole-

milk powder, plus cigarettes, compressed fuel and wet-proof matches; the whole ration and individual items to be packed in waterproof, waxed packing and the meals varied; items such as meat and milk powder to be packed in small cans containing a sufficient portion for one meal. Vitamin capsules were also considered necessary and the foods fortified with vitamins.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VIII: WITHDRAWAL OF 3 NZ DIVISION FROM ACTIVE ROLE AND RETURN TO NEW ZEALAND

VIII: Withdrawal of 3 NZ Division from Active Role and Return to New Zealand

Early in April 1944, as a result of decisions made in New Zealand, the GOC NZEF (IP), Major-General Barrowclough, announced that the force was to be withdrawn from an active role and returned to New Zealand to meet the demands of essential industry in New Zealand at the following rate: 5000 by the end of June, 3500 in July, 1500 in August, 1000 in September and 1000 in October. The balance of the force remaining, approximately 6000, was to be maintained in New Caledonia on a cadre basis for all formations and units.

The medical services of NZEF (IP) were requested by Army Headquarters, New Zealand, to arrange for the medical boarding of all returning personnel in accordance with the National Medical Committee standards, and also to arrange for X-ray examination of the chest.

There was a reduction in the strengths of medical units corresponding with the reduction of the force. Divisional medical units, having lighter medical responsibilities in the reorganisation, were reduced to a larger extent than base medical units.

The withdrawal of the Division from Nissan, the Treasury Group and Guadalcanal began on 19 April and proceeded steadily. During May 8 Brigade Group was totally withdrawn from the Treasury Islands and in June most of the 3 NZ Division troops remaining on Nissan and Guadalcanal returned to New Caledonia. To cope with the medical boarding of personnel returning to New Zealand some twenty medical officers were assembled at Base Camp Reception Hospital, New Caledonia, to form full-time medical boards. During May some 5389 troops were medically boarded, of whom 221 were placed in grades other

than Grade I. In June 1545 were medically boarded and 127 were other than Grade I. Some of the latter were graded below Grade I prior to their selection for essential industry.

At General Barrowclough's request a weekly return was kept of the numbers of men returned from malarious areas who developed malarial symptoms. The total of these was not large.

The stay of the troops in New Caledonia on the way to New Zealand was sufficiently long to allow for the development of malarial symptoms with the discontinuance of suppressive atebrin. Emergency arrangements had earlier been made in New Zealand by the Health Department for the hospitalisation of 3 Division troops on a large scale, if need be, but fortunately this need did not arise.

On advice from Army Headquarters that the authorities in New Zealand were concerned about the possibility of the introduction into New Zealand of foreign species of termite, it was arranged that an entomologist from 1 Malaria Control Unit should inspect, and arrange for the training of other personnel to inspect, all wooden articles of army equipment before they were returned to New Zealand.

Established base medical units cared for all the sick of the force in New Caledonia, assisted in some cases by personnel of divisional medical units, who replaced personnel returned to New Zealand for essential industry or for furlough.

In July orders were received that the whole of the force was to return to New Zealand. Arrangements were made for the evacuation of patients as soon as transport became available, and for the winding-up of medical units and return of equipment to New Zealand. A mass medical boarding programme was undertaken, covering all the troops remaining in New Caledonia. Surplus stores and equipment obtained from United States medical supply sources were returned under reverse lease-lend arrangements. Negotiations were completed for the disposal of hospital buildings and equipment required by the United States Forces.

This included the handing-over of the hospital at Kalavere, and when this transfer took place in August (4 General Hospital also being closed at this time) the United States Medical Services undertook the hospital care of the sick among the New Zealanders until all the latter were returned to New Zealand.

The majority of the medical units were withdrawn from New Caledonia in August 1944. When the Pacific Force returned to New Zealand the decision was made to disband all units, including medical units. All personnel liable for further service were, after leave, distributed from Mangere Camp to mobilisation camps situated in their home districts, there to await embarkation in drafts to 2 NZEF in the Middle East as replacements. In this respect the release of medical officers, and also other ranks, as reinforcements for 2 NZEF was most timely and relieved a pressing need in 2 NZEF. In Egypt and Italy these members of the Medical Corps rendered a good account of themselves just as they had done in the Pacific.

IX: LESSONS OF THE PACIFIC CAMPAIGN

IX: Lessons of the Pacific Campaign

Malaria: **The value of anti-malaria units and measures was proved, as was also the importance of education and strict discipline. An entomologist and an engineer were valuable officers in the Malaria Control Unit.**

There is little fear of development of malaria on a large scale four weeks after cessation of atebrin on transfer of troops to a non-malarious area.

Sickness: **Cases of malaria and hookworm can be kept and treated in the forward areas, as can most skin cases.**

Skin disease was the most common cause of disability. To combat this there should be:

(*a* adequate and freely available shower units;
(*b* adequate laundry arrangements with drying rooms;
(*c* protective clothing;
(*d* elimination as far as possible of biting insects;
(*e* satisfactory rations with fresh food.

Most of the anxiety cases occurred at the Base, more from boredom than from action, and action was beneficial in preventing the onset of symptoms.

Hospitals: **The Base Hospital in an islands campaign should be sited near the main port and aerodrome for ease of transfer of patients from forward areas and on to the main base (New Zealand). It is a static unit and buildings should be provided early. X-ray apparatus and radiologists should go forward with the general hospital, and also the CCS. Sisters should be sent forward to the CCS and even MDS during active**

operations when conditions are favourable.

Evacuation: **Evacuation by air was very satisfactory, as was evacuation by LSTs from forward areas. Evacuation from the proximity of the enemy in the jungle was dangerous. Stretcher-bearers needed armed protection. Lives were lost by attempting evacuation too soon before an area was cleared of the enemy.**

Treatment: **For blood transfusion dry plasma was most suitable. Plaster splints proved quite satisfactory in the tropics.**

Equipment: **Field dressings had to be in waterproof containers – tin or macintosh.**

Equipment for landing operations had to be packed in boxes with rope handles for a two-man carry and placed in priorities.

Ambulances with four-wheel drive and low canopies are best.

Tents tended to rot in heavy rainfall areas. Wooden floors were necessary because of the wet conditions. Buildings were preferable and essential for any prolonged periods. Native-built huts were useful.

Prefabricated buildings would be required for: (*a*) hospitals and camp hospitals; (*b*) accommodation for sisters and nurses; (*c*) cookhouses, storehouses, bath-houses, drying rooms, recreation rooms, etc. These should be available as part of normal equipment for any force occupying any island.

Rations: **Our troops required meat and fresh foods.**

Water: **Both filtration and chlorination were necessary. The German type of filter was most satisfactory. Coral islands had a poor supply of water and distillation of sea water was carried out.**

Hygiene: **Constant efforts are required to ensure first-class sanitation, with the elimination of flies and foci of infection so as to prevent intestinal infections, especially dysentery. Shower units should**

be simple, light and mobile.

The OC of the Field Hygiene Section (Major R. M. Irwin) recommended that the equipment be supplemented and the strength of the unit considerably enlarged if it was to do an effective job. He recommended that an engineer officer and six sappers be attached, and that to detach sections to each of three brigades and leave a section at headquarters would require, in addition to the medical officer in charge, three junior non-medical officers and fifty NCOs and men, apart from ASC personnel attached.

Standard of Medical Service

The standard of the New Zealand medical service earned the respect of the American medical administrators of the South Pacific Force. After the Treasuries campaign they asked if they could attach United States naval medical officers to study the forward New Zealand medical organisation and forward surgery in the Nissan Island campaign. The force Consulting Surgeon and Consulting Physician paid a tribute to the standard of work in the operations which had taken place, and also expressed satisfaction with the standard of field sanitation and malaria control and discipline.

X: Statistics, NZEF (IP)

INCIDENCE OF WOUNDS AND DISEASE

(Strength of Force about 17,000)

Battle Casualties

	Villa Lavella	*Treasury*	*Nissan*	*Total*
Killed in action	**44**	**32**	**9**	**85**
Died of wounds	**3**	**7**	**2**	**12**
Wounded	**36**	**132**	**21**	**189**

Deaths

Accidental injuries	**34**
***Sickness*:**	
Pneumonia	**4**
Heart disease	**2**
Tuberculosis	**1**
Other	**9**
	—
	16

Admissions to Hospital (incl Fd Ambs and CCS), June 1943–July 1944

PRINCIPAL DISEASES		**INJURIES**	
Skin disease	**1930**	**Accidental injuries**	**1291**
Malaria	**398**	**Burns**	**206**
Dengue	**372**	**Hernia**	**81**
Dysentery	**281**		
Diarrhoea	**213**		
Septic sore	**547**		
Infective hepatitis	**85**		
Mental	**160**		
Nervous	**233**		
Eye	**108**		
Otitis media	**79**		

Sinusitis	**97**
Asthma	**90**
Infected tonsils	**331**
Appendicitis	**186**
Peptic conditions	**210**
Gonorrhoea	**44**
Ankylostomiasis	**166**
Gastro-enteritis	**207**
PUO	**241**
Pneumonia	**19**
Diphtheria	**5**
Influenza	**238**
TB Pulmonary	**8**
Enteric fever	**28**

Deaths in Pacific Forces

	Sick	*Accidental Injuries*
NZEF (IP): 3 Division, etc.	**16**	**34**
Fiji: B Force, etc.	**4**	**6**
Tonga: T Force	**5**	**1**
Norfolk: N Force	**1**	**2**
	—	**—**
	26	**43**

NZEF (IP) – Analysis of Wounds, 3 Division

PARTS OF BODY WOUNDED	
Abdomen	**2**
Chest	**19**
Head	**15**
Face	**8**
Neck	**2**
Eye	**1**
Ear – blast	**7**
Ear – other	**2**
Shoulder and upper arm	**16**
Elbow and forearm	**8**
Arm (undefined)	**7**
Wrist	**2**

Hand	**4**
Thigh	**16**
Knee	**9**
Legs	**12**
Foot	**8**
Back	**9**
Sacral	**3**
Buttock	**11**
General	**7**
Unknown	**21**
Unknown (remained with unit)	**23**
	—
	212

MISSILES CAUSING WOUND

GSW (presumed mostly rifle)	**68**
Grenade	**32**
Shrapnel (?mortar)	**20**
Mortar	**22**
Shell	**12**
Bomb blast	**8**
Bomb	**7**
Aerial bomb	**1**
Machine gun	**2**
Unknown	**10**
Unknown (remained with unit)	**23**
	—
	205

3 NZ Division – Hospital Class Cases Returned to New Caledonia from the Solomons

	Battle Casualties	*Other*	*Total*
Sep 1943		**9**	**9**
Oct	**12**	**36**	**48**
Nov	**51**	**89**	**140**
Dec	**3**	**133**	**136**
Jan 1944	**1**	**199**	**200**
Feb	**4**	**152**	**156**

Mar	**6**	**130**	**136**
Apr		**180**	**180**
May		**178**	**178**
	—	**—**	**—**
	77	**1106**	**1183**
Invalided to NZ	**32**	**1001**	**From all NZEF (IP) January 1943–August 1944.**
Graded for Base	**15**	**1804**	

***Note*: In Division total killed in action was 85, died of wounds 12, wounded 189 – mostly in October-November 1943.**

NZEF (IP) – Medical Boardings to 31 May 1944

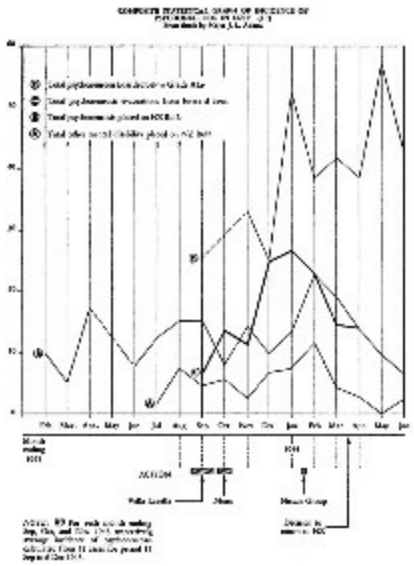
Disability	*For Return to New Zealand*	*For Base Duties*
Asthma	**85**	**48**
Arthritis	**44**	**68**
Accidental injuries	**88**	**176**
Circulatory system	**34**	**48**
Communicable disease	**2**	**3**
Digestive system	**42**	**1**
Dysentery	**2**	**1**
Ear	**27**	**120**
Enteritis	**5**	**3**
Epilepsy	**10**	**2**
Eyes	**12**	**56**
Fibrositis	**18**	**51**
Genito-urinary	**30**	**30**
Headaches	**15**	**48**
Hernia	**4**	**18**
Joints – diseases of	**69**	**131**
Mental – General	**63**	**59**
Mental – Neurosis	**167**	**208**
Nose	**17**	**35**
Pes planus and cavus	**13**	**103**
Post-concussional	**1**	**3**
Physical exhaustion	**23**	**50**
Rectal	**1**	**3**

Respiratory	**32**	**21**
Skin diseases	**115**	**250**
Surgical history	**14**	**29**
Throat		**8**
Varicose veins	**4**	**23**
Battle casualties	**32**	**15**
Malaria	**3**	
No disability		**60**
Miscellaneous	**29**	**63**
	—	**—**
	1001	**1734**

Some 60 officers are not included in the totals of those graded for base duties. Some of those graded for base duties were probably reboarded later for return to New Zealand, in which case they would also be counted in the first column.

Medical Boarding – Other Than Grade A

		Of Those for Essential Industry		*Of Those for Leave*	
		Per Cent		*Per Cent*	
Grade A2	**33**	**0.338**	**169**	**3.715**	
B	**66**	**0.676**	**113**	**2.497**	
C	**257**	**2.633**	**161**	**3.779**	
D	**3**	**0.03**	**83**	**1.834**	
	—	**——**	**——**	**——**	
	359	**3.677**	**526**	**11.825**	



COMPOSITE STATISTICAL GRAPH OF INCIDENCE OF PSYCHONEUROSIS IN NZEF (IP)

From thesis by Major J.L. Adams

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XI: MEDICAL SERVICES WITH TONGA DEFENCE FORCE

XI: Medical Services with Tonga Defence Force

In October 1942 New Zealand troops (34 Battalion from 8 Brigade) were sent to Tonga to reinforce the Tongan Defence Forces and replace American units moved up to forward areas. The battalion was accompanied by an RMO, who established a liaison with the American forces on the island. The Americans agreed to accept at their 7 Evacuation Hospital all New Zealanders who needed hospitalisation, and also made medical supplies available.

Health conditions on the island were satisfactory. Some cases of filariasis were reported to occur among the white population who lived in close proximity to the Tongans. There were occasional outbreaks of typhoid, mostly among Tongans. There was no malaria on the island, although mosquitoes were plentiful from December to March, especially in the coconut areas. Fleas were the most troublesome pests and abounded in the New Zealand camp area. Neither the Americans nor New Zealanders could find a means of keeping them in check. Fortunately they were not vectors of any disease.

Water was drawn from wells but needed to be chlorinated on account of its impurities. The New Zealanders were on American food rations. These American foods were mostly in cans and cartons and, although of adequate food value, were on account of their soft nature not at first well tolerated by the New Zealand soldier. Supplementary rations, including frozen meat, were received from New Zealand.

On 22 February 1943 and 6 March 1943 the main body of a New Zealand force arrived in Tonga to take over the defence of the island from the Americans. A force of approximately brigade strength was posted in detachments of from 20 to 200 men in scattered areas over Tonga and adjacent islands. By May 1943 there were 2662 New Zealand

officers and men in Tonga. For medical services Tonga was divided into four areas, with a medical officer in each who was responsible for the health of all troops in the area. There was a senior medical officer (Lieutenant-Colonel Fulton [1]) in charge of the medical services. The American hospital facilities continued to be utilised, although in August 1943 a detachment of twelve nursing sisters was posted from New Zealand to the staff of the hospital. A small convalescent depot was established in June 1943. In the event of hostilities a scheme of evacuation was prepared. This problem was more a transport than a medical one, as cases were to be sent direct to hospital from RAPs. An inadequate number of trained medical orderlies was at first available for the isolated RAPs.

Tongan recruits were enlisted under the New Zealand force and their medical examinations and subsequent medical attention were a responsibility of the New Zealand medical service. The question of tuberculosis in Tongan recruits was a serious one.

The degree of fitness demanded by the conditions on the island was nearly up to Grade I standard. The climate was especially hard on those with skin and sinus troubles, asthma and post-concussional headaches. Varicose veins, unless mild, did not stand up to tropical conditions. The majority of men in the ranks over 40 years of age were not suitable for service under the conditions.

Most of the New Zealand troops sent to Tonga in February and March 1943 were Grade II and a check on their medical gradings was made during August. It was found that of the 1110 Grade II men originally sent a total of 266, or nearly 25 per cent, had to be graded III for return to New Zealand. An administrative instruction issued from Army Headquarters, New Zealand, on 6 April 1943 had given an added list of disabilities rendering men unfit for garrison duty in the tropics. Most of the men regraded fell into this group and would not have been sent under the later regulations.

Actually, garrison duties in the tropics were more arduous than

similar duties in New Zealand, and the standard of fitness therefore required was much higher. The arbitrary standard laid down by Headquarters 16 Brigade Group in Tonga for Grade II troops fit to remain in Tonga demanded that a soldier should be able to march five to seven miles in a day, to traverse fairly heavy country by day and by night, and to remain out in the open for several days, possibly in the wet, and be an efficient soldier at the end of that time. These duties had to be carried out in a tropical climate with a high humidity, so that a fairly high standard of fitness was necessary. The conditions were specially severe on men over the age of 41 years, and the percentage of rejects in this group was high.

In late 1943 and early in 1944 the major portion of the New Zealand Army force was withdrawn from Tonga. For the few remaining personnel, and for the RNZAF strength, hospital arrangements were undertaken by a United States Navy hospital.

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[1] **Lt-Col J. R. H. Fulton; Dunedin; born Dunedin, 19 Aug 1900; medical practitioner; RMO 27 (MG) Bn Oct 1939–Jun 1941; medical officer 3 Gen Hosp Jun 1941–Jan 1942; SMO Tonga Feb 1942–Feb 1944; SMO Burnham Camp Apr-Aug 1944.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XII: MEDICAL SERVICES WITH NORFOLK ISLAND DEFENCE FORCE

XII: Medical Services with Norfolk Island Defence Force

In October 1942 a New Zealand defence force of 1500 troops (composed mainly of 36 Battalion and artillery units) was sent to Norfolk Island and for this force the provision of medical services was necessary. For this purpose the Army established a small hospital, which was handed over to the RNZAF in January 1944 when the army garrison was finally withdrawn.

Norfolk Island is only a small island of some 13 square miles rising to a maximum height of 1042 feet above sea level and possessing a humid climate. The initial medical survey showed the health of residents to be good. An epidemic of measles had occurred in 1942, being introduced by a soldier of the small defence detachment from Australia. Tuberculosis, chiefly pulmonary, was quite common among the native islanders.

The units composing the New Zealand defence force were scattered over all parts of the island, living by companies, platoons, sections and even as single gun crews. All detached sections or platoons were provided with a haversack of first-aid or medical equipment, and the RAPs had a greater amount of equipment. The force had only one medical officer at first and he could not visit each RAP more often than once every two or three days. To visit all the RAPs entailed over 20 miles travelling, and the visiting of detached sections would have involved at least another ten miles. A good deal of responsibility was thus imposed on medical orderlies, a number of whom had to be trained for their duties.

Other units on Norfolk Island when the New Zealanders arrived were an infantry detachment of 150 men and an aerodrome construction unit of 200 workmen from Australia, served by a United States 20-bed

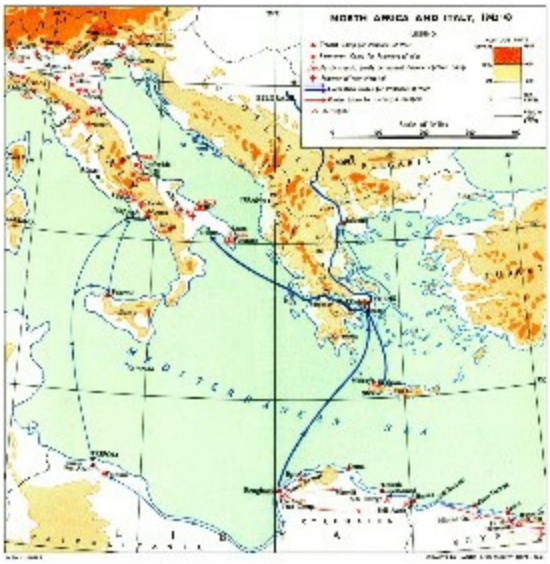
hospital unit with two medical officers. For the first two weeks after their arrival the New Zealand troops were indebted to the United States hospital unit for the supply of dressings and medicines (their own being held up in the supply ship owing to wrong order of loading), and for admitting a number of medical cases to its hospital.

The New Zealand medical detachment took possession of an old uninhabited house located almost in the centre of the island and there established a hospital. Much renovation was required to make the building serviceable. The one medical officer could undertake only emergency surgery. It was some months before equipment for a hospital operating theatre arrived from New Zealand, and as the American unit had no facilities for major surgery, such surgery had to be performed by the New Zealand medical officer at the civil hospital, employing the services of the local dentist as anaesthetist. The lot of this sole medical officer was to some extent relieved in April 1943 when another medical officer and two nursing sisters, four voluntary aids and extra NZMC personnel arrived from New Zealand to expand the hospital from 10 beds to 40 beds. By August 1943 the strength of the force had been reduced to about 800, with which the medical services were better able to cope. Further reductions were effected in December 1943 and January 1944, when the hospital unit was attached to the Air Force.

The water supply was drawn from tanks, wells and small surface streams. With the exception of rain-water (from tanks) all water had to be boiled or chlorinated before drinking, unless it had been tested and found satisfactory, and for testing purposes the very limited supply of chemicals available was soon exhausted and tardily replaced from New Zealand.

The food supply at first consisted mainly of service biscuits, tinned meat and vegetables, tinned or dried fruit and tinned milk. This was monotonous and the biscuits caused the dental detachment considerable worry. Later, variety was introduced by the despatch of frozen meat and other supplies from New Zealand, while units grew their own fresh vegetables and produced eggs from their own fowls. Attempts to buy food

in bulk from the islanders would have resulted in a serious shortage of food for the civilians.



NORTH AFRICA AND ITALY, 1942-43

In the relieving force sent to Norfolk Island in April 1943 a number of Grade II troops were included, as they were required only for garrison duty. Generally speaking, it was found that these men were unsuited for service in the warmer climate. Within six months of their arrival it was found necessary to return over 10 per cent of the relieving force of lower grade men to New Zealand on medical grounds. Lack of facilities for investigation or treatment of disabilities was a factor which necessitated the evacuation of some who might otherwise have been retained. It was felt that the medical officers in New Zealand had not conscientiously examined personnel posted for garrison duty in order to eliminate those with unsuitable disabilities. It was further suspected that commanding officers and camp staffs in New Zealand discouraged medical examinations of such personnel in order that drafts might leave the country at full strength.

Disabilities which proved most unsuitable were gastric troubles, chronic otitis media, sinusitis, rheumatic and chest conditions, asthma, bronchitis and skin troubles, especially those associated with hyperidrosis. The rheumatic cases were the most common and were the

greatest single worry as there were no facilities for their treatment in the way of physiotherapy and massage.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XIII: MEDICAL SERVICES WITH FIJI DEFENCE FORCE

XIII: Medical Services with Fiji Defence Force

When the bulk of the troops of 8 Brigade Group returned to New Zealand in July and August 1942 to form 3 NZ Division, there remained in Fiji at the request of the United States Forces some 1000 New Zealanders, mainly in anti-aircraft and commando units. The old nomenclature of 8 Brigade and 14 Brigade was now obsolete and this force became known as Fiji Section, 2 NZEF. With it in Fiji there were units of the RNZAF with a strength of approximately 1000 and a Fijian force which varied in strength from 2000 to 4000. Together, these forces constituted the Fiji Defence Force.

The medical services for the New Zealand troops and Air Force were provided by four medical officers. Owing to the scattered nature of the force, split as it was into eastern and western areas, its demands taxed their capacities. In March 1943 there was an increase in the medical officers and in May 1943 the RNZAF units became independent as regards medical services. Additional postings during 1943 provided for a Senior Medical Officer and six RMOs by the end of the year. By this time, however, the New Zealanders also had the Fijian troops under command, and although they were served by a Fijian medical officer, an Indian medical officer and native medical practitioners, this entailed added responsibilities. The Fijians were treated in civil hospitals.

Arrangements were made for New Zealanders to be admitted to American hospitals for treatment and this happy arrangement was continued until November 1944. The American hospitals were No. 71 (formerly Tamavua), No. 142 at Sambeto, and No. 18 (Johns Hopkins specialist hospital). The American units had ample capacity to cater for the New Zealanders and their service was excellent. The American custom of multiple investigations caused the average hospital stay to be prolonged by New Zealand standards. Medical supplies were drawn from

the American medical supply depot.

The health of the New Zealand personnel generally was good, with a freedom from epidemics, but due to cutaneous infections, boils, septic sores and ringworm, the average non-effective strengths were considerably higher than in New Zealand. Gastro-enteritis and upper respiratory tract infections were also a common cause of hospitalisation. It was felt that the men took inadequate steps to prevent and treat early insect bites and abrasions, which appeared to be the starting point of many skin infections.

The Army and Air Force drew New Zealand rations through the American authorities. The diet consisted of meat, potatoes, bread and flour products, with a certain and variable amount of fruit and vegetables. It was inferior in quality and food values to the American rations, against which however the New Zealanders had a prejudice. The development of unit vegetable gardens and the issue of fruit juices helped to build up the diet to a more satisfactory standard, although at times there were deficiencies.

It was necessary to increase the supervision of hygiene and sanitation in the numerous widely dispersed camps of 2 NZEF and Fiji Military Force units, and reinforcements of a hygiene officer and NCOs were sent from New Zealand in August 1943. The problem of keeping mosquitoes under control was an important one in itself, apart from checking on water supplies, septic tanks, drainage, kitchens and food storage.

An optician unit was sent to Fiji in July 1943, and its services were availed of by Americans as well as New Zealanders.

The nucleus of a stretcher-bearer company was sent from New Zealand in December 1942 to train and organise a modified field ambulance for the Fiji Medical Corps. By the end of 1943 the officers and NCOs had trained stretcher-bearers, who were competent at bush evacuation and first aid, nursing orderlies, who were considered capable

of acting as RAP orderlies, and a transport section.

Some of the Fijian battalions went forward to the Solomon Islands in a combatant role. On 12 March 1944 a section of Fijians of the Bearer Company went with a battalion to Bougainville, returning to Fiji on 4 August. They accompanied patrols in action or acted as extra regimental stretcher-bearers, but they could not be fully used in a battalion area because they were not armed, and all evacuation behind battalion areas was carried out by United States medical services who did not require assistance.

In February 1944, when a Fijian battalion returned from the Solomon Islands and brought with it malaria cases, their treatment became a responsibility of the Bearer Company, which relinquished to some extent its field status and built a small hospital at Tamavua. The number of malaria cases eventually led to 142 US Hospital admitting some of the cases as they were beyond the combined resources of the Bearer Company and the civil hospital. When the departure of this American hospital was imminent, the Bearer Company established a 50-bed holding hospital at Nausimu on the former site of 18 US Hospital.

This emergency hospital was taken over by the civilian authorities at the end of 1944.

Apart from epidemics of dengue fever, a disease which affected to some extent at different times the New Zealand forces on the various Pacific islands, the health of the troops in Fiji remained reasonably good. Early in 1945 there were fears that trachoma, which was endemic in Fiji, was becoming widespread among New Zealand troops. Opthalmologists were immediately sent from New Zealand to investigate the position. It was proved that cases which had been diagnosed as trachoma by a local specialist were really those of mild papillary hypertrophy, and conjunctivitis or catarrhal condition of the eye, but of mild degree and of benign form.

Nevertheless, an opthalmologist was appointed from New Zealand to

supervise the eye treatment of all servicemen in Fiji. In addition, measures were taken to instal hot showers and to increase supervision of laundry, and a recommendation was made that the maximum period of service for army personnel in Fiji be defined.

(In this latter connection a survey of 940 troops made in September 1943 showed that the sickness rate for troops in their first twelve months of service was relatively light, that in the second twelve months it became relatively high, and that furlough in New Zealand after fifteen months' service did not reduce sickness to a rate comparable with that for the first twelve months.)

With the departure of the last of the American hospitals from Fiji at the end of 1944, New Zealand hospital cases were admitted either to the RNZAF station hospital at Lauthala Bay, where there were fourteen beds with an NZANS sister in charge, or to the civil Colonial War Memorial Hospital. The superintendent of the latter hospital was most co-operative and agreed to the SMO of the New Zealand force performing any surgery necessary on New Zealand patients.

Medical officers remained in Fiji after the return of the bulk of New Zealand troops in 1945 and undertook the medical boardings of the Fiji Military Forces at their demobilisation, and they themselves finally returned to New Zealand in October and November 1945.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

PART II — NEW ZEALAND PRESONERS OF WAR IN EUROPE

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 1 — GREECE, APRIL – NOVEMBER 1941

CHAPTER 1
Greece, April – November 1941

I: Hospitals at Corinth and Kalamata

THE evacuation of Greece in April 1941 resulted in some 1850 New Zealanders being left behind as prisoners of war. Some of these were sick and wounded. Included among the prisoners of war were six New Zealand medical officers and 92 New Zealand medical orderlies, the majority being from that part of the staff of 1 NZ General Hospital which was detached to form a convalescent hospital, whose staff and 400 patients were apparently more or less forgotten in the withdrawal.

Prisoner-of-War Hospital, Corinth

This hospital was opened at the instigation of a wizened old fighter of over 70 years of age, Miss Ariadne Massautti. She persuaded a German medical officer of the paratroop battalion which had landed at the Corinth Canal on 26 April 1941 to find out if any British doctors had been captured during the German blitz on Corinth. She also persuaded this same medical officer to drive to the eastern end of the Corinth Canal and bring the four captured New Zealand doctors – Captains Slater, [1] Foreman [2] and J. Borrie [3] of 1 NZ General Hospital and Captain Neale [4] of 4 Field Ambulance – to Corinth. She had them placed by the German officer in the Ionian Palace hotel, which she had previously commandeered in the name of the Greek Red Cross for wounded prisoners of war. German units sought to occupy it. She valiantly fought back, and quickly had prisoner-of-war patients moved in from Greek hospitals where they had been collected.

From 27 April (one day after their capture) until 10 May 1941, these medical officers ran this hospital of 120 beds. After interviewing the German commandant of Corinth on 30 April, Captain

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medical practitioner; medical officer 4 Fd Amb Oct 1939-Jan 1941; 1 Gen Hosp Jan-Apr 1941; p.w. Apr 1941; repatriated Jun 1944.

[2] Capt H. M. Foreman, MBE; Auckland; born Auckland, 1 Dec 1913; medical practitioner; medical officer 1 Gen Hosp Feb 1940-Apr 1941; p.w. Apr 1941.

[3] Capt J. Borrie, MBE; Dunedin; born Port Chalmers, 22 Jan 1915; medical practitioner; medical officer 1 Gen Hosp Feb-Apr 1941; p.w. Apr 1941.

[4] Capt H. C. Neale; Wellington; born Nelson, 20 Aug 1914; medical practitioner; medical officer 4 Fd Amb Sep 1939-Apr 1941; p.w. Apr 1941.

Slater, who was commanding officer, was able to have three nursing orderlies transferred from the Corinth prisoner-of-war camp to assist in the work of the hospital. (One other New Zealand medical orderly, Private Savery, [1] had on his own initiative taken charge of some thirty wounded in another hotel – the Grande Bretagne. For three days he carried on single-handed and in fact had no idea that any other prisoner-of-war medical organisation existed in Corinth.)

There were few beds in the Ionian Palace hotel and sanitary arrangements were poor and medical arrangements very meagre. Most patients slept on mattresses on the floor. The only medical supplies available were those which Miss Massautti and her friends had been able to get from the local Greek hospital. The medical officers were able to do dressings and simple surgical procedures, but later, cases requiring major surgery were transferred to the local Greek hospital or to a German military hospital. Of the 122 British, Australian and New Zealand patients in the Ionian Palace hotel, the majority (80) had gunshot wounds, almost all infected, one with gas gangrene; dysentery and pneumonia were the most serious medical conditions. There were remarkably few deaths (only four) in the two weeks in this hotel, despite

the appalling lack of medical and sanitary facilities and the small amount of food. Some Greek women did all in their power to provide for the deficiencies, but the Germans did practically nothing to help.

Kalamata Hospital

At Kalamata Major G. H. Thomson, NZMC, [2] RMO 4 Field Regiment, had gathered around him a group of British medical officers and had opened a hospital in a hall.

On 16 May this group was transported in German ambulances to Piraeus (Athens), where the Germans were concentrating all wounded prisoners of war in a large American orphanage building, only just completed, in the suburb of Kokkinia.

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[1] Pte W. C. T. Savery; Wellington; born England, 7 Jan 1900; waterside worker; p.w. 29 Apr 1941; repatriated Oct 1943.

[2] Maj G. H. Thomson, OBE, ED; New Plymouth; born Dunedin, 5 Mar 1892; obstetrician; 1 NZEF 1914–16 (Gnr 4 How Bty); RMO 4 Fd Regt Sep 1939-Apr 1941; p.w. 28 Apr 1941; repatriated Oct 1943.

II: Kokkinia Prisoner-of-War Hospital

The hospital, situated high above Piraeus on the outskirts of Kokkinia, opened on 9 May 1941, being at first staffed by the remnant of 5 Australian Hospital, 6 officers and 160 men. They and their patients were moved from their old hospital site at Ekali, Athens. The senior administrative officer recognised by the Germans was Major Brooke-Moore, AAMC, and with him was Captain E. V. Barling, AAMC, as Adjutant. They organised and ran the hospital; and to them great credit is due for having accomplished a very difficult task at a time when all personnel, be they English, Australian or New Zealand, were naturally finding it difficult to settle down to a new and strange way of life in

captivity, under new officers. In all their dealings with the Germans the OC and Adjutant were greatly helped by Lance-Corporal Lewis, AAMC, who, having previously lived in Munich for ten years, had a first-class knowledge of German and an acute understanding of the German mentality. They were fortunate in being so well served.

On 10 May 1941, 75 patients and 24 medical and dental staff were brought in a convoy from Corinth, and on 13 May they were joined by a remnant of 26 British General Hospital from Kifisia. The other officers and men from the staff of that hospital, after all their magnificent work at Kifisia, were transported to the overcrowded prisoner-of-war camp in Corinth, where there were also thirty New Zealand medical orderlies from the staff of the convalescent hospital at Voula, for whose transfer to Kokkinia Captain Slater made numerous unavailing requests to the German medical authorities.

Then followed the battle for Crete, from which wounded prisoners were admitted to the hospital from 25 May until 6 June, arriving by air or sea transport. Because of a great increase in casualties a walking wounded and convalescent hospital was opened on 29 May, half a mile away, as an annexe of the main hospital. Later, on 6 June, a subsidiary hospital, which functioned for one month, was opened in the Polytechnic Building, Athens, Major Thomson being senior British medical officer.

The admissions to the hospital at Kokkinia by early June totalled over 2000, made up as follows:

From 5 Australian General Hospital, Ekali	91
From 26 British General Hospital, Kifisia	290
From Corinth and Kalamata	260
From Crete	1397
	2038

Thus the mixed hospital staff at Kokkinia performed a most valuable function in caring for large numbers of sick and wounded prisoners from

their own forces. At the peak after the battle for Crete there were 850 occupied beds in the main hospital.

From Crete came captured New Zealand medical officers. Employment was quickly found for them.

Major S. de Clive Lowe [1] became an anaesthetist at the Kokkinia

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[1] Maj S. G. de Clive Lowe, m.i.d.; England; born NZ 27 Feb 1904; medical practitioner; medical officer 5 Fd Amb Mar-May 1941; p.w. May 1941.

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hospital; Captain Ballantyne [1] was put in charge of a ward of sixty patients; Captains Moody [2] and Longmore [3] were in charge of the 'convalescent' camp; Captains Stewart [4] and Stevenson-Wright [5] went along with Major Thomson and Captain Slater to open up an additional hospital at the Polytechnic Institute in Athens on 6 June.

When the Polytechnic hospital closed on 14 July 1941 the staff were brought to the 'convalescent' camp at Kokkinia, and those not absorbed into the hospital life there were soon transported by sea to Salonika, thence by rail to Germany.

The Kokkinia hospital was under the direct command of a young German captain, who, from the start, ran it on strict German military lines – with breakfast for all at 6.30 a.m., lunch at midday, tea at 6 p.m. There was a half-day free on Sunday for the staff, if they had worked well. Daily check parades for all were soon replaced by twice-weekly check parades for orderlies and patients, the former parading, the latter remaining in their beds.

The Kokkinia hospital was established in a very large ferroconcrete building of five blocks, all except one of four storeys. Large courtyards separated the blocks and no dwellings were within 300 yards of the hospital. The smaller block of three storeys was used for administration and special services, including operating theatres, and the kitchen. The

other four blocks all housed patients in 60-bed wards. Male orderlies staffed the wards. The routine was strict and full records were kept both by the medical officers and the charge orderlies.

The operating theatres were well equipped from 5 Australian General Hospital and adequate British supplies of linen, sutures and anaesthetics were available. The Australians equipped and staffed a laboratory capable of carrying out all routine examinations. An X-ray plant was also installed from 5 Australian General Hospital, but the portable X-ray machine was commandeered by the Germans and fracture cases could not be screened in bed. A reasonable supply of films was provided by the Germans.

An excellent dental service was provided by the New Zealand Mobile Dental Unit, which recovered its equipment from Voula camp. Dentures were made and fractured jaws were splinted.

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[1] Capt D. A. Ballantyne, m.i.d.; Hastings; born New Guinea, 1 Sep 1911; medical practitioner; medical officer 6 Fd Amb May 1940-May 1941; p.w. May 1941.

[2] Capt R. F. Moody, MBE, m.i.d.; Auckland; born Auckland, 15 Oct 1915; medical practitioner; medical officer 5 Fd Amb Dec 1939-May 1941; p.w. 26 May 1941.

[3] Maj L. H. V. Longmore; Christchurch; born NZ 18 Nov 1909; medical practitioner; RMO 22 Bn Dec 1940-May 1941; p.w. 21 May 1941; repatriated Nov 1943; medical officer 1 Gen Hosp Apr-Oct 1944; Prisoner-of-War Reception Group (UK) Oct 1944-Dec 1945.

[4] Capt R. S. Stewart; Gore; born NZ 17 Mar 1906; medical practitioner; RMO 23 Bn May 1940-May 1941; p.w. 23 May 1941.

[5] Capt E. Stevenson-Wright, MBE; Wellington; born Dannevirke, 16 Feb 1909; medical practitioner; medical officer 1 Gen Hosp

Mar 1940-Feb 1941; RMO 2 Div Cav Mar-May 1941; p.w. May 1941.

Medical supplies were available from Australian and British stores. There were some shortages, notably of sulphonamides and dressings, and the German plaster was of poor quality. Surgical instruments and syringes were in short supply.

Discharges

In the five months at Kokkinia 68 patients died, while 2334 were discharged as cured or relieved and 109 remained invalids. All parties going to Germany had medical personnel attached and carried emergency kits with dressings. The larger parties had medical officers attached as well.

Food

The German attitude to the British was reasonable, except as far as food was concerned. From the start rations were low, approximately 1500–1800 calories a day; and try as they might, the British authorities could never get the ration increased.

The daily ration consisted of three ounces of bread, lentils, broad beans, a little meat, dried ling, sugar, and dry mint for tea. The fat ration was a Dutch liquid cooking margarine. Hard biscuits, lard, rice, tomatoes and cucumbers were also included in the menu.

Everybody shared alike in the rations, except that the very ill had a little supplementary diet when available, for example, when for a time it was possible to buy milk from the Greeks. A canteen, stocked mainly with fruit purchased by the Greek Red Cross, was opened at the end of May. Through the good graces of the Greek Red Cross, and from local traders, milk, fresh fruit, onions, and even eggs could be bought. These were cooked in the wards or rooms on primus stoves, the property of 5 Australian General Hospital. Kerosene supplies were fortunately

maintained throughout the period the hospital functioned. Ever abundant olive oil was used as the frying medium. By the end of September some forty British Red Cross food parcels had been delivered, but parcels were slow in reaching Greece in any quantity and most prisoners received no issue until they reached Germany.

The Greek Red Cross, ably organised by Mme Zannas, paid weekly visits to the hospital delivering mail and special articles required by prisoners, including a piano, and in all ways served to boost morale, as indeed did all the Greek people during the time of captivity in Greece.

Clothing

The basis of the clothing store was the stock of 5 Australian General Hospital. This was augmented by drill shirts, jackets and trousers from 26 British General Hospital. Another unexpected and welcome find was an enormous stock of washed British drill shirts and shorts which had been left dirty by the evacuating British in a large steam laundry in Athens. During the last days of freedom the Greek staff had systematically cleaned it. Some Greek civilian bedding was in the building when it was taken over as a prisoner-of-war hospital. The Greek Red Cross donated 400 pairs of socks and the Germans procured a number of Greek army boots. From this store all patients who came from Crete were able to get a small issue of clothing, and all except a dozen obtained boots. Winter wear was only to be found in Germany, and some whose entry to Germany was delayed until March 1942 spent a chilly winter at Salonika in light summer clothing.

Patients Treated and Types of Injury - Statistics

The patients in Kokkinia came from four chief sources:

1. **Those too sick to be evacuated before the Germans came, who were in ? Australian and 26 British General Hospitals.**
2. **Those from south of Athens, sent to the hospital by the Germans by ambulance after capture.**
3. **Those from Crete, who were flown over in German transport**

planes.

4. Staffs, etc., becoming ill in the hospital itself.

Classes 2 and 3 were really very ill indeed, very hungry and thirsty and ill clad. Practically all their wounds were suppurating. They had had some preliminary treatment at the time of wounding.

Severe injuries of all kinds were dealt with, but most of the severe chest and abdominal cases did not survive to reach Athens. There were 13 deaths in 88 head cases. Some 349 compound fractures were treated, with 11 deaths and 27 amputations. Plaster splints were applied and sulphonamides administered. Lack of a portable X-ray machine led to deformity in many fractures of the femur, for which both Thomas and Braun splints were used with Kirschner wire traction. Secondary haemorrhage necessitated several amputations. Of 132 cases with joint injuries, 9 died and 9 had amputation performed.

Blood transfusions were given for haemorrhage and for secondary anaemia, orderlies being used as donors. Nerve injuries were not explored. Some aneurysms were operated on and excised.

Of 613 patients with major simple wounds 15 died, 4 from gas gangrene, 6 from sepsis, and 3 from secondary haemorrhage.

Bone grafting was carried out for some of the jaw injuries. Sixteen eyes had to be removed, and vulcanite artificial eyes were made by the dental department. Two cases of tetanus were recorded, one a Maori, and both died. Both had had prophylactic tetanus toxoid but not anti-tetanus serum after wounding.

Sixteen cases of gas gangrene were recorded and six died.

There were eight deaths from disease among 800 cases, 300 of which had some form of infectious disease.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: HOSPITALS AT CORINTH AND KALAMATA

I: Hospitals at Corinth and Kalamata

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

II: KOKKINIA PRISONER-OF-WAR HOSPITAL

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into the hospital life there were soon transported by sea to Salonika, thence by rail to Germany.

The Kokkinia hospital was under the direct command of a young German captain, who, from the start, ran it on strict German military lines – with breakfast for all at 6.30 a.m., lunch at midday, tea at 6 p.m. There was a half-day free on Sunday for the staff, if they had worked well. Daily check parades for all were soon replaced by twice-weekly check parades for orderlies and patients, the former parading, the latter remaining in their beds.

The Kokkinia hospital was established in a very large ferroconcrete building of five blocks, all except one of four storeys. Large courtyards separated the blocks and no dwellings were within 300 yards of the hospital. The smaller block of three storeys was used for administration and special services, including operating theatres, and the kitchen. The other four blocks all housed patients in 60-bed wards. Male orderlies staffed the wards. The routine was strict and full records were kept both by the medical officers and the charge orderlies.

The operating theatres were well equipped from 5 Australian General Hospital and adequate British supplies of linen, sutures and anaesthetics were available. The Australians equipped and staffed a laboratory capable of carrying out all routine examinations. An X-ray plant was also installed from 5 Australian General Hospital, but the portable X-ray machine was commandeered by the Germans and fracture cases could not be screened in bed. A reasonable supply of films was provided by the Germans.

An excellent dental service was provided by the New Zealand Mobile Dental Unit, which recovered its equipment from Voula camp. Dentures were made and fractured jaws were splinted.

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[1] Capt D. A. Ballantyne, m.i.d.; Hastings; born New Guinea, 1 Sep 1911; medical practitioner; medical officer 6 Fd Amb May 1940-May 1941; p.w. May 1941.

[2] **Capt R. F. Moody, MBE, m.i.d.; Auckland; born Auckland, 15 Oct 1915; medical practitioner; medical officer 5 Fd Amb Dec 1939-May 1941; p.w. 26 May 1941.**

[3] **Maj L. H. V. Longmore; Christchurch; born NZ 18 Nov 1909; medical practitioner; RMO 22 Bn Dec 1940-May 1941; p.w. 21 May 1941; repatriated Nov 1943; medical officer 1 Gen Hosp Apr-Oct 1944; Prisoner-of-War Reception Group (UK) Oct 1944-Dec 1945.**

[4] **Capt R. S. Stewart; Gore; born NZ 17 Mar 1906; medical practitioner; RMO 23 Bn May 1940-May 1941; p.w. 23 May 1941.**

[5] **Capt E. Stevenson-Wright, MBE; Wellington; born Dannevirke, 16 Feb 1909; medical practitioner; medical officer 1 Gen Hosp Mar 1940-Feb 1941; RMO 2 Div Cav Mar-May 1941; p.w. May 1941.**

Medical supplies were available from Australian and British stores. There were some shortages, notably of sulphonamides and dressings, and the German plaster was of poor quality. Surgical instruments and syringes were in short supply.

Discharges

In the five months at Kokkinia 68 patients died, while 2334 were discharged as cured or relieved and 109 remained invalids. All parties going to Germany had medical personnel attached and carried emergency kits with dressings. The larger parties had medical officers attached as well.

Food

The German attitude to the British was reasonable, except as far as food was concerned. From the start rations were low, approximately 1500–1800 calories a day; and try as they might, the British authorities

could never get the ration increased.

The daily ration consisted of three ounces of bread, lentils, broad beans, a little meat, dried ling, sugar, and dry mint for tea. The fat ration was a Dutch liquid cooking margarine. Hard biscuits, lard, rice, tomatoes and cucumbers were also included in the menu.

Everybody shared alike in the rations, except that the very ill had a little supplementary diet when available, for example, when for a time it was possible to buy milk from the Greeks. A canteen, stocked mainly with fruit purchased by the Greek Red Cross, was opened at the end of May. Through the good graces of the Greek Red Cross, and from local traders, milk, fresh fruit, onions, and even eggs could be bought. These were cooked in the wards or rooms on primus stoves, the property of 5 Australian General Hospital. Kerosene supplies were fortunately maintained throughout the period the hospital functioned. Ever abundant olive oil was used as the frying medium. By the end of September some forty British Red Cross food parcels had been delivered, but parcels were slow in reaching Greece in any quantity and most prisoners received no issue until they reached Germany.

The Greek Red Cross, ably organised by Mme Zannas, paid weekly visits to the hospital delivering mail and special articles required by prisoners, including a piano, and in all ways served to boost morale, as indeed did all the Greek people during the time of captivity in Greece.

Clothing

The basis of the clothing store was the stock of 5 Australian General Hospital. This was augmented by drill shirts, jackets and trousers from 26 British General Hospital. Another unexpected and welcome find was an enormous stock of washed British drill shirts and shorts which had been left dirty by the evacuating British in a large steam laundry in Athens. During the last days of freedom the Greek staff had systematically cleaned it. Some Greek civilian bedding was in the building when it was taken over as a prisoner-of-war hospital. The Greek

Red Cross donated 400 pairs of socks and the Germans procured a number of Greek army boots. From this store all patients who came from Crete were able to get a small issue of clothing, and all except a dozen obtained boots. Winter wear was only to be found in Germany, and some whose entry to Germany was delayed until March 1942 spent a chilly winter at Salonika in light summer clothing.

Patients Treated and Types of Injury - Statistics

The patients in Kokkinia came from four chief sources:

1. **Those too sick to be evacuated before the Germans came, who were in ? Australian and 26 British General Hospitals.**
2. **Those from south of Athens, sent to the hospital by the Germans by ambulance after capture.**
3. **Those from Crete, who were flown over in German transport planes.**
4. **Staffs, etc., becoming ill in the hospital itself.**

Classes 2 and 3 were really very ill indeed, very hungry and thirsty and ill clad. Practically all their wounds were suppurating. They had had some preliminary treatment at the time of wounding.

Severe injuries of all kinds were dealt with, but most of the severe chest and abdominal cases did not survive to reach Athens. There were 13 deaths in 88 head cases. Some 349 compound fractures were treated, with 11 deaths and 27 amputations. Plaster splints were applied and sulphonamides administered. Lack of a portable X-ray machine led to deformity in many fractures of the femur, for which both Thomas and Braun splints were used with Kirschner wire traction. Secondary haemorrhage necessitated several amputations. Of 132 cases with joint injuries, 9 died and 9 had amputation performed.

Blood transfusions were given for haemorrhage and for secondary anaemia, orderlies being used as donors. Nerve injuries were not explored. Some aneurysms were operated on and excised.

Of 613 patients with major simple wounds 15 died, 4 from gas

gangrene, 6 from sepsis, and 3 from secondary haemorrhage.

Bone grafting was carried out for some of the jaw injuries. Sixteen eyes had to be removed, and vulcanite artificial eyes were made by the dental department. Two cases of tetanus were recorded, one a Maori, and both died. Both had had prophylactic tetanus toxoid but not anti-tetanus serum after wounding.

Sixteen cases of gas gangrene were recorded and six died.

There were eight deaths from disease among 800 cases, 300 of which had some form of infectious disease.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 2 — CRETE, MAY - SEPTEMBER 1941 — I: GALATAS CAMP

CHAPTER 2
Crete, May – September 1941

I: Galatas Camp

WHEN Crete was captured at the end of May 1941 many thousand British, Australian, New Zealand and Greek prisoners were taken by the Germans. The New Zealanders numbered almost 2200. Included in the number were eight New Zealand medical officers and 175 New Zealand medical orderlies, some of whom had volunteered to remain behind with the wounded, and some of whom could not be evacuated from the island by the time of the last embarkation. Most of the wounded were transported to Greece by air from Maleme in German troop-carriers, and with them went some of the medical personnel to join their colleagues at the prisoner-of-war hospital at Kokkinia, near Piraeus. The main British prisoner-of-war camp was established near Galatas and Canea, on an area previously occupied by 7 British General Hospital. Here about 7000 British prisoners were herded into a small area; of these about 1500 were New Zealanders. There were 2000 to 3000 Greeks in an adjoining area. There was no water supply and rations were very short, and at first there were no sanitation arrangements. The men possessed only what they were wearing and most slept in the open, without greatcoat or blanket.

The medical personnel and wounded in the Sfakia area were marched back across the island on 1 June, were herded together overnight in a field without food or water and were then taken on to one of the prison camps. Some of the medical orderlies were taken by truck to Maleme, where there were many British wounded awaiting transport to Greece. On the evening of 2 June the wounded still remaining were taken to Maleme village and given a meal. The orderlies cleared out several shops and bedded down the wounded in them, mainly on the floor, though some had stretchers. Here the wounded remained until 12 June, when they were transferred to the camp hospital in the main prisoner-of-war camp near Galatas.

At the camp Padre Hurst [1] and Staff-Sergeant Sinel [2] of 1 General

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[1] Very Rev. W. E. W. Hurst, m.i.d.; Dean of Dunedin; born Moira, Northern Ireland, 17 May 1912; p.w. 24 May 1941.

[2] S-Sgt E. F. Sinel; Kaitaia; born Auckland, 22 May 1906; research chemist; p.w. 21 May 1941.

Hospital had set about establishing an RAP soon after capture as there was no medical officer remaining in the area. A medical inspection room was set up in a marquee and medicines, dressings and surgical equipment were collected from the blasted tents that had formerly been wards of 7 General Hospital. Up to 700 men were treated daily, both patients and staff increasing as prisoners of war came across the island from Sfakia. Another marquee was erected and patients accommodated on hospital beds and mattresses on the ground. The incidence of infected wounds and abrasions was high owing to the prevalence of dust and flies in the camp area, and dysentery soon became rampant.

When Lieutenant-Colonel Bull, NZMC, [1] reached this camp on 8 June from the dressing station at Neon Khorion where he was captured, he set about supplementing the medical arrangements. On 9 June a 200-bed camp reception hospital was set up, with a staff of some 8 British medical officers, 4 NCOs and 89 other ranks. Accommodation was provided from salvaged hospital marquees, beds, mattresses, etc., but blankets and equipment were short and remained so. After a week a surgical ward, with an improvised operating theatre and sleeping accommodation for medical officers, was established in a large brick and concrete building on the hill, previously the officers' mess of 7 General Hospital. A hospital cookhouse was established in another building. Two medical officers and additional orderlies were detailed to assist at the RAP, which continued to function well.

As senior medical officer Lieutenant-Colonel Bull managed to arrange with the German camp commandant for implements for digging

latrines, etc., and more facilities for cooking. Overcrowding continued, however, until the onset of cases of poliomyelitis and diphtheria convinced the Germans of its danger. The bed state of the Camp Reception Hospital rose to about 220 by 21 June, mostly dysentery and malaria cases. There was a small epidemic of fifteen cases of poliomyelitis, of which only the first case died. Drugs and dressings were desperately short. The rations supplied amounted to approximately 1000 calories daily only.

The German camp commandant then asked Colonel Bull to undertake the medical organisation of the other prisoner-of-war camps at Skines, Maleme and Galatas prison. At all three the conditions were equally bad – lack of accommodation and clothing, poor water supply and sanitation, short rations, inadequate cooking facilities, poorly equipped RAPs. Improvements were effected, drugs

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[1] Brig W. H. B. Bull, CBE, ED; Wellington; born Napier, 19 May 1897; surgeon; CO 6 Fd Amb Feb 1940–May 1941; ADMS NZ Div May 1941; p.w. 28 May 1941; DGMS, Army HQ.

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and dressings supplied from a German medical depot and TAB injections given. The camp at Skines was wholly evacuated early in July, all prisoners being sent to Greece.

At the Camp Reception Hospital vegetables and fruit were obtained from Canea for the patients and staff. Rations supplied were short, eight to ten men sharing one tin of bully beef, but a camp bakery was working, though the quality of the potato flour supplied was very poor indeed. Two groups of British sick and wounded, numbering about 100 each, were transferred to the Canea hospital from Suda Bay and Kalivia. With them were captured medical staffs, who helped greatly to improve the general running of the hospital. Lieutenant-Colonel L. E. Le Soeuf, AAMC, took over the command of the hospital and Lieutenant-Colonel Bull remained SBMO, Crete.

On 15 July some 1900 prisoners, together with 85 sick and medical officers and orderlies, were shipped from Canea to Salonika. Then on 20 July another 2000 were moved to Suda Bay for embarkation to Greece. The medical officers found the ship of 2000 tons very dirty and lacking water and sanitation. They persuaded the Germans to embark only 1400. On 25 July a further 900 British and 300 Greeks were taken to Greece.

By the end of July showers had been installed in the prisoner-of-war camp and nearby hospital – a great boon, though very little soap and few towels were available. Sanitation was much better, flies generally fewer, but there was no improvement in rations, cooking, clothing, drugs and dressings. Dysentery was still prevalent, malaria increasing, and some cases of catarrhal jaundice had occurred. All prisoners of war were becoming 'pot-bellied' and were obviously suffering from malnutrition. Transfers to Greece had reduced the overcrowding.

August was on the whole a quiet month. Jaundice cases rose to 50, dysentery persisted, and the hospital bed state was far too high for either comfort or peace of mind. Drugs, rations, etc., were very short, but a few 'amenities' such as razors, blades and soap were procured. Cricket matches in the camp and daily swimming helped to allay the boredom of the prisoners. During June, July and August it was estimated that every prisoner of war had at least one attack, and many two, of Sonne dysentery.

By the beginning of September all the occupants of all camps, with the exception of the main one at Galatas and the Camp Reception Hospital, had been evacuated to Greece. On 23 September about half of the residue of prisoners of war from the main camp and the sick from the hospital, in all some 300 British troops, embarked with 1000 Greeks in a totally inadequate and incredibly dirty vessel for transport to Greece. After calling at Piraeus, where the remaining staff and patients of the Kokkinia hospital were embarked, they were taken on round the coast to a transit camp at Salonika, where conditions were appalling. As they marched two miles inland to the transit camp, most of the

prisoners had their last sight of the sea for the next three and a half years.

Summary of Activities of Camp Reception Hospital, Canea, from 9 June to 23 September 1941

Total beds	**200–250**
Admissions	**1212 (NZ 402)**
Deaths	**23 (NZ 4)**
Discharges to main camp and evacuations to Greece	**1169 (NZ 392)**
Remaining at 23 September 1941	**20 (NZ 6)**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 3 — SALONIKA TRANSIT CAMP, 1941

CHAPTER 3
Salonika Transit Camp, 1941

I: Hospital Arrangements

THE transit camp at Salonika, northernmost town and port of Greece, was occupied by many 2 NZEF men in their first days of captivity. It was called Frontstalag 183 and was in a dilapidated old army barracks.

All who passed through it, whether they stayed a month or two, or even just a day, remember this transit camp for its starvation diet, filthy conditions of existence, the all too frequent shooting affrays, the heavy labour under strict German guards, and also the badly equipped hospital.

Eleven medical and dental orderlies, some of them New Zealanders, were selected from the 300 British prisoners of war collected there in May and ordered to form the nucleus of the British medical staff, which would take over the hospital from Serbian medical officers when the British prisoners of war started to come through from the main collecting base at Corinth in southern Greece.

Two concrete huts in a corner of the compound had previously been a small hospital. One hut was used as a dysentery ward, the other partly for surgical and partly for medical patients. It was decided that these wards with their sixty-five beds would not be sufficient to take the influx of sick that was expected, so the nearest barrack, a double-storied building, was quickly prepared to accommodate about 160 patients. It was split into two main wards on the ground floor, with six small rooms and a medical inspection room upstairs. Water was not laid on. Iron trellis beds with wooden slats and straw mattresses were all the patients had to lie on. The staff managed to get two blankets for each bed and a few sheets and pillows.

On 12 June the first draft of men arrived, and each day brought more and more until at one time 12,000 men were crowded into the

camp. Three British doctors, headed by Captain Cochrane, RAMC, arrived and also four medical orderlies and a group of the British Friends' Ambulance Unit, bringing the total staff of the hospital to 5 doctors and 30 orderlies. The staff worked long hours, on many days from five in the morning until after eight at night. There was always too much work to do and too few to do it all.

Men from Corinth camp were transferred by train to Salonika transit camp, but they were forced to march 30 miles over the Lamia Pass. They arrived exhausted, as conditions at Corinth camp had been deplorable, and many soon fell easy prey to disease and sickness. All through June the medical inspection room gave over 400 treatments a day. The two small buildings were overcrowded with enteric cases. One large ward in the improvised hospital was filled with all the other medical cases. These included men with slight wounds which had become aggravated on the march, skin complaints, poisoned feet, cuts, sandfly fever, jaundice, nephritis and tonsillitis.

A large ward of sixty beds was prepared to take malaria cases. The location of the camp was right in the centre of a malaria belt, and the men were without mosquito nets or ointments. The Germans issued 10 grains of quinine a day to each prisoner of war. This undoubtedly saved many thousands from malaria.

The small wards upstairs were soon occupied by cases of typhoid, typhus, pneumonia and beri-beri. The patients were of many nationalities – Scots, English, Australians and New Zealanders. Then came the Serbs, Indians, Palestinians, Cypriots, Arabs and Greeks.

The diet given to hospital patients consisted of the same food as that received by the men in the camp – mainly three-quarters of an Italian biscuit measuring about five inches square and a cup of German mint tea for breakfast, and a pint of barley, bean or lentil soup for dinner. (Three-quarters of this was water and, as the big meal of the day, it did not encourage sick men back to health.) Tea consisted of one-sixteenth of a loaf of bread and mint tea. The Greek Red Cross supplemented the

hospital diet with vegetables and extra bread, some milk and a few eggs.

Medical supplies were hard to get from the Germans, drugs impossible, and it was only with captured supplies which were handed over by the Germans that the staff could carry on.

Many and varied were the illnesses encountered under these appalling and trying conditions – malaria, sandfly fever, Malta fever, intermittent fever, kala azar, pneumonia, bronchitis, tonsillitis, tuberculosis, diphtheria, enteritis, jaundice, beri-beri, neuritis, nephritis, septicaemia, impetigo, typhoid, typhus, poliomyelitis, epilepsy, debility, etc.

The days grew hotter as June crept by. By the middle of July the heat was very trying on the starving men. Malaria was taking its toll and the ward was full. Beri-beri affected everyone; at one time over 600 men in the camp were suffering from it. The complete lack of vitamin B brought suffering to hundreds. Their feet began to swell and sometimes their hands and faces. The little energy they had was further depleted. The men dragged themselves around the compound. Many, however, were forced to go out to work, carrying heavy timber, rolling drums of petrol into trucks. Some men came forward with tins of marmite and a little spread on bread had good results. Praise must be given to these few who gave vitamins to help others, denying themselves what they could well do with to keep up their strength. Sandfly fever was raging through the camp and each night many cases were admitted.

In August many prisoners arrived from Crete and with them came more sickness, including poliomyelitis. Enteritis was a common complaint. There were cases of typhus, typhoid and pneumonia. The water supply was cut off for three to five days at a time.

II: Evacuation to Germany

Most surgical cases were sent to a Greek hospital under control of the Germans. Towards the end of July wounded arrived from Kokkinia

hospital in groups of 200 to 300 at a time, on their way through to Germany. The first party consisted of the blind, the limbless and jaw cases. Then came those with fractured limbs, some still in plaster, others barely a week out. After from two days to a week at Salonika they were sent in trucks from the hospital barracks to railway trucks and carriages. Many lay for eleven days in trucks with just straw for a bed, no blankets, very little food and no medical treatment. There was no toilet and few bottles or pans accompanied the wounded. Some were lucky in getting to Germany on a German hospital train, but too many had to go by cattle truck and carriage.

Another barracks was opened up to accommodate these 'through' patients. The bed state at one time was over 800 patients. Captain Cochrane, assisted by Captain Cook, NZDC, [1] persuaded the Germans to let one portion of a barracks be used as a convalescent hospital and here, with extra food, mainly vegetables supplied by the Greek Red Cross, many patients were given a better chance of recovering their health.

The jaundice cases soon developed oedema, believed to be due to the polished rice in their diet. The hospital became so full at one time that further jaundice patients could not be admitted. Beri-beri cases would line up every night to receive a spoonful of yeast. This relieved the oedema but the supply of yeast was soon exhausted.

September was the month of highest mortality, twenty-seven men dying over the thirty days. They were taken away in pine boxes fashioned by carpenters in the compound, and were buried in the old Greek cemetery where lie some Anzacs from the First World War. A military funeral was accorded each of them by a party of prisoners of war. In the period of six months, seventy-nine deaths were recorded out of many thousands who passed through the camp, the hospital handling over 3000 of the men.

As patients arrived from Athens and moved on to Germany, so the list of sick diminished, many of the patients going on with the wounded.

Medical personnel moved on with these parties. At the end of September the whole camp was practically cleared of prisoners of war, leaving only a few cooks, the camp sergeant-major and his staff and two doctors and ten orderlies. The staff lived in a small compound through the chill of October and the cold of November. The infantile paralysis cases improved. Diphtheria patients regained strength and the staff was able to relax a little from hard months of toil. By early November Red Cross parcels arrived and each man received one a week. It seemed like a magnificent Christmas the day each received the first parcel, and was a turning point in the health of all.

Half-way through November a hospital ship arrived from Athens with almost the last of the wounded. They stayed until 20 November, when a German hospital train was ready to leave for Germany and British sick and wounded travelled by it. Practically all the hospital staff, except one doctor and two orderlies who followed later, left by this train to take up further hospital duties in various hospitals in Germany.

During a ten-day trip from Salonika to Stalag VIIIB, Lamsdorf, Upper Silesia, the following rations (as recorded by Captain Borrie) were issued:

***Friday, 10th October, 1941*: We each received 4 small 4 oz. tins of Schwein Fleisch [pork] and 2½ loaves of bread, said to be rations for 4–6 days. The Greek Red Cross left baskets of grapes and tomatoes on the train.**

***Monday, 13th October, 1941*: Each received a cup of 'ersatz' coffee in Belgrade. The Serbian Red Cross left bread on the train.**

***Wednesday, 15th October, 1941*: At Szowbathely, Hungary, 'am now very thin' – have lost a lot of weight these past 2 weeks. My buccal pads of fat are now very small, and I can easily and distinctly palpate all my teeth through my cheeks.**

***Thursday, 16th October, 1941*: At Vienna – from German Red Cross, received one pint hot thick pea soup, served in cartons. In the afternoon, issued with ?th of a loaf of bread per man, and one small tin**

of Schwein Fleisch.

***Friday, 17th October, 1941*: At Nuremberg – issued with mint tea and ?th loaf per man.**

***Saturday, 18th October, 1941*: Beyond Dresden – at 9.30 p.m. given 1 loaf of bread between 17 men.**

***Sunday, 19th October, 1941*: Breslau – 2 large bowls of pea soup and a cup of ersatz coffee, issued by the German Red Cross.**

The dry diet in that 10 days was 3 and ?th loaves of bread, 5 small tins of Fleisch (each about 100 grams weight); besides some grapes and tomatoes from the Greek Red Cross. Fluids consisted of drinks of ersatz coffee, etc., at Belgrade, Vienna, Nuremberg and Breslau, with soup at Vienna and Breslau.

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[1] **Maj C. C. Cook, m.i.d.; Masterton; born Invercargill, 10 Oct 1909; dental surgeon; p.w. May 1941.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: HOSPITAL ARRANGEMENTS

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Greek cemetery where lie some Anzacs from the First World War. A military funeral was accorded each of them by a party of prisoners of war. In the period of six months, seventy-nine deaths were recorded out of many thousands who passed through the camp, the hospital handling over 3000 of the men.

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Half-way through November a hospital ship arrived from Athens with almost the last of the wounded. They stayed until 20 November, when a German hospital train was ready to leave for Germany and British sick and wounded travelled by it. Practically all the hospital staff, except one doctor and two orderlies who followed later, left by this train to take up further hospital duties in various hospitals in Germany.

During a ten-day trip from Salonika to Stalag VIIIB, Lamsdorf, Upper Silesia, the following rations (as recorded by Captain Borrie) were issued:

***Friday, 10th October, 1941*: We each received 4 small 4 oz. tins of Schwein Fleisch [pork] and 2½ loaves of bread, said to be rations for 4–6 days. The Greek Red Cross left baskets of grapes and tomatoes on the train.**

***Monday, 13th October, 1941*: Each received a cup of 'ersatz' coffee in Belgrade. The Serbian Red Cross left bread on the train.**

***Wednesday, 15th October, 1941*: At Szowbathely, Hungary, 'am now very thin' – have lost a lot of weight these past 2 weeks. My buccal pads of fat are now very small, and I can easily and distinctly palpate all my teeth through my cheeks.**

***Thursday, 16th October, 1941*: At Vienna – from German Red Cross, received one pint hot thick pea soup, served in cartons. In the afternoon, issued with ?th of a loaf of bread per man, and one small tin of Schwein Fleisch.**

***Friday, 17th October, 1941*: At Nuremberg – issued with mint tea and ?th loaf per man.**

***Saturday, 18th October, 1941*: Beyond Dresden – at 9.30 p.m. given 1 loaf of bread between 17 men.**

***Sunday, 19th October, 1941*: Breslau – 2 large bowls of pea soup and a cup of ersatz coffee, issued by the German Red Cross.**

The dry diet in that 10 days was 3 and ?th loaves of bread, 5 small tins of Fleisch (each about 100 grams weight); besides some grapes and tomatoes from the Greek Red Cross. Fluids consisted of drinks of ersatz coffee, etc., at Belgrade, Vienna, Nuremberg and Breslau, with soup at Vienna and Breslau.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 4 — ITALY

CHAPTER 4
Italy

I: Prisoners from Second Libyan Campaign

APART from the end of the campaigns in Greece and Crete, the two other occasions when large numbers of New Zealanders became prisoners of war were at Sidi Rezegh in November 1941 and forward of the Alamein line in June and July 1942. Some 2000 were taken on the first occasion and 1800 on the second, and most of them were later taken to Italy. From Libya in 1941, 15 officers and 182 other ranks of the New Zealand Medical Corps were taken to Italy, but in June and July 1942 the only members of the corps captured were 1 RMO and 15 other ranks of 5 Field Ambulance, the latter group in the break-out from Minqar Qaim.

In December 1941 the medical personnel from the captured medical centre near Sidi Rezegh were shipped to Italy, some staying at Crete on the way. Those disembarked at Taranto or Bari went to a transit camp on the outskirts of Bari, and those disembarked at Naples to a transit camp at Capua. In subsequent months they were dispersed to other camps. They arrived in Italy in the middle of winter into camps ill prepared to receive them and when the food supply of the Italians themselves generally was limited. Their discomforts were many – underfeeding, poor and overcrowded accommodation, insufficient clothing and extreme cold.

Most of the prisoners were housed in huts, though in the early stages some men were forced to occupy tents made of Italian ground-sheets buttoned together, and when snow lay on the ground conditions were miserable. Many of the huts were flimsy constructions letting in the wind and rain and without any heating. Straw mattresses and blankets, but sometimes only two, were provided, and men's clothing was limited to the little in which they were captured. Overcrowding was general throughout the camps, air space sometimes being as little as a third of that regarded as a normal standard, and sanitation arrangements were

often primitive. Personal hygiene was difficult, with showers limited to about one a month and no change of clothes available. Camps were infested with lice. Sickness such as dysentery and pneumonia became common. Medical attention by the Italians was very poor and very few drugs or medicines of any sort were available.

The diet supplied to prisoners of war in Italy was almost completely lacking in essential vitamins and poor in first-class proteins and fats. The daily food allowance (in grammes) was: bread, 200; meat, 34; macaroni and rice, 66; peas and beans, 30; sugar, 15; olive oil or lard, 13; cheese, 40; tomato essence, 15. The value in calories worked out at 1081, less than half the normal requirement. Had it not been for the distribution of Red Cross food parcels the general health and physical condition of all would have suffered severely. These parcels contained an excellent variety of concentrated foodstuffs with a calorific value of 12,000–15,000 calories. In some of the camps in 1942, however, Red Cross parcels were rarely received; one medical group received only one and a half food parcels per man in four months in Italy, whereas normally from the middle of February onwards the issue was one parcel to every four prisoners about every eight days. Without Red Cross foods all prisoners lost weight rapidly, felt the cold intensely, and had little energy for exercise. Cigarettes were issued only at infrequent intervals.

Medical facilities were inadequate according to New Zealand standards. At Bari camp, for instance, an Italian medical officer was in charge of the medical arrangements, and in spite of repeated requests, British medical personnel were not permitted to care for their fellow countrymen. Medical men were employed on labouring jobs when employed at all. Any cases of sickness of more than a minor nature were sent off to the local Italian hospital, at which British medical personnel were not allowed to work. Dental facilities were likewise inadequate. A New Zealand dental officer, Captain Skegg, [1] with a few instruments which he had in his kit, did all the necessary temporary work and extractions under difficult conditions. Medical supplies, drugs and bandages were very scarce in medical inspection rooms, and efficient

and adequate treatment often impossible. Red Cross medical comforts parcels were received occasionally and these helped to overcome the shortage to some extent.

Treatment of Wounded

Most of the wounded who were captured by the enemy in Libya in November 1941 were later released by our own forces, but among the prisoners taken to Italy there were some 200 New Zealanders who were wounded. Most of them were taken across the Mediterranean by hospital ship, some going into a hospital at Caserta and some to a hospital at Bari. At Caserta conditions seem to have been reasonably good as regards accommodation, and the Italian staff did their best. From December onwards three British medical officers and some orderlies were allowed to work in the hospital and were able to bring about improvements in treatment, although there were shortages of instruments and drugs. Red Cross comforts parcels were of great assistance as they supplied all the soap and supplemented shortages of toothbrushes and paste and toilet paper. During the period when the hospital was entirely staffed by Italians no attempt was made to wash any of the bed patients, and bed-sores were quite common. Sanitary conditions generally were inadequate, a state of affairs which the prisoners found to be common throughout Italy. Food in hospital was better than in the prison camps but was still far from adequate, but Red Cross food parcels provided supplements. Tea, sugar, margarine, chocolate, and condensed or powdered milk were the most appreciated items.

Other hospitals were no better, and in Bari hospital there were indications of neglect of prisoners and a definite shortage of food.

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II: Prisoners from the Pre-Alamein Period

As a result of the battles in the Western Desert in June and July 1942 at Minqar Qaim, Ruweisat and El Mreir there were 1800 more New Zealanders captured by the enemy, among them some 231 wounded. The wounded left on the ground at Minqar Qaim were promptly treated by German surgeons, but at Ruweisat many wounded were left by Germans unattended at RAPs for some hours – in fact some of the walking wounded were able to escape to British lines under cover of darkness. It seems, however, that the Germans had a large number of their own casualties to treat and were handicapped by limited medical supplies, and that in later battles the seriously wounded were attended to promptly. [1] At rear medical units the wounded were treated adequately and were admitted to hospitals at Matruh, Tobruk and Benghazi. Thence they were taken by hospital ships to Italy and went to hospitals at Caserta and Bari, which, with the sick from the prisoner-of-war camps in Italy, became overcrowded. Although wards were sometimes set aside in Italian military hospitals for British prisoners, the Italians found it necessary to set up special hospitals at Bergamo and Lucca in July 1942, and later at Bologna, Altamura and Nocera. At the same time most of the British medical officers and chaplains were transferred from officers' camps to the hospitals. Thus all the eleven medical officers at Camp 35, near Salerno, were sent to Lucca on 11 July to be employed in minor capacities. Orderlies were also sent to the hospital, which soon held 530 prisoner patients, with 13 medical officers and 104 orderlies to look after them.

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[1] British prisoners taken in North Africa were handed over to the Italians for custody.

At Bergamo the hospital was housed in a large modern building with excellent equipment and a number of separate wards. British medical officers and orderlies treated the patients, but were still under Italian control. By the end of the year there were over 300 patients, mostly from Bari and Caserta. At Bologna a large school building was used; it also was well equipped and by the beginning of 1943 held 450 patients.

The overcrowding at Caserta hospital in the latter half of 1942 caused a considerable falling off in food supplies and medical attention. Although theoretically on a reasonable ration, the patients received only a fraction of it and, like all other prisoners, depended greatly on the food from Red Cross parcels. In November 1942, in spite of the transfer of over 400 patients, there still remained some 1300. At Bari hospital the food shortage was felt more acutely as no Red Cross parcels were delivered before May 1942.

The hospital building (*Ospedale*) at Lucca, where Captain Webster, NZMC, [1] worked, was very old and had virtually no modern facilities. The wards were overcrowded, each ward holding about double the number of patients that we would consider desirable. Hot weather, bad drainage, infected wounds and innumerable flies made the smell almost unbearable. The Italian medical officers and orderlies did their honest best for the patients, but their best was not very good. Their knowledge of medicine, with a few exceptions, was 20 or 30 years behind ours. Their refusal to give British medical officers any position of authority was not only very galling but also greatly handicapped their efforts to help the patients. Slowly and gradually over the ensuing months, as a result of Italian inefficiency and slackness, the British medical officers were able to do more and more, until in the latter months they were doing almost all of the work, and most of the surgery was done by Captain Webster. This undoubtedly helped the patients, not only physically but also in their morale. With few exceptions the behaviour, discipline and morale of the patients were always worthy of the highest praise.

General equipment and supplies of drugs and dressings were satisfactory. The Italians always did their best to procure the special drugs required, but these naturally were not always available. Splints such as Thomas splints did not exist, but fortunately plaster of paris bandages were nearly always available. There was no special operating table, but in this and many other things the medical officers soon learnt to improvise with satisfactory results. The Italian treatment of fractures

was poor; there was never any attempt at reduction of

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the fracture, the Italians simply allowing the bone to unite in any position of shortening, angulation or rotation. The later cases were treated by British medical officers with good results.

Food for patients was adequate but not too appetising – largely carbohydrates, but some meat every day. It was deficient in fats. For medical officers and orderlies the food was considerably less, again mostly carbohydrates and a small ration of meat twice a week.

It was literally astounding to the medical officers to see how rapidly large wounds healed after the arrival and distribution of the Red Cross food parcels. These gave the patients a welcome change of first-class and varied foods. They were likewise essential not only to the health but also to the lives of the orderlies. The rations for prisoners of war in Italy were inadequate to maintain life, and without these Red Cross food parcels very many prisoners would have slowly died of starvation. The ration issued was theoretically the same as that for base troops and Italian civilians, but whereas they had access to the 'black market' the British prisoners, with few exceptions, did not have this access, and in addition the full amount of their ration seldom reached them.

III: Repatriation of Prisoners

At intervals during their stay the medical officers captured in Libya made applications for repatriation of protected personnel. Towards the end of 1941 an agreement had been reached between the United Kingdom and Italy that either power could detain any protected personnel whose services were required to care for their fellow countrymen who were prisoners. Although very few British protected personnel were employed in looking after British prisoners, the Italian

authorities were not willing to arrange any large-scale repatriation. In March 1942 they selected the four senior medical officers (Lieutenant-Colonels Twhigg, Tennent and Speight, and Major T. G. de Clive Lowe [1]) and twenty-seven orderlies and three amputees to be the New Zealand component of a party of 60 British sick and wounded and 69 protected personnel who were exchanged for 919 Italians in Smyrna harbour on 7 April. The medical officers informed the representative of the International Red Cross on the Italian hospital ship of the unsatisfactory conditions in the Bari camp, and in Egypt recommended that steps be taken to improve the knowledge of our forces in regard to the laws and usages of war on land in general, and to the Geneva Convention in particular, in order to reduce ill-treatment of prisoners and wounded of combatants on both sides. It was stated that in Libya there had been considerable illegal confiscation of personal equipment and effects belonging to prisoners, and medical work was hampered through misappropriation of transport and equipment of field medical units.

The crowded state of the hospitals led to amputees and other disabled men being discharged to a camp soon after their wounds were healed. Most of these men and other serious cases had their names sent forward by our medical officers for submission to the Mixed Medical Commission. After the first small repatriation of April 1942 the Commission continued with the examination of cases brought to its notice. Unfortunately some local camp commandants prevented a number of prisoners suitable for repatriation from seeing the Commission.

After protracted negotiation, on 19 April 1943 at Smyrna 150 sick and wounded, including 44 New Zealanders, were exchanged for 1211 Italians, while at Lisbon at the same time there were 15 New Zealanders in a party of 430 British repatriated to the United Kingdom. At Smyrna further exchanges were made. On 9 May 150 sick and wounded (12 of them New Zealanders) and 350 protected personnel (96 of them New Zealanders) were exchanged for 2400 Italians, and on 2 June 140 sick

and wounded (4 of them New Zealanders) and 290 protected personnel (6 of them New Zealanders) were exchanged for 2676 Italians.

There still remained in Italy a number of amputees and eye and tuberculosis cases, but a further exchange arranged for the autumn was prevented by events at the time of the armistice. On 8 September 1943 an Italian train with over 100 prisoners for repatriation left for Lisbon for exchange with 550 Italians, but the train fell into German hands and was not allowed to proceed; some of those on board were sent back to their camps and others to a hospital at Treviglio. In spite of British Government requests the German authorities refused to allow the sick and wounded to go on to Lisbon, and in addition refused to recognise the findings of the Italian Mixed Medical Commission, stating that the men would have to be medically boarded again in Germany.

In 1943 prisoners in the south of Italy were steadily moved north and in mid-1943 the hospital patients at Nocera and Altamura were transferred to Milan. Though moved out of the danger zone of Allied landings, they were then more exposed to Allied air operations. A hospital was set up in a school building opposite a factory in central Milan, and on 13 August during a bombing raid the building was wrecked by blast, a number of prisoners losing their lives, including three New Zealand medical orderlies. Along with all other prisoners, patients were taken from Italy to Germany after the Allied invasion of Italy, most going to Lamsdorf or Spittal, at least some of the seriously disabled being taken by hospital train.

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: PRISONERS FROM SECOND LIBYAN CAMPAIGN

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APART from the end of the campaigns in Greece and Crete, the two other occasions when large numbers of New Zealanders became prisoners of war were at Sidi Rezegh in November 1941 and forward of the Alamein line in June and July 1942. Some 2000 were taken on the first occasion and 1800 on the second, and most of them were later taken to Italy. From Libya in 1941, 15 officers and 182 other ranks of the New Zealand Medical Corps were taken to Italy, but in June and July 1942 the only members of the corps captured were 1 RMO and 15 other ranks of 5 Field Ambulance, the latter group in the break-out from Minqar Qaim.

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Most of the prisoners were housed in huts, though in the early stages some men were forced to occupy tents made of Italian ground-sheets buttoned together, and when snow lay on the ground conditions were miserable. Many of the huts were flimsy constructions letting in the wind and rain and without any heating. Straw mattresses and blankets, but sometimes only two, were provided, and men's clothing was limited to the little in which they were captured. Overcrowding was general throughout the camps, air space sometimes being as little as a third of that regarded as a normal standard, and sanitation arrangements were

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 5 — GERMANY

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: CONDITIONS AT STALAG VIIIB, LAMSDORF

I: Conditions at Stalag VIIIB, Lamsdorf

ARRIVING in Germany by cattle truck from Greece, the prisoners of war were taken to a large camp or stalag. There were separate camps for the different nationalities, British, French, Poles and Russians, and they usually had a capacity for 6000 to 10,000 men. Many New Zealanders went first to Lamsdorf to Stalag VIIIB (later called Stalag 344). Here the numbers varied from 8000 to 15,000. In each of the several compounds there was a medical inspection room with a British medical officer in charge, and there was a camp hospital of 200 beds also with a British staff. Near the camp was a prisoner-of-war hospital, Lazarett Lamsdorf, with 450 beds.

In the base camp at Stalag VIIIB there were five barracks to each compound, each barrack being in two divisions and each division holding 200 men. The bunks used were of three tiers, the lowest being six inches above the ground and the highest about seven feet from the ground. Between the two divisions was a room containing a washing trough and a copper to boil water for tea.

***Bathing facilities:* On arrival at base camps in Germany all prisoners were put into a reception compound and not permitted to mingle with the others in the camp until they had been deloused. That process included a hot shower.**

Bathing facilities in Stalag VIIIB were bad. At first the troughs between the two divisions of the concrete barracks were all that existed, and in the bitterly cold winter of 1941–42 there was frequently a thick coating of ice on the bathroom floor.

In March 1942 a bathhouse was built. It had twenty showers and 600–800 men could be showered each day. Each man then had a shower

every ten days.

In the hospital at Lamsdorf each patient was bathed on admission and issued with clean pyjamas and blankets before entering the wards, and all walking patients and staff had a bath weekly. The artesian water supply was inadequate and at times the water was cut off for some hours.

Drainage: **In the main, drainage from bathrooms, showers and taps was satisfactory in Germany, but washing-up facilities were more limited and dish-water was often tipped on the ground, thus adding to the problem of disposal of surface water. In a large camp inadequacy of surface drainage was accentuated by the spring thaw, when the camp would be converted into a quagmire for some six weeks.**

Latrines: **In Stalag VIIIB the latrines were in concrete buildings built over deep pits which were emptied by pumping into horse-drawn tanks. Lids covered most of the forty seats in each latrine until they were stolen by the men for firewood.**

Rubbish: **In time most camps obtained large concrete rubbish bins which were emptied about once every three weeks. It usually took considerable urging on the part of the camp leader or medical officer to persuade the German authorities to remove rubbish regularly. All British camps had accumulations of empty tins, which were hammered flat to conserve space and were periodically carted away for the Reich's metal salvage.**

Fly control: **It was difficult to keep flies under control in the summer-time. They appeared in June and lingered until late November. Rubbish in the form of Red Cross tins encouraged fly breeding. Sometimes it was possible to purchase flypapers or flit guns for use in camp hospital wards. Windows of wards were covered with British Red Cross gauze, and later with mosquito netting which was available from the Red Cross in 1943.**

Bedbugs: **In the prisoner-of-war camps in Greece bedbugs abounded.**

In Greek barracks every crossing of every piece of metal in the iron bedsteads housed one or two bugs. These were best attacked by burning them off with the flame of a primus stove. In Germany bedbugs were also seen but to a lesser extent. They frequented the wooden bunks of working parties. The men were 'bug conscious' and, when any bugs were reported, they usually dismantled all beds, which were meticulously scrubbed with antiseptic before being reassembled.

Lice: **On arrival in Germany in the autumn of 1941 all prisoners of war from Greece were deloused by the Germans.**

The German delouser in Stalag VIIIB was situated in a German military training barracks. It was used for Germans, Russians and British. Most of the staff were British. For delousing cyanide gas chambers were used, all materials being aired afterwards before use. This was not without danger. Those being deloused were stripped of everything and passed through a shower-room, then on to a dressing room where they waited until their kit was ready.

In February 1942, when one of the last convoys arrived from Greece, the men were taken to the delouser. Their blankets were afterwards imperfectly aired and the men returned with them to the barracks; and, as the day was bitterly cold (– 20 degrees C.), they lay down under their blankets on their bunks. Three died, and seventeen were affected to a lesser extent, from the cyanide gas retained in the blankets.

Russian convoys arriving from the eastern front were very lousy, and it is therefore not surprising that, at the end of November 1941, typhus fever broke out. The British handling their affected clothing in the delouser also fell victims.

The British took immediate measures to prevent the spread of the epidemic, all 10,000 prisoners in Stalag VIIIB and all patients of the *Lazarett* being completely shaven and deloused; arrangements were made with the German authorities by Lieutenant-Colonel Bull for isolation, disinfection and improved facilities for personal hygiene. In

all, only eighteen British at Lamsdorf developed typhus, three, including one medical officer, succumbing.

Annual Typhoid Inoculation: Almost all British prisoners of war had had TAB inoculation before entering Germany. Those passing through the prisoner-of-war hospital in Athens in 1941 were all re-inoculated. Thereafter, each summer, in May, most large camps were given the German standard 1 cc. injection of TAB.

Weather

Although New Zealanders had experienced snow in Athens during the second week of March 1941, and later in March on the slopes of Mount Olympus in northern Greece, by the time they were taken prisoner in Greece and Crete the weather was already mild. Thereafter, from May until the September equinox there was an endless succession of hot, sunny days, punctuated only with the high winds of the sirocco season.

By October, however, and during the trek to Germany, the temperature was rapidly falling, and already khaki drill was giving way to battle dress amongst the fortunate few who had salvaged their own. Heavy falls of snow were encountered in the second week of October 1941 in upper Yugoslavia, and again at the end of October in Silesia, Germany. The eastern German winter usually set in with heavy frost and fog in November, followed by sporadic falls of snow until Christmas time. Thereafter, snow would fall in earnest and would continue falling through January, February and even much of March. All the snow had usually melted by the beginning of April.

In winter the temperatures were consistently – 20 degrees C. to – 25 degrees C. In January 1945 British Air Force men who baled out at 20,000 feet over Stalag 344 and came down slowly by parachute were frozen to death before they landed.

Clothing

During summer drill shirts, shorts, stockings and shoes were worn by most prisoners. In winter, what with woollen underclothing and shirts provided by the British Red Cross, together with overcoat and battle dress, and with any supplementary clothing which might have come in the 10-pound personal clothing parcels—which usually arrived every three months—most prisoners were warm. It is worth recording that most prisoners of war whose people sent these personal clothing parcels found themselves after two years overburdened with clothing which they were unable to wear out. The result was that excess was either exchanged with less fortunate men or 'flogged' to the Germans for foodstuffs. Many also asked their people to send fewer such parcels, to increase the bulk of chocolate, or to send only specific articles, e.g., a pair of shoes and light-weight pyjamas.

It was an offence for Russians to be taken prisoner and they never received anything from Russia.

Working Clothing: **Under the Geneva Convention, the detaining power is required to issue working clothing for the men. This the Germans refused to do. There were many bitter verbal wars between German paymasters and British men of confidence over the supply of working clothing. As extra supplies of British Red Cross Society clothing became available from May 1942, fresh clothing was issued, the old being retained for work. Only in 1943, with continued pressure from the British and from the protecting power, did the German industrialists issue working overalls to those engaged in dirty occupations such as iron or cement transportation.**

Footwear: **The Germans provided clogs – which were used as slippers. By 1942 a reasonable supply of new British boots became available; cobblers were always kept busy.**

Lighting

Throughout, in Greece and in Germany, lighting in prisoner-of-war camps was by electricity. To save electricity, 25-watt globes were

installed, making a dim light. On some working parties, where men were engaged in electrical work, globes could be acquired and transported to other places of need. A wise prisoner of war always carried his 100-watt globe with him, the surgeon his 200-watt globe. Tinsmiths were adept at making reflecting shades and X-ray viewing boxes. At Arbeitskommando E/3, Blechhammer, the small minor operating theatre had a 500-watt globe surrounded by reflecting mirrors.

When power failed, as at times it did, or during a blackout airraid alarm, kerosene lanterns or candles were used. In the last days of the war even candle supplies failed, use being made of improvised Roman lanterns—a wick floating in a pool of fat or kerosene.

Though torches were contraband, many carried them. Batteries for optical and medical instruments and torches could be 'wangled' from German pharmacy departments.

Heating

In Germany prisoners of war were introduced to the Central European stove. There were two varieties: *(a)* The large tiled stove, and *(b)* the small iron stove. The former consisted of a large tiled box, 6 ft by 3 ft by 2 ft, at the bottom of which was a small draft-box and fireplace. This stove stood either in the corner or in the centre of a room – air was free to circulate around all six surfaces. The ration of coal per stove per day was one Red Cross box full, i.e., the amount which would fill a box 14 in by 8 in by 6 in. After the fire had been started with paper and kindling, the coal was put on, the fire 'roared' until all was a glowing mass and then firmly shut down for the rest of the day. The stoves provided good heat and a good surface for drying washing in winter and for baking food. They were installed in all the concrete barracks at Lamsdorf, the *Lazarett* and Stalag 344. Too few, however, were available.

Following a cooking roster, the various syndicates with Red Cross parcels would queue up for cooking space; whilst this worked

satisfactorily in 1940–42, with the overcrowding from autumn 1943 onwards new methods had to be found. The 'blower' was evolved: a large wheel turned by hand drove a small wheel coupled to a metal fan, which in turn forced a draft up a small fireplace, in reality a small forge, and made of Red Cross tins. Blowers were portable and, due to the intense heat they created, solved the problem of both time and grate-fuel shortage.

British Red Cross Food

Few Red Cross parcels reached Greece before October 1941 and none reached Crete. New Zealanders first received them on arrival in Germany; thus, those men captured in April and May 1941 did not receive a Red Cross parcel until October 1941. With wonder they were opened; and with wonder did new prisoners comprehend that the days of acute hunger were virtually over. No one can deny that most British prisoners owe their life and their health to the untiring efforts of the British Red Cross to feed them regularly. Little, too, did the British Red Cross realise what a superb piece of propaganda it kept pouring into Germany each week by way of the British Red Cross parcel. *Die Rotenkreuz Pakete* became a household word in Germany, and many a family partook of British coffee, cocoa, tea, chocolate, smoked British cigarettes or washed with British soap. Such were the articles of normal trade being used to barter for bread, eggs, flour, matches, electric light fittings and theatrical costumes.

The men rightly believed that these parcels were theirs and demanded their weekly issue. As most Germans insisted on stabbing all issued tins to prevent hoarding of food for escape purposes, most men prepared their Red Cross food in groups of two, and would receive a full parcel between two every Tuesday and Saturday. If times were bad their issue would fall to a parcel between two every seven, ten or fourteen days.

Owing to a Red Cross parcel bottleneck at Lisbon there was a complete parcel failure from January 1942 until May 1942.

The year 1943 was relatively full, except for three months following the German occupation of Italy, and at the time of the great transportation of prisoners of war from Italy to Germany, when, with the sudden influx of large numbers of hungry mouths, adequate supplies failed for approximately three months.

During early 1944 Red Cross supplies were adequate, and, in fact, most camps, both large and small, endeavoured to build up a three months' reserve of their Red Cross food. Unfortunately, on Arnhem Sunday (17 September 1944), at approximately 7 a.m. in most *Wehrkreise* (war districts) came an order from the *Oberkommando der Wehrmacht:* 'All prisoner of war tinned food must be destroyed forthwith.' This order was ruthlessly enforced, particularly on the many (over 600) working parties of Stalag 344, with the result that, whilst there was a week's feasting on salmon, sardines and meat roll, lean and hungry months followed. Even in the *Lazarett* at Lamsdorf, where the patients and staff enjoyed community messing, much of their tinned food was destroyed, with the resulting onset of semi-starvation, which did not abate till the end of the war.

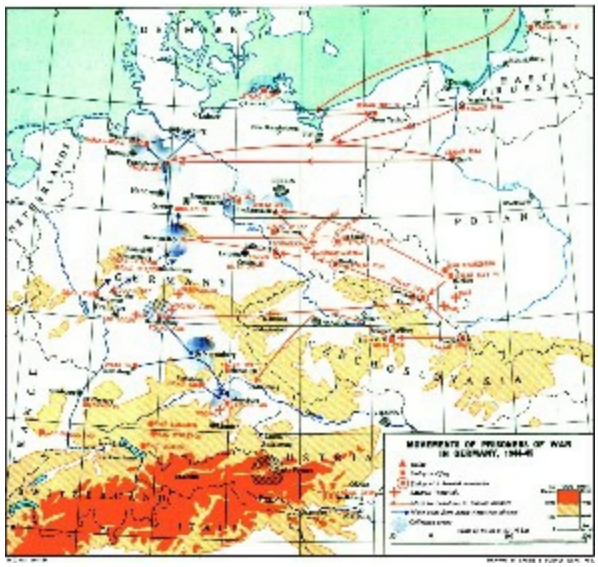
The Russian prisoners had no Red Cross food and they were starved on bread and turnip soup. In vain did the British medical officers at Cosel plead with the German medical authorities for food, rather than drugs, to treat their Russian patients. Only after a change of senior German medical officers and the start of the Russian offensive towards the Reich in March 1943 did the German attitude change and the health of those miserable Russians improve.

The French, with their own Red Cross active in sending parcels, were in much the same position as the British. So, too, were the Belgians and Serbs.

German Rations

In all German-designed kitchens food was basically prepared in the

same way; most had the equivalent of four large *Kessel*, cookers with a capacity of 50 gallons. They were used for the daily soup, for hot water for tea or ersatz coffee, for vegetables and for potatoes. In the main ersatz coffee was scorned; with sugar and condensed milk, however, it was quite a palatable drink, even though it was not coffee. Mint tea was sickly.



MOVEMENTS OF PRISONERS OF WAR IN GERMANY, 1944-45

The basis of the German diet was carbohydrate, particularly bread and potatoes. The bread was issued as a dry ration each day, between 4 and 5 p.m., and a loaf was distributed to each six men. On certain days of the week a little margarine or jam, and occasionally, cheese, was issued. The cheese was either the white ' *Bauer Kase*', or peasants' cheese, or a particularly obnoxious ersatz form of cheese which was alleged to be nutritious, but which few had the courage to put to the test until the hungrier days of late 1944 and early 1945.

Approximately once a week there was also a small issue, approximately 30 grammes per man, of German sausage, which is almost 100 per cent meat and fat, either bacon, ham, liver or offal. As such it is both tasty and nutritious. The ration was always too small.

To the German cook 'the soup' was the *pièGce de réGsistance*, and into this soup, with loving care, was put water, turnip, potato, salt,

gravy powder and, on certain days of the week, either chopped-up meat or dried fish. Soup was never popular with the British, who in time managed to curtail the efforts and enthusiasm of their German cooks and persuade them into cooking potatoes separately, making a lesser quantity of gravy soup and saving the meat ration for one or two days of the week, when it would be served as a 'roast'.

In the following table is set out the German ration at Stalag VIIIB, Lamsdorf, for the week 12–18 April 1942 in grammes and calories:

	Grammes	*Calories*
Bread	**2300**	**4789**
Potatoes	**3600**	**3130**
Tea	**13**	
Sugar	**175**	**716**
Oatmeal	**70**	**289**
Cheese	**78**	**325**
Jam	**25**	**75**
Margarine	**55**	**510**
Fat	**130**	**1002**
Barley	**30**	**110**
Sauerkraut	**135**	**12**
Honey	**150**	**438**
Sausage	**80**	**217**
Meat	**134**	**345**
Fish	**50**	**208**
Peas	**70**	**70**
Turnips	**2700**	**324**
	9795	**12,560**

This gave a daily ration of only 1794 calories, but the content of Red Cross parcels when in normal supply brought the total up to 3000 calories. Likewise the Red Cross parcels supplied what was lacking in mineral or vitamin content of the diet. It was found that from the two sources of diet there were adequate amounts of protein, calcium, iron, vitamins A, B1 and C, and nicotinic acid, but a slight deficiency in the normal bodily requirements of riboflavin.

II: WORK OF CAPTURED MEDICAL PERSONNEL

II: Work of Captured Medical Personnel

In captivity those recognised as medical personnel from the start (and that usually because they were carrying a Red Cross identification slip at the time of capture) were given medical duties in the camp medical inspection rooms, camp hospitals or hospitals, and with working parties.

Camp Hospital Staffs

Some were usefully employed as staff of the camp hospitals, of which the *Revier*, Stalag VIIIB, Lamsdorf, can be taken as an example.

It was a camp hospital of some 200 beds with provision for medical, skin, venereal and minor surgical cases. It also looked after, in a compound of camp barrack rooms, some thousands of chronic sick or injured who had passed the Repatriation Commission and who collected in Stalag VIIIB from 1940 until the first repatriation in October 1943. Orderlies were therefore needed for the wards, the barracks, the laboratories, dispensary and theatre, besides staffing a large out-patient section which dealt with sick referred from the block Medical Inspection rooms.

Other orderlies, excluded by lack of positions offering for medical work, found tasks as sanitation orderlies, attending to the cleanliness of latrines, staffing the camp delouser or organising the bath houses. Many medical personnel, too, whilst living in the main camp, worked on a daily fatigue party of cleaners and gardeners. They visited the *Revier* or *Lazarett*, thus fulfilling the task of 'daily help' so important in the running of a modern hospital. They worked from 8 a.m. to 5 p.m.

Privileges for medical personnel were belatedly granted, and apart

from the opportunity of doing medical and not general work, consisted largely in having the right of a walk outside the camp once a week and the issue of a double ration of letter cards a month, as provided by the Geneva Convention.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

III: PRISONER-OF-WAR HOSPITALS

III: Prisoner-of-war Hospitals

It was the policy of the Germans to provide in prisoner-of-war hospitals a skeleton administrative staff only, with usually one German medical officer acting as medical superintendent. Thus, all the medical and surgical work and nursing was done by Medical Corps personnel and others from among the prisoners themselves. Only very rarely were prisoners of war treated in German civilian or military hospitals; those who were so treated generally spoke well of the care, attention and food.

British medical officers and orderlies were sent to hospitals indiscriminately by the Germans. Other medical men, as they arrived in Germany, were fortunate enough to be employed at such *Lazaretts* as Lamsdorf, Cosel, Tost, Königswartha, Schultherg, Obermasfeld, Kloster Haina, Marlag-Milag Nord, Berlin, etc. If they lacked a specialised knowledge of a particular disease they had to learn about it from books, if available, or from German and French doctors. This was so at Elsterhorst, but an efficient team was built up largely in spite of, and rarely with the real assistance and co-operation of, German officialdom.

German arrangements for the transport of tuberculous prisoners of war, and indeed of all sick prisoners, were casual and haphazard in the extreme. It was common for patients to spend days in trains, usually standing, with most making several transfers, during which they carried their own baggage. Right up to the last, the four miles between Elsterhorst station and the tuberculosis hospital was often completed on foot by patients.

Side by side with the work of the British teams of medical officers and orderlies went the invaluable contributions of the Red Cross. The food parcels sent by that organisation were directly responsible for the survival of very many prisoners of war, let alone those who were sick.

The invalid comforts section, with its extras, its occupational therapy parcels, and its instruments and drugs, contributed much, enabling patients to live who would otherwise have died. No tribute to the Red Cross can be too effusive, for all prisoners of war owe much, and many their very lives, to its magnificent work.

It can be said that the German medical organisation for the care of prisoners of war was not fully adequate, nor was the transport of sick, particularly of pulmonary tuberculosis cases. Medically, far too much was left to the initiative of the prisoners themselves. In general, it can be said that their rights under the Geneva Convention were constantly demanded by the British, but frequently they were accorded them by the Germans as privileges.

There was always considerable difficulty in getting sufficient medical orderlies to staff the hospitals adequately. Although it was known, for instance, that there were hundreds of British orderlies at Stalag VIIIB, Lamsdorf, of whom the majority were not employed as medical orderlies, it seemed impossible to get them transferred to hospitals where their services were urgently required. The German establishment provided for only about five or six medical orderlies to each hundred patients. However, the British medical officers usually managed to increase this allowance. Thus at Elsterhorst, a 500-bed hospital, Lieutenant-Colonel Bull had some sixty medical orderlies.

The British medical officers in captivity had an unending struggle with the Germans. In general, they had to fight for everything they got in the way of medical supplies and facilities for those in their medical care. The German medical officers were found to fall into one of two general categories – an older group who had qualified in pre-Nazi days, and a younger group who qualified during the Hitler regime. There was a vast difference between the two types. The older group could often be professionally respected by the British medical officers, were helpful, realised the difficulties and often had a sense of humour. The younger group, on the other hand, were usually arrogant, clinically unsound, and did not hesitate to say that the British medical officers presented cases

to the Mixed Medical Commission on political rather than clinical grounds just to get their compatriots repatriated. The Germans, as was perhaps natural, did not put their best doctors in charge of prisoners of war. Against this background the achievements of the British medical officers are enhanced.

There were four types of prisoner-of-war hospitals in Germany: the general hospitals, the special hospitals, the mixed general hospitals, the prisoner-of-war wards in German hospitals.

The General Hospitals

Two, in particular, were well known, one at Obermasfeld in the Cosel region, and one at Lamsdorf, Stalag VIIIB, later Stalag 344. There were others, and smaller.

The *Lazarett* at Lamsdorf was run on the lines of any other German hospital, with a German area *Chefarzt*, [1] having the rank of *Oberstabsarzt*, [2] but with a British staff of specialists and assistants under him – some fourteen British medical staff in all, including 3 surgeons, 1 assistant surgeon, 3 physicians, 3 psychiatrists, 2 anaesthetists, 1 radiologist and 1 padre. The chief dispenser was a German.

***Lazarett Lamsdorf:* This hospital, opened on 13 October 1941, was planned to serve the needs of over 30,000 men and was undoubtedly the best designed and equipped hospital for British prisoners of war in Germany. It occupied six acres of flat land in a forest and its eleven concrete buildings were fitted with double windows and wooden shutters. In every room was a large, efficient tiled stove. Six buildings were self-contained parallel blocks of wards, each holding from seventy to one hundred patients. The five service buildings were the staff, administrative and treatment blocks, kitchen and morgue. In the area was a large brick Red Cross as a sign for aircraft.**

The ward blocks were divided up into large and small wards, with

service rooms as in a modern hospital with the necessary sanitary conveniences. The operating theatres were well equipped with efficient sterilising and full X-ray and laboratory facilities. Although the overall control was in the hands of a German medical officer, full control of the clinical work was eventually given to the British medical officers working under a senior British officer. The nursing orderlies were all British and lived at the hospital, while a daily party of general duty men was drawn from Stalag VIIIB. There was a German chief dispenser in control of the stores, but otherwise the staff of the service departments was British. Besides physicians and surgeons there were British anaesthetic, ophthalmic, radiological, neurosurgical, psychiatric and ENT specialists available either on the regular staff or visiting the hospital from time to time.

When Lazarett Lamsdorf opened the staff largely consisted of British Expeditionary Force medical orderlies. A few early arrivals in Germany from Greece, New Zealanders and others, were also chosen for the staff. These men were particularly keen; and, encouraged by their medical officers, who gave them regular courses in nursing, anatomy, physiology, etc., they rapidly achieved a remarkably high standard of nursing. The 'ward charges' were fully qualified state registered male nurses, who ran their wards with precision be they medical, surgical, infectious or mental. The office staff, too, trained in the BEF general hospital, had no difficulty in coping immediately with the German hospital methods. The special departments also, i.e., X-ray, theatre, dispensary, laboratory, massage, pack store, kitchens, were all run with a high and pleasing standard of efficiency. The quarters given to orderlies there were better than they had ever dreamed of in their philosophies as prisoners of war, and none wished to return to the squalor of the main stalag. There was, therefore, an incentive to work well.

A mixed medical commission visited the hospital twice yearly to inspect and also to determine which patients should be repatriated. Full case records were kept, with copies available for the Germans and the

original for the United Kingdom, German forms being used. Admissions from the camp were arranged from a waiting list drawn up by the senior physician and surgeon at clinics in the camp, and urgent cases were admitted at any time. Special accommodation was provided for the infectious and mental cases. The rations supplied by the Germans were meagre, but the Red Cross parcels enabled a satisfactory diet to be maintained and four meals a day were served in the wards.

Entertainment and sport were permitted freely. In general, the Germans appear to have provided an excellent hospital, with all supplies satisfactory except the rations, and to have allowed the British medical personnel to carry out their work with a minimum of control.

Captured with the British prisoners were several specialists of note who were employed in their own specialities. Major Henderson, RAMC, a neurosurgeon, was resident for four months on two occasions at Lazarett Lamsdorf doing nerve suture work. Major Cuffy, Rome, visited Lazarett Lamsdorf in 1942 and 1943 from Obermas-feld to do ear-nose-throat surgery, and Major Wright-Thomson was in charge of the ophthalmic services for Stalag VIIIB.

Their services were invaluable to captors and captives alike.

Dental Treatment: **Fortunately for the prisoners of war there were dentists among their number in captivity, and many hospitals had a dentist attached. In captivity there was considerable deterioration of teeth due probably to, first, lack of regular maintenance work, and, second, to a high carbohydrate diet. The volume of work offering was beyond the capacity of the few dentists available. From the point of view of the prisoners it was a blessing that the New Zealand Mobile Dental Unit was captured in Greece, as its officers did magnificent work throughout the length and breadth of Germany, and their training and efficiency was found to be of a much higher standard than that of dentists of other nationalities.**

The Special Hospitals

In 1942, at Kloster Haina, the Germans opened a 'centre for the blind' to which all with eye injuries were sent. Major D. Charters, RAMC, eye specialist of 26 General Hospital, was OC and instrumental in founding this centre. The blind were taught braille, and in many respects received excellent rehabilitation.

At Königswartha all cases of pulmonary tuberculosis were collected. Conditions were far from satisfactory at first, as accommodation was very poor, equipment was limited and there was a shortage of staff, despite the transfer of British medical officers and orderlies to the hospital in 1942. After the arrival of Lieutenant-Colonel L. E. Le Soeuf, AAMC, in August 1942 administration, organisation and treatment all improved, but Colonel Le Soeuf petitioned for better conditions with the result that in March 1943 the patients were transferred to Elsterhorst, where a general hospital for prisoners of war had been specially built. At Elsterhorst facilities for surgery were much better and by then special thoracic instruments had been obtained. Later in the year serial radiography was begun among prisoner-of-war working parties to detect cases of tuberculosis. After being passed by the Mixed Medical Commission groups of patients were repatriated in October 1943, May and September 1944 and January 1945. Lieutenant-Colonel Le Soeuf was transferred elsewhere in May 1944 and his place as SBMO was taken by Lieutenant-Colonel Bull, NZMC. Over 1000 British patients, most of them from the United Kingdom, passed through the tuberculosis hospitals. There were only twenty-two New Zealanders admitted and two died; but twenty more cases were first diagnosed after repatriation to England in April 1945.

The Mixed Hospitals

These were hospitals established to deal with prisoners of war in general and not with 'British prisoners' alone.

One of the first to function was Teil-Lazarett, Cosel, which housed in most primitive conditions Russian, Serbian and a few British sick in the

Cosel district. In 1942, because of overtures from British medical officers nearby, and because of adverse reports carried to the central stalag by visiting British padres, British medical officers were detailed by the Germans to go to Cosel to assist the Serbian doctors. Shortly after, following an outbreak of severe summer diarrhoea due to hopeless sanitary arrangements, the benign and ineffective German *Chefarzt* was replaced by an active German organiser; and, with plenty of effort from the British as well, the hospital soon became a reasonably satisfactory institution.

It catered for 100 British, 200 French, 300 Russians and some Serbians. On its staff were British surgeons and physicians, a French physician, a Serbian surgeon and a British administrative OC, and two New Zealand medical officers (Captains Stevenson-Wright and Foreman).

From July 1942 to November 1943 Stevenson-Wright and Foreman worked in the hospital at Cosel. The hospital then housed 300 Russian and 100 French and British sick prisoners of war. At first, housing conditions were little better than those in Stalag VIIIE, the notorious camp for Russians at Neuhammer, although the feeding was better. Among the Russians all types of medical diseases were seen, the most common being all forms of tuberculosis, famine oedema and dysentery. All manifestations of vitamin deficiency were frequently seen but in nearly two years only four cases of beri-beri were admitted. These four cases were in men apparently well nourished who worked in a sugar-beet factory. Here again the state of the Russian prisoners admitted to the hospital showed the inhuman way they were being treated by the Germans, who made them work hard on construction work and gave them totally inadequate food. In 1945 the Cosel hospital was transformed into a pleasant, efficient hospital, thanks to the Senior British Medical Officer and the Red Cross and a co-operative German doctor. It was interesting for the New Zealand medical officers, following this period in Cosel hospital, to return to work again at the British stalag at Lamsdorf, where among better nourished and cared-for prisoners of war the only illnesses seen were those encountered in a

small town anywhere with a population of 10,000.

A similar mixed 600-bed hospital was commenced at Tost in May 1944, functioning until the area was liberated by the Russians in January 1945. It was under command of Major S. G. de Clive Lowe, NZMC. Those taken by the Russians were finally released through Odessa, going through the Mediterranean Sea to Egypt and England.

Prisoner-of-war Wards in German Hospitals

In areas where there were no British prisoner-of-war hospitals it became the custom to admit and treat British prisoners in German hospitals. In smaller hospitals very frequently the British were treated in the same wards as the Germans. In the larger hospitals, or stricter hospitals, the prisoner of war was segregated and treated in his own barracks, as, for example, in Reserve Lazarett IX in Breslau, where neuro-surgery and orthopaedics were concentrated; or in Kattowitz, where oto-rhino-laryngology was the speciality. One point is interesting. Although the Germans did not withhold their own hospital rations from the prisoners of war, even issuing a chocolate ration to them, they did not like the British opening and demonstrating their British Red Cross food parcels before the wounded German soldiers' eyes.

In all hospitals the German medical *Chefarzt* usually made a weekly round of the wards.

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[1] Medical Superintendent.

[2] Staff-surgeon-major.

IV: THE MIXED MEDICAL COMMISSION

IV: The Mixed Medical Commission

A Mixed Medical Commission, sometimes called the repatriation commission, visited prisoner-of-war camps regularly for the purpose of deciding who among the sick and wounded should be repatriated. The Commission was set up by international agreement and worked through a number of teams. The composition of each team was usually two neutral doctors (Swiss) plus a doctor from the detaining power, i.e., a German when the team was touring Germany and a British doctor when the team was touring Canada. All these doctors were top grade, usually of professorial status, and they were very impartial and fair, though often with a slight bias in favour of prisoners of war.

The criteria for repatriation were the improbability of the prisoner of war again serving his country and the inability of the detaining power to provide the requisite treatment. The cases presented for consideration fell into several categories: *(a)* Obvious – the limbless, the blind, those with tuberculosis cavities; *(b)* Less obvious, which were subjected before presentation to much investigation by British and German medical officers, e.g., those with peptic ulcers; *(c)* Doubtful – those insisted upon by British medical officers without agreement by the Germans: the doubtful lung shadow, the suspected early disseminated sclerosis, etc.; and *(d)* those who neither the British nor the German medical officers believed should be presented, but who were allowed to present themselves. They rarely succeeded without medical advocacy. Among cases presented from prisoner-of-war hospitals as high a pass rate as 95 per cent was not uncommon. Naturally among the more ambulant more difficult decisions had to be made, and a correspondingly smaller percentage passed. Being passed for repatriation did not always mean early action, and there were sometimes considerable delays before the prisoners of war concerned were actually repatriated.

Following the first visit of the repatriation commission to German camps in 1941, many prisoners of war and some orderlies and officers (including New Zealanders) were taken to Rouen for exchange. The exchange did not take place and all were back in Germany by February 1942, and it was not until 3 November 1943 that the first New Zealand group of invalids to be repatriated from Germany reached Cairo via Spain.

In central prisoner-of-war hospital areas, e.g., Stalag VIIIB, Lamsdorf, no medical work loomed as large in the eyes of the German *Chefarzt* as the preparation of patients for presentation to the Mixed Medical Commission. The Commission met twice a year, in May and November; and, except for a lull of two months following its visit, a tremendous amount of effort was centred around it.

The routine became as follows. A patient with a lesion which looked of repatriable class would be shown to the *Chefarzt* during his weekly visit. Special tests would be devised, including examinations by German specialists, and the *Chefarzt* would be convinced of the nature of the ailment. When the time for the commission drew nigh, the man's name would be added to the list and complete summaries of the case prepared; and on the 'glorious day' the patient would be presented to the commission. A clinical discussion might be held on each case, at which the British specialists would give their views, if at variance with the Germans, and the man passed or rejected.

It must be recorded that only in late 1944 would Germans accept the findings of British specialists, radiologists or laboratories. Prior to that, any man with a renal complaint, a duodenal ulcer, a tuberculous spine, etc., had to be examined by equivalent German specialists, radiologists or laboratories. The amount of additional headache thus caused, including transport of patients to and from these clinics, e.g., 20 kilometres to Oppeln or Neisse, or 60 kilometres to Breslau in Wehrkreis VIII alone, and the heartache caused by tests and reports not being completed in time can well be imagined.

Small wonder that, with a steady annual increase in numbers being presented, the Germans, overwhelmed with the care of their own sick, came more and more to rely on British clinical and laboratory findings.

V: WORKING PARTIES

V: Working Parties

Many orderlies were sent to *Reviers* [1] on larger working parties. It became the aim of those in charge of prisoner-of-war medical arrangements, partly on the insistence of senior British medical officers, to provide a British MO for any camp with a population of over 500 men. At Arbeitskommando E/3, Blechhammer, the medical staff under the medical officer consisted of a fully trained RAMC nursing corporal, a secretary-interpreter also in charge of medical records cards, two orderlies responsible for dressings in the MI room and operating theatre, a male charge-nurse in charge, and two others in the 24-bed *Revier*. There was also a night orderly, one *Revier* cook, two masseurs, two sanitary men, and four orderlies to staff RAPs out on the *Baustelle*, or place where the men worked. The MO aimed to give each medical orderly a day off a week and a week off a year. In 1943 it was possible for those on vacation to spend that week in Lazarett Cosel, where they could join the orderlies there in their walks and games, in an entirely different atmosphere and relieved of responsibility.

Smaller camps, often miles from anywhere, had only medical orderlies to care for the sick; and the work these men did, in running sick parades, bullying truculent German guards into keeping sick in camp, making important medical observations and decisions, even diagnosing appendicitis or successfully treating pneumonia, is worthy of the highest commendation. One could only fully appreciate what these men accomplished by knowing them and by seeing the fruits of their labours.

Small working parties of about fifty men often occupied bunks in a barn. Large working parties of say 1000 men were housed in German army pattern prefabricated wooden barracks. These were excellent huts, built entirely of sections for floor, walls, windows, doors, ceiling and

roof. Each was fitted with a circular iron stove for heating, with an iron chimney passing through the ceiling in an asbestos-lined tunnel. Men obtained the materials to add most useful ovens to the stoves.

Although each hut was supposed to house only twenty prisoners of war or sixteen guards, after 1943 most housed twenty-four prisoners of war. To ease the crush, the men used to dismantle their double bunks and cut off the wooden side boards so as to make the beds each six inches narrower. Similarly, the men were sized in pairs and the length of the beds cut down to the exact length of the occupants.

When the prisoners of war from Italy were taken to camps in Germany the overcrowding in most stalags and larger working parties became acute. This was further accentuated in the last two months of the war when prisoners of war from East and West were all concentrated in the Nuremberg-Moosburg area.

The Blechhammer working parties' huts were originally erected on the sandy dredgings of the Adolf Hitler Canal, which ran east from the Oder River to the great industrial area around Gleiwitz, and served to link the great upper Silesian industrial belt and coalfields with the Oder River canal system. There was no attempt at organised surface water drainage, with the result that the clay and sand quickly made mire in any rainy weather. By May 1942 the Germans were persuaded to lay cinders, which served to make the camp drier. At that time, too, the prisoners themselves began bringing into the camp bricks and cement, ‘acquired’ mainly at weekends. They managed to lay water channels which took storm water and waste ablution water away from the camp.

For the larger working parties at Blechhammer the latrines were of the usual German prefabricated variety, that is, two parallel concrete troughs over which a prefabricated barrack was erected.

Around Blechhammer the bath-houses were a feature. In one working party barracks there were two bath-houses for 760 men, an abundance of taps and troughs, and two shower rooms with perennial hot water. Two

orderlies were kept in camp as camp staff to stoke the fires and clean these bath-houses.

The smaller working parties in the woods often improvised a fire under a copper, but regular baths or showers were rare.

On many major working parties water was never a problem, although all were ordered to drink only boiled water, particularly in the summer months. Smaller working parties frequently had to rely on tanks filled from roofs, or from wells, and again boiling was the best method of sterilising. A water cart of the British Army pattern was not seen.

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[1] **Medical posts.**

VI: FORCED MARCHES IN 1945

VI: Forced Marches in 1945

As the advance of the Russians in January 1945 brought them speedily nearer Poland and eastern Germany the Germans began to move prisoners of war away westwards from the fighting zone. For men of many camps the journey was made on foot – 12 miles a day – the ground sometimes being covered with snow, and cold barns were the only shelter at night; food was limited as civilians, troops and prisoners competed for what was available in the countryside in the winter but never got sufficient. On entering towns and villages the more active men raced to the head of the marching column and by quick, surreptitious barter, or by pleading with the peasants, were able to add to their rations. Woe betide the chicken that inadvertently crossed the road ahead of the marchers. Even cats or kittens 'went the way of all flesh'.

Because there were no facilities during the long trek west for the drying of clothing, particularly gloves, socks and boots, many prisoners of war fell victims to frostbite.

Lamsdorf camp was among those evacuated, 9000 being marched off and the remaining 2000 going to central Germany by train. In each of the fifty trucks of a train was a medical orderly who had a German first-aid box. [1] A truck was also taken over as a 'hospital' and staffed by two medical orderlies and a medical officer. As on other train journeys, the supplies of satisfactory drinking water were totally inadequate. Water had to be obtained from the indifferent sources which offered. Sometimes it was from streams, sometimes from station pumps, sometimes even from the railway engine. It was felt that this last source might have been the cause of the severe diarrhoea which affected the troops in transit. Diarrhoea and dysentery were the most frequent causes of illness and there were some respiratory infections. But those who had to march suffered these infections and frostbite and malnutrition as

well.

During the ten-day train journey from Lamsdorf, Silesia, to Hammelburg, northern Bavaria, the rations issued by the Germans were:

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[1] *Contents were*: Triangular bandage, 1; first field dressings, 6; small first field dressings, 20; leather finger covers, 3; cotton bandages, 5 cm. wide, 5; cotton bandages, 10 cm. wide, 10; crepe paper bandages, 8 cm. wide, 10; large clothing scissors, 1; strapping, 5 metres × 2.5 cm., 1 roll; safety pins, 10; large burn dressing (Picric acid), 1; boracic ointment, 50 c. cm., 1 tube; zinc ointment, 1 tube; vaseline, 1 tube; sodium bicarbonate tabs., 25; aspirin, 100; Tannalbin tabs., 30; Solventes tabs. (Ammon. Carb.), 100; tincture 'Sepsos' (Ersatz Iodine), 2 bottles; anti-rheumatic spirits, 100 grm.; tabs. Atophan (acid phenyl. chinol. carb.), 50.

1945

21 February	Bread: 2000 grammes; margarine 125 gr.
22 February	Soup, meat and vegetable.
23 February	Nothing.
24 February	Nothing.
25 February	Nothing.
26 February	Nothing.
27 February	Bread: 500 gr.; lard 40 gr.; sausage 30 gr.
28 February	Nothing.
1 March	Nothing.
2 March	Arrived Hammelburg, XIIIC.

The weekly German ration scale in Stalag XIIIC, Hammelburg, was:

Meat	220 gr.	Sugar	155 gr.
Margarine	135 gr.	Coffee	15 gr.
Fat	60 gr.	Tea 6	gr.
Nahrmittel [1]	190 gr.	Jam	155 gr.
Potatoes	2650 gr.	Bread	1900 gr.
Vegetables	360 gr.	Rye meal	43 gr.

Later in Stalag XIIIC the total amount of food issued per man fell so

low that it gave rise to the onset, once more, of famine oedema, even amongst Australian Army Medical Corps orderlies.

After the trek to the west of Germany some prisoners again became infested with lice, probably from the cattle trucks. In Stalag XIIIC there was a good delousing centre, and once again the system of reception huts–delouser–clean barracks was used to good effect.

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[1] **Prepared foodstuffs.**

VII: MEDICAL SUPPLIES

VII: Medical Supplies

There was in Germany the equivalent of most standard British medical preparations in the way of lotions, powders, solutions, ointments, anaesthetics and sedatives. These were indented for by British medical officers and were apportioned out from central stocks by German dispensers. Some of the earlier sulphonamide drugs (sulphapyridine and sulphathiazole) were supplied to British medical officers by the Germans, but a German sulphaguanidine preparation was not available. Penicillin, of course, was not available.

Throughout the war the German supply to hospitals of cotton bandages, cotton wool and dressings was inadequate, the standard issue being paper bandages and paper wadding. These inferior bandages were also used for German casualties in base hospitals. Fortunately the British Red Cross sent liberal supplies of bandages, cotton wool and lint in its medical parcels for prisoners of war.

Instruments

The original hospital instruments consisted of German field hospital panniers, which were not unlike British surgical panniers. They included collapsible metal operating tables. In some *Lazaretts*, e.g., at Lamsdorf, the Germans also issued a sigmoidoscope, a cystoscope, Paquelin cautery, all instruments for laparotomy, thoracotomy, wiring fractures, plaster of paris work and spinal anaesthesia. Blood transfusion sets had to be improvised.

For intravenous work the Germans had a very useful 2 ccm. syringe with a side inlet on the barrel. Needles were usually of the French or split-eye variety. Silk, cotton or catgut were used for suturing, and Michel clips were obtainable for skin.

Orderlies improvised freely. In tins or towel bundles many gowns and operating sheets were autoclaved. Sheet tin made dishes to keep needles, scalpels, etc. A Westergren tube made an excellent manometer for measuring cerebro-spinal pressure.

Several New Zealand medical officers captured in Greece also had instruments which they had carried with them into captivity, including eye, ear, and throat diagnostic set, stethoscopes, percussion hammers, field surgical and medical companions, the surgical instruments roll from field ambulance panniers, drugs and syringes.

The Greek Red Cross sister in Corinth, Miss Marienthe Anagnostu, also gave instruments from her own small stock to the New Zealand General Hospital staff stationed in the Ionian Palace hotel from 27 April to 10 May 1941.

In Athens the staff of 5 Australian General Hospital were captured with all their instruments. These they used until the prisoner-of-war hospital closed in December 1941. The instruments were then divided among the few remaining medical officers, who took them on into Germany. Major Charters, ophthalmologist of 26 British General Hospital, similarly took the complete set of his instruments and lenses with him into Germany. There they proved a great boon. All these instruments were used throughout captivity and always, specially in the earlier days, proved of immense benefit to doctor and patient alike. Medical officers also purchased equipment in German shops to supplement what was available in the hospitals, and more especially for camp hospitals of large working parties.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VIII: BRITISH RED CROSS MEDICAL SUPPLIES

VIII: British Red Cross Medical Supplies

Until the middle of 1942 the medical parcels sent by the British Red Cross consisted of a general parcel containing cotton wool, safety pins, soap, aspirin tablets and ointment, and a disinfectant parcel. Special parcels containing thermometers and dressing scissors were also sent. It was rightly assumed that dressing trays and kidney bowls were available in Germany, but they were not at all easy to procure.

After 15 June 1942 the War Organisation of the British Red Cross Society and the Order of St. John reorganised the sending of medical parcels. From then on there was an invalid food unit consisting of two parcels – milk and food – and a medical stores unit consisting of four parcels. To each camp and independent hospital was sent a supply of both invalid food and medical stores units. The contents of some of the parcels were distributed from central camps to medical orderlies with small working parties. In the medical stores unit 'Medical 1' was a soap and disinfectant parcel, 'Medical 2' contained soda bicarbonate, Dover's powders, lung balsam, ferri sulphate, zinc ointment, cascara, zinc oxide powder, formalin throat tablets, ammoniated mercury ointment, flexoplast, lint, cotton wool, gauze, ascorbic acid tablets, pile ointment, sulphapyridine tablets, magnesium trisilicate, oxide plaster; in 'Medical 3 and 4' there were some supplies the same as in 'Medical 2', while additional ones were kaoline poultice, A. and D. Oleum Vitamin, TCP burns, aspirin, Bemax, sulphanilamide and toilet paper.

A small local reserve of medical stores units was established in each camp and independent hospital, and a reserve of eight weeks' supply of medical stores units and invalid food units was constituted at Geneva. This latter reserve was to be drawn on only if it transpired that the normal supply direct to camps and hospitals was inadequate. No local reserve of invalid foods was suggested in camps or hospitals because the

unit itself, for packing reasons, had a surplus of 13.2 per cent over the composition considered necessary for current requirements. This supply was addressed direct to Senior Medical Officers to remain a store essentially at their disposal.

It is important to note that the composition of the invalid food unit was based on the assumption that every prisoner, whether well or ill, received a normal food parcel. It was intended not as an addition to the normal food parcel, but as a substitute for such parts of it as the particular ailment of the invalid did not allow him to consume. That meant that the unwanted part of the normal food parcel would either be consumed wastefully by someone else or would become surplus. The British Red Cross Society took steps to impress on all camp leaders and senior medical officers that the latter was the course which must be insisted upon. This resulted ultimately in an accumulation of a considerable reserve of normal food parcels.

Special Supplies

When visiting camps the protecting power would inquire if any equipment was required from England. In 1943 it even requested that prisoner-of-war hospitals ask for more.

A medical officer could make reasonable requests to the British Red Cross Society, London, and expect to have them answered. For example, a microscope was sent to Captain Cribb, RAMC, and used in the laboratory of the hospital at Cosel. In Lazarett Lamsdorf ward sterilising was first done in bowls on the kitchen stove. From England six small electric sterilisers were sent for the six wards of this 450–bed hospital. Some artery forceps were also sent to increase the existing stocks.

Perhaps the most useful equipment sent to eastern Germany was leather and metal for the fashioning of artificial limbs. With able guidance from Lieutenant-Colonel T. H. Wilson, RAMC, an artificial limb workshop was established in Stalag VIIIB-344, Lamsdorf, where remarkable work was done. One of the men in this workshop, Private

Weston, RAMC, went to work in an artificial limb factory at Neisse, Upper Silesia, in May 1944. There he worked with German tools and British Red Cross equipment making standard protheses for limbless prisoners of war who were awaiting repatriation in the 'repatriation' compounds of Stalag VIIIB. Meanwhile, in the camp workshop itself, Private Wood, RAMC, and his team fashioned excellent walking calipers, splints for dropped wrists and dropped feet, or finished 'plaster' beds for those with the spinal caries, etc. These men became craftsmen whose work was of immense value to patient and medical officer alike. Their craftsmanship naturally extended to obtaining some of the German supplies as well, thus enhancing the scope of their effort.

Occupational Therapy

One most important part of the British Red Cross Society's immense activity was the steady supply of occupational therapy materials which it sent regularly to such hospitals as Kloster Haina (for the blind), Königswartha and Elsterhorst (for tuberculosis), and Lazarett Lamsdorf with its general, TB, and mental wards and its large repatriation compound. Raffia, tapestry, weaving, embroidery, woodwork, plastic materials, lino, etc., were most useful.

The Germans in Silesia naturally were offended when the kits of carpentry tools arrived, and released them from their *Abwehr* office only on the understanding that they were returned to German care each night. As usual, such a rule quickly became honoured more in the breach than in observance; but, after any escape from camp, or at the time of any *Abwehr* search, all British Red Cross tools would be thoroughly checked by the Germans.

Red Cross Commissioner, United Kingdom

The Joint Council of the Order of St. John and the New Zealand Red Cross Society had a Commissioner in the United Kingdom throughout the war in the person of Dr Bernard Myers. Frequent meetings took place during the war at British War Organisation headquarters in London,

when the various Red Cross or Joint Council commissioners from the Dominions met the heads of the War Office to discuss matters concerning prisoners of war.

Over a million food parcels were sent to New Zealand prisoners of war by the Joint Council in New Zealand, thus enabling the men to be issued with a parcel weekly in normal times. Owing to the war conditions delays were not infrequent and, when he heard of them, the Red Cross Commissioner did what he could to have things put right. By a wise arrangement British and Dominion prisoners of war had some variation in diet by sometimes receiving British, New Zealand, South African, Canadian or American Red Cross parcels. Each parcel had its attractions and this method of variation tended to avoid monotony. The International Red Cross Committee organised and carried out the tremendous task of delivering food and other parcels intended for each prisoner of war.

The International Committee also arranged the exchange of prisoners of war – the sick who had been passed by Mixed Medical Commissions and some of the protected personnel.

The Red Cross Commissioner was able to arrange, on occasions, for the despatch of drugs, sera, vaccines, or instruments urgently required by a prisoner-of-war medical officer. In addition, material for games and recreation was sent to the camps by arrangement with the branch of the War Office concerned. The co-operation of the Universities of Oxford and London enabled study courses to be sent to the prisoners of war, the British Red Cross supplying the textbooks.

IX: REPATRIATION OF SICK AND WOUNDED PRISONERS OF WAR AND MEDICAL PROTECTED PERSONNEL

IX: Repatriation of Sick and Wounded Prisoners of War and Medical Protected Personnel

As prisoners of war members of medical units were entitled to repatriation as protected personnel under the Geneva Convention, which also included similar provisions for sick and wounded prisoners of war. Repatriation was finally arranged on an exchange basis in a neutral country. The first medical group to be repatriated were 4 medical officers and 22 other ranks, NZMC, and 5 NZDC personnel and stretcher-bearers, who were repatriated from Italy in April 1942 via Smyrna. They reached Alexandria on 11 April. Most had been taken prisoner at Sidi Rezegh in November 1941. In conformity with the British custom it was decided that in 2 NZEF repatriated medical personnel should be employed on a front other than that on which they were taken prisoner. This group was therefore returned to New Zealand in June and some saw further service in the Pacific theatre.

In April, May and June 1943 three further similar drafts of protected personnel were repatriated from Italy. The medical personnel numbered 5 officers and 138 other ranks, while sickness cases also returned were 4 officers and 33 other ranks. In Egypt hospitalisation and medical boarding was arranged for all invalids. At this stage the policy was revised and protected repatriated personnel who desired to remain in 2 NZEF were allowed to do so, it being decided that protected personnel were in a different category. A small number volunteered to remain in the Middle East, but most were returned to New Zealand.

After the capitulation of Italy in September 1943 small numbers of prisoners made their escape and reached Allied lines in Italy in the succeeding months. Some required hospital treatment and medical

boarding.

The Germans at first refused to consider repatriation for anyone but consented after their huge losses at the close of the North African campaign. No fit medical officers were allowed to leave Germany.

On 3 November 1943 the first group of invalids and protected personnel to be repatriated from Germany reached Cairo via Spain. The New Zealand invalids numbered 6 officers and 159 other ranks, including amputees and blind, and protected personnel consisted of 1 officer and 218 other ranks. A like number of Australians was also involved in this repatriation, and as there was no AIF medical organisation in the Middle East at that stage, the hospitalisation, accommodation and return of the Australians was gladly accepted by 2 NZEF medical services. Some were also sent to the United Kingdom via Spain at this time.

All those who were repatriated could tell tales of trial and hardship but their morale was high. They were all unanimous that Red Cross parcels were a major factor in keeping them alive in the period of their captivity. Their appreciation of the Red Cross was such that one group of New Zealanders voluntarily subscribed no less a sum than £1814 to the New Zealand Red Cross Society within a few days of their return to Egypt.

In May 1944 another group reached Egypt from Germany via Spain. It included 1 officer and 13 other ranks as protected personnel and 47 invalids. Repatriation of a much larger number of medical personnel, including officers, was planned for May 1944; and in fact all arrangements were made for the great changeover in British medical staff that would necessarily ensue. At the last moment the repatriation of all fit medical personnel was stopped. The only medical officers from Greece and Crete to be repatriated before the end of the war were those who were recommended by the Mixed Medical Commission, which came once every six months. Then on 8 February 1945 a further group of eighty-two invalids reached Egypt following another exchange with

Germany of sick and wounded prisoners of war.

By March 1945 the Russian advance liberated some thousands of Allied prisoners of war in camps in Poland and East Prussia. Of these, seventy-three New Zealanders reached Egypt via Odessa in March 1945, while there were three medical officers and some other ranks in a group which reached Naples through Odessa on 2 April 1945. With the rapid final advance into Germany a small number of prisoners of war was flown south to Italy in succeeding months, but the bulk of New Zealand prisoners of war reached England by air from western Europe in May 1945. The hospitalisation and medical boarding of the latter group is covered in the section on the New Zealand Medical Services with the Repatriation Group in the United Kingdom.

X: HEALTH OF PRISONERS OF WAR

X: Health of Prisoners of War

It might be surmised that the health of those captured by the enemy suffered by comparison with those who remained in 2 NZEF, but for want of detailed information no accurate survey is possible. Among the wounded there must have been more deaths from wounds in those taken prisoner than was the case among those with wounds of comparable severity who were not captured. Delay in treatment, possible lack of medical supplies and lower standard of surgery, need for early movement, and inadequate hospital facilities must have had their effect. (Of the 1326 wounded some 107 died of wounds.) Those who recovered from their wounds sometimes suffered more than normal disability for want of special treatment or appliances.

Deaths from sickness were not as many as might have been expected, although the death rate per 1000 was over twice as high as that in 2 NZEF. The number seems to have been only 105 out of the total of over 8000 prisoners of war. The causes of death were notified as: pneumonia 12; dysentery 12; meningitis 8; heart 6; neoplasms 5; pulmonary tuberculosis 4; diphtheria 4; toxaemia 4; nephritis 3; peritonitis 3; enterocolitis 3; malaria 2; cachexia 2; other causes 25; with causes not notified in the case of 12 deaths.

The figures show that there was no epidemic responsible for numerous deaths. Probably the greatest threat was from typhus, especially as large numbers of Russian prisoners in Germany died from this disease. The energetic action taken by British medical officers when typhus cases occurred in Lamsdorf camp, with its 10,000 prisoners, in November and December 1941 prevented an epidemic and undoubtedly saved many lives. It is likely that had sulphonamides and penicillin been available freely to the medical officers they would have been able to save the lives of some of those who died from pneumonia, dysentery and

other diseases. Altogether the figures reflect great credit on the British medical staffs caring for the prisoners of war, but the importance of the Red Cross food supplies in maintaining health should not be overlooked. Some of the deaths would have occurred in the natural course irrespective of whether the men were soldiers serving within their own force or prisoners of war or civilians.

In spite of the constant overcrowding of prisoners of war in the camps there was no major outbreak of cerebro-spinal meningitis, although there were occasional cases. Nor was there any major outbreak of typhoid fever, for which the annual injection every May of German standard TAB vaccine must have been responsible, in part at least. Inevitably, there were some cases of dysentery, and amoebic infection was reported to be more common than bacillary. Sporadic cases of diphtheria, scarlet fever and pneumonia occurred.

There was always a small but steady incidence of tuberculosis, bone and joint as well as pulmonary cases, 22 New Zealanders being admitted to the special hospitals at Königswartha and Elsterhorst in Germany, and 20 more cases being diagnosed in England in 1945 after repatriation. Other cases were diagnosed in New Zealand and elsewhere after repatriation. A survey made by War Pensions Branch in 1949 showed that there had been 155 cases among men who had been prisoners of war (omitting the four deaths overseas), of whom 115 were diagnosed by 1945 and 40 in the next four years. The figures are higher than the overall army rate, but apart from privations a contributing factor was that many prisoners of war came from the First and Second Echelons who had not been X-rayed on enlistment. (Eighty-two of the 155 cases were of these echelons and were not X-rayed on enlistment.)

Skin diseases, particularly boils, frequently developed even in otherwise fit men. On working parties it was the commonest complaint, and the incidence of boils was about 50 per 1000 men per month. The main causative factor was thought to be the lack of fresh milk, fresh fruit and vitamins. Speaking generally, diseases of malnutrition were not

very common, though many cases did occur after lengthy periods in places such as Salonika transit camp and after the 600-mile march west from Silesia. The psychoneuroses were not uncommon, but in general appeared to be related to home conditions and domestic difficulties, as disclosed in letters, rather than to environmental conditions. Cases of suicide were few, and some of these arose after actual liberation in men who had previously exhibited no evidence of mental instability. [1]

Deaths other than those from sickness among prisoners of war seem to have been confined in the main to drownings and deaths from air attacks on shipping in the Mediterranean, shootings during escapes and casualties from air attacks. There were 292 deaths other than those from sickness, and over half of these, some 148, were from drownings or wounds as the result of the torpedoing of two ships en route across the Mediterranean from North Africa in December 1941 and August 1942. Some twenty-five were shot attempting to escape from camps or in making their clandestine way across Europe, and some twenty-four were killed as the result of air attacks, presumably Allied, on localities where they were held prisoner, while two were killed in battles between the Germans and Russians. A few were killed in railway accidents and a few in mines, etc., while on working parties. As there is no record of cause of death in over fifty cases, it is not possible to classify the causes of death in detail, and the figures quoted in the categories above might be increased if all the causes of death were known.

PRISONER-OF-WAR FOOD PARCELS

Net Weights of Food in Standard Parcels

Commodity	*British (Average) oz.*	*Canadian oz.*	*New Zealdnd oz.*	*American oz.*	*Argentine (Parcel Equivalent) oz.*
Biscuits	10	16		7	14
Cheese	3¼	4	13	8	17¼
Chocolate	4	5	6	8	5
Fish	8	11¾		8	
Fruit, etc.	8¼	13	6	15	7
Preserves	10½(Jam	16 (Jam)	14 (Jam)		11¼ (Honey or

	or syrup)				jam)
Fats	8 (Marg. or butter)	16 (Butter)	16 (Butter)	16 (Margarine)	13½ (Butter or marg.)
Meat	35	22½	28	24	38
Milk	14 (Condensed)	16 (Dried)	14 (Av. of milk, honey, and syrup)	16 (Dried)	8¾(Condensed)
Milk with coffee			13½		
Sugar	4	8	8	8	8½
Tea	2	4	3½	4 (Coffee)	2
Vegetables	6¾				2¼
Cocoa	3		3		
Condiments	1	1			
Eggs, dried	1				1½
Oatmeal, etc.	6¼		6		
Liver paste				6	
Orange concentrate				4	
Sweets	½				
Total net weight	125½	133¼	131	124	129
Soap				4	4¾
Cigarettes				4	
Boxes, tins, and packing material	50½	42¾	45	44	?
Total gross weight	176	176	176	176	?

Nutrative Value of Parcels plus German Camp Rations

	Catoritt	*Protein gr.*	*Calcium mg.*	*Iron mg.*	*Vit. A i.u.*	*Vit. BI i.u.*	*Riboflavin mg.*	*Nicotinic Acid mg.*	*Vit. C mg.*
New Zealand parcel	2022	49	824	7	2876	87	1.0	3.0	0

German rations *	**1750**	**63**	**270**	**15**	**1120**	**580**	**1.1**	**15.0**	**124**
Total	**3772**	**112**	**1094**	**22**	**3996**	**667**	**2.1**	**18.0**	**124**
Optimum requirements	**3000**	**70**	**800**	**12**	**4000**	**600**	**2.2**	**15.0**	**75**
Shortage or excess	**+772**	**+42**	**+294**	**+10**	**+4**	**+67**	**-0.1**	**+3.0**	**+49**

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[1] **Diseases of prisoners of war are dealt with in more detail in the clinical volume, *War Surgery and Medicine*.**

* **Figures of camp rations up to April 1944 supplied by War Office.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

PART III — THE MEDICAL SERVICES OF THE ROYAL NEW ZEALAND NAVY 1938-46

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[UNTITLED]

by

Surgeon Captain H. K. CORKILL, OBE, VRD, RNZNVR (Director of Naval Medical Services, 1941–46)

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

INTRODUCTION

Introduction

For all war purposes, the Royal Navy and the navies of the various British Dominions were combined in a single organisation in which personnel, ships and equipment were intermingled and freely pooled in a common plan. Under those circumstances, the Royal New Zealand Navy cannot be regarded as a separate self-contained and independent force, its war story being inextricably bound up with that of the Royal Navy in various parts of the world.

Although New Zealand maintained a considerable number of ships and establishments at home and overseas, the Dominion's greatest contribution to the naval war effort was the provision of personnel, selected and entered into the Royal New Zealand Navy but despatched to the United Kingdom after brief preliminary training for service in the Royal Navy. These drafts, which included many Fleet Air Arm personnel and formed numerically a major part of the Royal New Zealand Navy, did not serve overseas in New Zealand units, being dispersed throughout the Royal Navy in all types of ship and in every theatre of operations. In respect of this considerable body of men, the New Zealand Naval Medical Service was concerned only with initial selection, care during early training, and final boarding on return to New Zealand.

On the other hand, ships and establishments which were regarded as essentially New Zealand units carried varying proportions of Royal Navy personnel, while Royal Navy ships, throughout the war, made repeated demands upon the medical services and facilities of New Zealand base establishments.

The history of the medical and ancillary services of the Royal New Zealand Navy is not therefore the record of an independent organisation dealing specifically with the medical problems of New Zealanders on naval service, but the story of a small share in the naval medical services of the British Commonwealth, conforming to the general plan of the Royal Navy, but modified by available resources and adapted to local conditions.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 1 — PRE-WAR ORGANISATION OF THE NAVY IN NEW ZEALAND

CHAPTER 1
Pre-war Organisation of the Navy in New Zealand

I: Permanent Forces

Constitution and Medical Staffing

During the period preceding the war, the Navy in New Zealand and adjacent Pacific waters was represented by ships and establishments of the New Zealand Division of the Royal Navy, for the maintenance of which the New Zealand Government had assumed responsibility, together with two sloops of the Royal Navy, based for convenience on New Zealand, but maintained entirely by the United Kingdom. On a peacetime manning scale, the medical requirements of this small force, including the Royal Navy components, were supplied by 5 medical officers, 1 dental officer, and 12 sick-berth ratings.

Since the inception of the New Zealand Division of the Royal Navy in 1920, it had been the policy of successive governments to increase the proportion of New Zealanders serving therein by a steady influx of ratings trained in the base depot, HMS *Philomel*, at Devonport, Auckland. By 1939 this proportion had risen to about 54 per cent of the total ratings, though it was much smaller in some special categories such as the sick-berth branch, which was still supplied in the main by Royal Navy ratings.

The New Zealand Navy possessed only some half dozen officers of its own, the remainder, including all medical and dental officers, being supplied on loan from the Royal Navy for periods of three years. Occasionally such loan officers had included a New Zealander belonging to the medical or dental branch of the Royal Navy and serving a commission on the New Zealand Station as part of his naval career.

Preliminary discussions had been initiated by the Naval Board in 1939 with a view to entering medical officers for permanent service in the New Zealand Navy. Those consulted had noted particularly the

limited scope which such a career appeared to offer, and stressed the desirability of opportunities for hospital experience and periods of exchange into the larger fleet units of the Royal Navy. The outbreak of war interrupted these discussions before any conditions of service could be determined.

Medical Administration

Until 1938 the administration of this small medical organisation was the responsibility of the Squadron Medical Officer, serving afloat in the ship carrying the Commodore Commanding New Zealand Station. In that year, consequent upon the appointment of a Chief of Naval Staff at Navy Office, Wellington, some of these medical administrative matters were transferred to the shore establishment, the senior medical officer, HMS *Philomel*, being appointed Director of Naval Medical Services in addition to his normal duties. The appointment of Squadron Medical Officer was however retained, as certain important administrative responsibilities remained in the hands of staff officers serving afloat with the Commodore Commanding New Zealand Squadron.

Naval Base, Auckland

The base establishment at Devonport, Auckland, which included the training depot *Philomel*, the dockyard and naval stores, had been undergoing a process of expansion and development over a number of years to cope with the growth of the Navy and the requirements of the larger ships serving on the station.

Unfortunately, the medical department had not been able to share in this development and was still housed in the original small hut which had been regarded from the first as a temporary expedient. The fact that civil hospital accommodation was always readily available in Auckland for naval personnel had no doubt influenced the decision to defer the erection of a more commodious establishment though plans had been long prepared. The existing building, though styled ‘sick quarters’, provided accommodation no better than that in sea-going ships, while

the equipment was in many respects below the standard of the cruisers. It afforded accommodation for minor illness, including isolation cases and venereal patients, but was inadequate for the training of sick-berth ratings, New Zealand entries into that branch being sent to Flinders Naval Depot, Australia, for the necessary instruction. The small establishment performed a very useful function within its limited capacity, dealing with such cases of minor injury and illness which were to be expected in a training depot, conducting final medical examinations of recruits and medical boards of survey on invalids, and maintaining a small pool of sick-berth ratings for replacement of those at sea.

Medical Stores

Medical stores for all ships and establishments were obtained from the United Kingdom, each ship rendering a demand half-yearly on one of the Royal Navy medical depots, while extraordinary demands were met by local purchase. Apart from some emergency chests, no reserve medical stores were held in the base. It became apparent, however, by 1939 that dependence on local purchase would be unwise owing to the increased demands of civil hospitals. Increased demands for stores were therefore placed in the United Kingdom with a view to creating a reserve in New Zealand, and the arrival of these consignments in the first two years of the war permitted the establishment of a base medical store from which ships were subsequently able to draw all necessary supplies.

It was perhaps fortunate that New Zealand naval commitments in the early months of the war did not impose a greater strain on the meagre stores available, but the experience of that period indicates the necessity for developing and maintaining adequate reserves for such emergencies, and the unwisdom of depending on outside sources of supply after war has broken out. For example, the relief which had been confidently expected from orders placed by the Coates Mission to the United States in 1941 was suddenly cut off when that country herself became actively engaged in hostilities, and although some assistance

was obtained through the Far Eastern Supply Group, the quality of these stores left much to be desired.

The United Kingdom, however, despite the steady drain on her supplies and the difficult shipping position, continued to supply the bulk of our naval medical requirements, and it is pleasing to record that in the closing stages of the war New Zealand was able to offer much of these stores to ships of the British Fleet refitting in Auckland.

II: Reserve Forces

To provide for immediate expansion in the event of war, Naval Reserves of trained and partly trained personnel had been gradually built up in New Zealand over a period of years. In the medical branch these consisted of eight medical officers of the Royal Naval Volunteer Reserve (New Zealand Division), seven of whom were fit for full active service. No reserve of sick-berth staff existed apart from one or two ex-naval sick-berth ratings.

The war of 1914–18, in which New Zealand had few naval commitments, had not established any precedent upon which the possible medical requirements could be based. British experience of that war had suggested that the function of RNVR medical officers was to provide immediate additions to medical complement required in war, to take medical charge of ships when qualified by experience, and by reason of their civil clinical experience to provide specialist services ashore and afloat. Medical administration and staff duties had, however, remained entirely in the hands of permanent officers of the naval medical service. There had been no reason to expect that New Zealand would follow any different line, but as events were to show in the war of 1939–45, the Reserve medical officers in New Zealand were required to take over the greater part of the medical organisation from the outbreak of war, and by the middle of 1941 had assumed the whole responsibility.

Available medical officers of the RNVR (NZ Division) had peacetime experience varying from one to twelve years in the Reserve. In addition

to training with their respective shore units, all had served short periods in sea-going ships to familiarise themselves with naval medical routine, while one had served in a previous emergency for some months as senior medical officer of a cruiser.

It is important to note that the peacetime obligation entered into by members of the RNVR implied immediate availability for overseas service. While it was true that mobilisation of the Naval Reserves could only be effected by proclamation, it was well understood that naval preparedness might create a demand for services before a state of emergency had actually been declared. It is to the credit of the Naval Reserves in New Zealand that calls for services in a number of different capacities were answered promptly and willingly in the days immediately preceding the outbreak of war.

One Reserve medical officer, Surgeon Lieutenant Pittar, [1] an Auckland eye specialist, joined the *Achilles* at two hours' notice on 29 August 1939 on her departure for an unknown destination. The ship returned to New Zealand six months later after lengthy patrols which had culminated in the Battle of the River Plate, but this officer proceeded overseas again almost immediately to serve the remainder of the war in his specialist capacity in Royal Navy establishments. His senior medical officer in the *Achilles* was also a New Zealander, Surgeon Lieutenant Hunter, RN, [2] who was serving on loan from the Royal Navy.

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[1] Surg Cdr C. A. Pittar, VRD; Auckland; born Auckland, 11 Sep 1905; ophthalmic surgeon.

[2] Surg Lt C. G. Hunter, DSC, RN; born 31 Jan 1913; medical practitioner; reverted to RN Jul 1940.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: PERMANENT FORCES

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 2 — THE OUTBREAK OF WAR

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: MOBILISATION

I: Mobilisation

IN referring to the naval forces of the Dominion the term Royal New Zealand Navy is used throughout the remainder of this narrative, although that designation was not conferred until late in 1941. Along with this change of title, the Royal Naval Reserve (New Zealand Division) and the Royal Naval Volunteer Reserve (New Zealand Division) became known respectively as the Royal New Zealand Naval Reserve and the Royal New Zealand Naval Volunteer Reserve, which new terms are also used throughout the war history.

Naval mobilisation, which commenced in New Zealand on 2 September 1939, required the immediate services of the Reserve medical officers for examinations at the Naval Base, Auckland, and in the RNZNVR depots of the four main cities. Thanks to peacetime planning, the organisation worked smoothly, and within a matter of hours selected personnel were passing through these centres for immediate service at sea or in coast defence stations. In the early stages those called up consisted entirely of ex-naval officers and ratings and members of the RNZNR and RNZNVR, the urgent requirement being for trained personnel to bring ships to war complement, to provide gun crews and signalmen for merchant ships and to establish harbour patrols and naval defence posts. Except in certain special categories for which no reserves existed, no general appeal for recruits was made by the Navy for many months after the outbreak of war.

Although at this early date the examination did not include an X-ray of the chest, a high medical and dental standard was demanded as with few exceptions fitness for sea service was required of all candidates. Complete figures are not available, but out of one group of 321 reservists examined only ten were rejected. Some of the older men and those who had been out of the service for a number of years had not unnaturally

developed visual and other defects which limited their employment, and a number of hitherto undetected cases of defective colour vision were discovered among officers and senior ratings who had originally entered before examination with the Edridge Green lantern and Ishihara plates had become standard routine, and whose defects now precluded them from service afloat. Considerable care had been taken in peacetime in the selection of recruits for the RNZNR and RNZNVR, with the result that medical rejections from that group at mobilisation were very few.

It was, however, necessary to defer the entry of a considerable number of men for urgent dental attention, as at the time only one full-time dental officer was employed on naval service. This work was carried out with the least possible delay by a panel of civilian dentists throughout the country, though some of the reservists in their keenness to serve afloat obtained the necessary treatment at their own expense from private dentists.

One section of mobilised personnel requires special mention. Following an Admiralty scheme, arrangements had been made for the entry of crews of requisitioned trawlers and other merchant vessels taken over for naval purposes, under what was termed a T.124 agreement. This was, in effect, a form of group entry on special conditions, differing in many important respects from a normal naval enlistment. This is not the place to discuss the general merits and demerits of the scheme, which was ultimately abandoned, but a particularly bad feature was the omission of arrangements for proper examination, entry standards and subsequent medical care. It had apparently been assumed that any man who was making his living upon the sea in peacetime would be of good enough physical standard for naval service and adaptable to service conditions in time of war, but the experiment demonstrated most forcibly the necessity for clearly defined standards throughout all branches of naval service, and careful selection of all personnel.

Replacement of Royal Navy Medical Officers by Royal New Zealand

Naval Volunteer Reserves

As soon as the immediate requirement of mobilisation had been completed, the medical officers of the RNZNVR were given appointments afloat, replacing the Royal Navy medical officers previously employed and increasing the medical complement to the authorised war strength. The process had necessarily to be gradual, reliefs being effected when ships returned to New Zealand from duty at sea, but it was completed early in 1940, when the sole remaining Royal Navy medical officer was the Director of Naval Medical Services at Auckland, Surgeon Commander E. E. Malone, RN, who had arrived in December 1939 as a relief for Surgeon Commander R. G. Anthony, RN, whose period of loan service had expired.

Surgeon Lieutenant Ewart [1] joined the *Leander* in September 1939, the relief in that ship being completed early in October by the appointment of Surgeon Commander Corkill, [2] who became Squadron Medical Officer vice Surgeon Commander J. J. Keevil, RN.

Surgeon Lieutenant-Commander McPhail [3] was selected as medical officer for the *Monowai*, the well-known passenger liner which was being converted into an armed merchant cruiser. In the meantime this officer was employed in the *Philomel*, rendering much-needed assistance in the depot establishment.

On the return of the *Achilles* from the River Plate early in 1940, her medical officers were replaced by Surgeon Commander Perry [4] and Surgeon Lieutenant Helmore, [5] the first-named becoming Squadron Medical Officer in May 1940 when the *Leander* left the station; he retained that appointment till its abolition in November 1940, when the whole of the administration was transferred to the shore-based Director of Naval Medical Services.

Half-way through 1941, Surgeon Commander Malone reverted to the Royal Navy, being replaced by Surgeon Commander Corkill, RNZNVR, the first New Zealander to hold the appointment of Director of Naval

Medical Services. This change marked the assumption of complete responsibility for the medical services of the RNZN by officers of the RNZNVR, a policy which continued in force throughout the war.

The remaining medical officers of the RNZNVR, Surgeon Commander Harty [6] and Surgeon Lieutenant Pittar, were placed at Admiralty disposal and travelled to the United Kingdom with a large draft of reserve personnel who were at the time surplus to local requirements. At a later stage, the former was recalled for duty in New Zealand ships, while the latter remained with the Royal Navy throughout the war.

It was upon these original medical officers that the main responsibilities of senior appointments ashore and afloat remained throughout the war. All of them had been required to drop their civil practices at very short notice to fulfil the obligation entered

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[1] Surg Cdr I. B. Ewart, VRD; born 3 Oct 1900; medical practitioner; died 28 Jan 1949.

[2] Surg Capt H. K. Corkill, OBE, VRD; born Wellington, 21 Nov 1897; surgeon; BEF, France (wounded Apr 1918); Director, Naval Medical Services, RNZN, Jun 1941–Feb 1946; died 8 Aug 1954.

[3] Surg Capt E. S. McPhail, CBE, VRD, m.i.d.; Christchurch; born Invercargill, 25 Dec 1899; surgeon; later Director, Naval Medical Services, RNZN.

[4] Surg Capt A. Perry, OBE, VRD; Dunedin; born Wellington, 18 Apr 1899; medical practitioner.

[5] Surg Lt-Cdr F. W. Helmore; born England, 11 May 1901; medical practitioner; died 28 Aug 1948.

[6] Surg Cdr E. R. Harty, VRD; Dunedin; born Wellington, 30 May 1900; medical practitioner.

into in peacetime and all continued to serve in whatever capacities were required of them for periods of five or more years, and in most cases till the cessation of hostilities.

Entry of Additional Medical Officers

With the exception of one surgeon lieutenant entered on a short-service engagement in the Royal New Zealand Navy in 1940, no increase in medical staff was necessary before 1941, though numerous applications were received in the early months of the war. During 1940 an appeal was received from the United Kingdom for young medical officers for service with the Royal Navy, but in view of the increasing military demands upon the medical manpower of the Dominion, the New Zealand Government felt unable to accede to the request.

Early in 1941, however, increased naval commitments on the New Zealand Station, in particular an intensive recruiting programme for service with the Royal Navy, the opening of a new large training establishment, and additions to the force of minesweeping and auxiliary vessels in local waters, required some expansion of the small medical service. The immediate need was met by the appointment of four medical officers to temporary commissions in the Royal New Zealand Naval Volunteer Reserve. In subsequent years a further twelve such appointments were made at intervals, and in addition two New Zealand doctors who were already abroad and had joined the RNVR in England were transferred to the RNZNVR.

With the exception of four, entered in the closing months of the war, all these medical officers served overseas in ships of the Royal New Zealand Navy, some of them succeeding in due course to responsible charge appointments ashore and afloat. Without the previous association with the Navy which had been afforded their colleagues in the permanent RNZNVR, it was perhaps not so easy for these new medical officers to adjust themselves to the life of a naval medical

officer, but almost without exception they fitted admirably into the organisation. Most of them were fresh from resident hospital appointments, bursting with zeal for increased clinical experience, only to find that such opportunities were limited, that much of the medical work consisted of comparatively dull and uninteresting routine, and that in a sea-going ship the medical officers are expected to undertake various duties outside their chosen professions. These conditions could easily produce a feeling of frustration in one who regarded himself as merely a doctor in uniform, but to those who were prepared to take a full part in the work and life of a ship there was ample opportunity for useful and interesting employment. A particularly good example of the lengthy war service given by some of the temporary medical officers is that of Surgeon Lieutenant-Commander Walton, [1] who served almost continuously at sea from 1941 to 1947, first in junior appointments in the *Achilles* and *Gambia* and later as senior medical officer of the *Achilles* and *Bellona*.

Samambula Camp, near Suva, November 1940

Samambula Camp, near Suva, November 1940

Namaka Camp, Nandi, Fiji

Namaka Camp, Nandi, Fiji

Lieutenant-General B. C. Freyberg at Bouloupari, New Caledonia, June 1943

Lieutenant-General B. C. Freyberg at Bouloupari, New Caledonia, June 1943

Brigadier F. T. Bowerbank (left), Brigadier J. M. Twhigg and Lieutenant-Colonel G. F. V. Anson at Medical Headquarters, New Caledonia

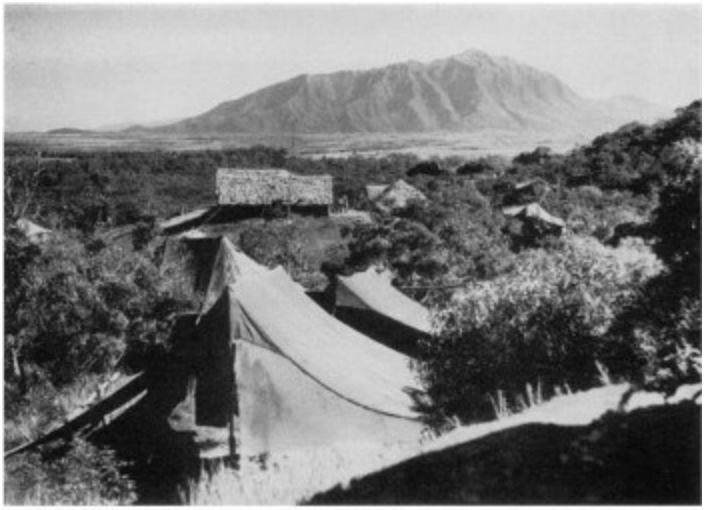
Brigadier F. T. Bowerbank (left), Brigadier J. M. Twhigg and Lieutenant-Colonel G. F. V. Anson at Medical Headquarters, New Caledonia

Major-General H. E. Barrowclough talks with a Fijian patient in a tented ward of 4 NZ General Hospital at Boguen, New Caledonia

Major-General H. E. Barrowclough talks with a Fijian patient in a tented ward of 4 NZ General Hospital at Boguen, New Caledonia

A ward in 4 NZ General Hospital, Dumbéa, New Caledonia

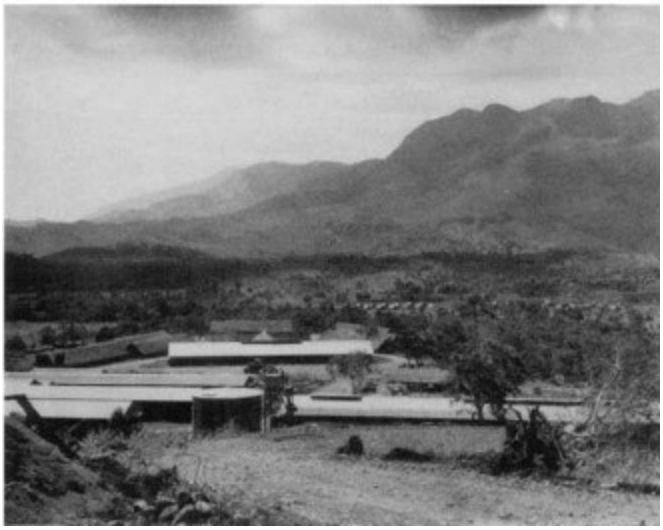
A ward in 4 NZ General Hospital, Dumbéa, New Caledonia



The camp site of 22 NZ Field Ambulance at Tinipp, New Caledonia.
The hospital is in the centre

The camp site of 22 NZ Field Ambulance at Tinipp, New Caledonia. The hospital is in the centre

A view of 4 NZ General Hospital, Dumbéa, from the Sisters' lines



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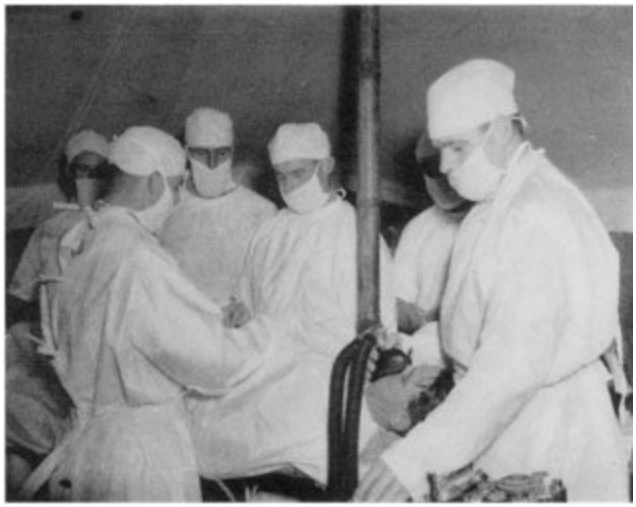

The operating theatre of 2 NZ Casualty Clearing Station at Guadalcanal, August 1943

The operating theatre of 2 NZ Casualty Clearing Station at Guadalcanal, August 1943

A ward in 2 NZ CCS, Guadalcanal, November 1943

A ward in 2 NZ CCS, Guadalcanal, November 1943

Officers of 2 NZ CCS, Guadalcanal
Back row (left to right): Lt G. F. Tegg, Capt C. G. D. Halstead, Capt S. Jolly, Capt M. W. Gatman, Capt R. G. McDonald, Capt E. T. Saunders, (Not identified). *Front row:* Capt G. F. Rich, Maj J. Dempsey, Lt-Col S. L. Wilson, Col N. C. Speight, Maj C. G. Riley, Lt W. F. Green, Rev. J. W. Parker

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A view of the Casualty Clearing Station wards on Guadalcanal

A view of the Casualty Clearing Station wards on Guadalcanal

RAP and patients arrive at Timbala Bay, Vella Lavella

RAP and patients arrive at Timbala Bay, Vella Lavella

Wounded men being evacuated by landing craft, Pakoi Bay, Vella Lavella

Wounded men being evacuated by landing craft, Pakoi Bay, Vella Lavella

Captain R. P. Tuckey (middle, front row) and RAP staff, Vella Lavella

Captain R. P. Tuckey (middle, front row) and RAP staff, Vella Lavella

A native outrigger canoe used for carrying supplies and bringing out wounded, Vella Lavella

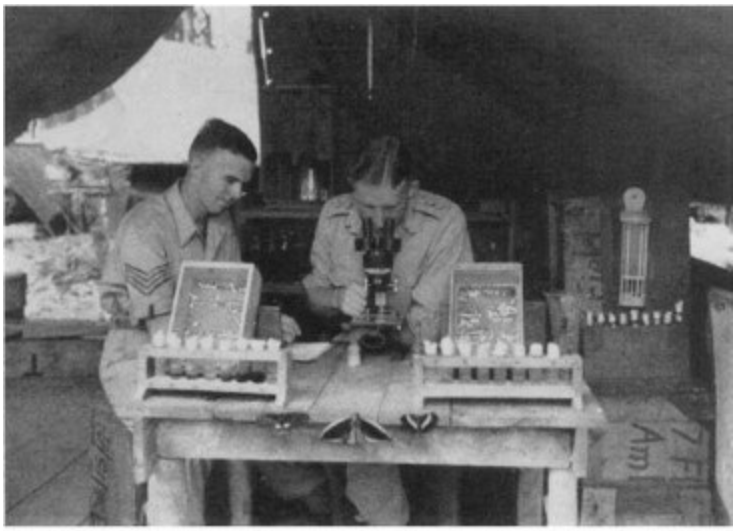
A native outrigger canoe used for carrying supplies and bringing out wounded, Vella Lavella

Wounded from the Treasuries on the lift of an LST

Wounded from the Treasuries on the lift of an LST

Stretcher-bearers unloading wounded from a barge during the Treasury action

Stretcher-bearers unloading wounded from a barge during the Treasury action



Malaria Control Unit, Treasury Islands

Malaria Control Unit, Treasury Islands

23 Field Company RAP

23 Field Company RAP

Indian pattern tents, raised high on poles to give added ventilation and headroom, form the wards of the 22 Field Ambulance hospital near Tanaheran, Nissan

Indian pattern tents, raised high on poles to give added ventilation and headroom, form the wards of the 22 Field Ambulance hospital near Tanaheran, Nissan

An operation being performed in 22 Field Ambulance theatre at Tanaheran, April 1944

An operation being performed in 22 Field Ambulance theatre at Tanaheran, April 1944

Treating yaws at Pinipel Island

Treating yaws at Pinipel Island

One of the few reliable fresh-water wells on Nissan at 14 NZ Brigade Headquarters

One of the few reliable fresh-water wells on Nissan at 14 NZ Brigade Headquarters

A ward in the hospital at Kokkinia, Athens, 1941

A ward in the hospital at Kokkinia, Athens, 1941

A group of limb-fracture patients treated in the prisoner-of-war hospital at Kokkinia, May-September 1941

A group of limb-fracture patients treated in the prisoner-of-war hospital at Kokkinia, May-September 1941

New Zealand medical and dental officers from Greece and Crete at Stalag VIIIB, November 1941

Front row (left to right): Capt J. le B. Warren, Capt R. S. Stewart, Maj S. G. de Clive Lowe, Lt-Col W. H. B. Bull, Rev. J. S. Hiddlestone, Capt O. S. Hetherington. *Back row:* Rev. R. J. Griffiths, Capt J. T. Dodgshun, Capt P. Noakes, Capt P. N. R. McDonald, Maj L. H. V. Longmore, Capt D. A. Ballantyne, Capt E. Stevenson-Wright, Capt H. M. Foreman, Rev. W. E. W. Hurst

New Zealand medical and dental officers from Greece and Crete at Stalag VIIIB, November 1941

Front row (left to right): **Capt J. le B. Warren, Capt R. S. Stewart, Maj S. G. de Clive Lowe, Lt-Col W. H. B. Bull, Rev. J. S. Hiddlestone, Capt O. S. Hetherington.** ***Back row:*** **Rev. R. J. Griffiths, CApt J. T. Dodgshun, Capt P. Noakes, Capt P. N. R. McDonald, Maj L. H. V. Longmore, Capt D. A. Ballantyne, Capt E. Stevenson-Wright, Capt H. M. Foreman, Rev. W. E. W. Hurst**

Capt J. Borrie, NZMC, and Cpl T. Core, RAMC, in a corner of the MI Room at Blechhammer working camp, February 1943

Capt J. Borrie, NZMC, and Cpl T. Core, RAMC, in a corner of the MI Room at Blechhammer working camp, February 1943

Lunch from Red Cross parcels in a prisoner-of-war camp, Germany

Lunch from Red Cross parcels in a prisoner-of-war camp, Germany

Repatriated prisoners of war arriving at Alexandria

Repatriated prisoners of war arriving at Alexandria

The prisoner-of-war *Lazarett* at Cosel, Upper Silesia
Capt A. N. Slater is holding the white dog and Capt H. M. Foreman is behind him. Second from right (standing) is S-Sgt Stewart

The prisoner-of-war *Lazarett* at Cosel, Upper Silesia Capt A. N. Slater is holding the white dog and Capt H. M. Foreman is behind him. Second from right (standing) is S-Sgt Stewart

A barrack interior at Stalag VIIIA

A barrack interior at Stalag VIIIA

The very limited number of medical officers authorised for the Royal New Zealand Navy even at the peak of mobilisation made it impossible to hold any drafting margin in home establishments, and resulted in considerable difficulty when urgent reliefs became necessary for ships abroad. Even when the enlistment had been approved by the Medical Manpower Committee, considerable delay was often experienced in obtaining the release of selected doctors from the hospital boards by whom they were employed. It followed that the replacement of a medical officer serving overseas usually left some shore establishment understaffed while reliefs were in transit, and it was seldom possible to provide medical officers with the full leave to which they were entitled.

Temporary assistance in home establishments was obtained on more than one occasion from army medical officers and from ships of the Royal Navy engaged on special service on the New Zealand Station or undergoing refit in Auckland. The base medical facilities of the Royal New Zealand Navy were always freely available to such ships, but this would not have been possible without some reciprocal assistance when staff was short.

Bearing in mind that the naval medical service undertook the responsibility of examining some 14,000 candidates for the Navy and conducted all medical boards and examinations on discharge, in

addition to the routine care of serving personnel averaging 6157 over the whole period of the war, it cannot be said to have been overstaffed or wasteful of medical manpower.

Entry and Training of Sick-berth Staff

The immediate requirements of the sick-berth staff on mobilisation were provided by the re-entry of former naval sick-berth ratings, by the recall from Australia of partly trained ratings, and the entry of a small number of volunteers with St. John Ambulance or similar basic training. Failing adequate training facilities at the Base at this period, much of their naval sick-berth instruction had to be deferred till they were drafted to sea. Despite this initial handicap, most of these entries proved highly satisfactory, some of them later qualifying for advancement and for specialist ratings and occupying responsible positions in ships and shore establishments.

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[1] Surg Lt-Cdr R. J. Walton; Auckland; born 30 Aug 1914; medical practitioner.

In 1941 the completion of the new sick quarters at Devonport permitted the establishment of a training centre for sick-berth staff, from which time all entries, either for the permanent service or for hostilities only, received full courses of instruction before draft to sea. In addition to tuition from medical officers, nursing sisters and senior ratings, elementary training in pharmacy and dispensing was given by the civilian pharmacists appointed to the Dockyard staff in charge of medical stores. Opportunities were given to a limited number of suitable ratings to qualify for the specialist ratings of Theatre Assistant and X-ray Technician.

Periodic examinations, in conformity with the standards of the Royal Navy and open not only to New Zealand ratings but to those from other British ships, were held for advancement to Leading Sick-Berth Attendant, Sick-Berth Petty Officer and Sick-Berth Chief Petty Officer.

The promotion of New Zealand ratings to these higher rates as they became qualified permitted the gradual return to the Royal Navy of most of the senior sick-berth ratings who had been serving on loan, though some were retained until the end of the war.

For most of the war, the established complement of the sick-berth branch of the Royal New Zealand Navy did not provide for any rank above Chief Petty Officer, but in 1945 authority was obtained for the appointment of the first Warrant Wardmaster, Mr S. A. Higgs, who had served continuously on loan from the Royal Navy since 1937 as a senior sick-berth rating and had qualified by examination for warrant rank in 1943. On him had fallen much of the responsibility of organising the training school and the development of Sick Quarters, Devonport, into a hospital capable of providing an efficient service for the Royal New Zealand Navy.

From a pre-war strength of 12 ratings, the sick-berth branch expanded to a peak complement of 57, with an additional 7 Wren sick-berth ratings for special duty with the WRNZNS. Although sufficient recruits were obtained for naval requirements, it was disappointing that more men of a suitable type did not volunteer for this branch. It would appear that most New Zealanders choosing naval service were more attracted to branches offering active excitement or mechanical opportunities, or to those which held prospects which might be followed to advantage in later civil life.

An efficient sick-berth staff is a most important part of any naval medical service and requires careful selection. Except for some relaxation of eyesight standards, the physical requirements should be as strict as for any other branch of the Navy, and it is essential to have men of good education, capable of understanding the wide range of technical subjects included in their training. In a small navy, where establishments are not large enough to justify the employment of whole-time specialists such as dispensers and radiographers, it is necessary for the whole sick-berth staff to receive basic training in all departments of their work.

With few exceptions, the ratings of the New Zealand sick-berth branch performed their varied duties with commendable success. In the cruisers they were of the greatest assistance to their medical officers, not only in nursing duties but also in dispensary and laboratory work and on occasions as assistants at operations, while in the small ships, without medical officers and with limited facilities, some of them were faced with difficult problems requiring resource and initiative which they handled with great credit.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

II: THE MEDICAL SERVICES OF THE ROYAL NEW ZEALAND NAVY AFLOAT

II: The Medical Services of the Royal New Zealand Navy Afloat

The principal medical commitment at sea throughout the war was that provided by the two cruisers, initially the *Leander* and *Achilles*, and in the later stages *Gambia* and *Achilles*. An original war complement of two medical officers was subsequently raised to three in each ship, while the sick-berth staff of each cruiser was also eventually increased to six ratings.

It was never claimed that the normal medical work of a ship carrying 900 men would keep three medical officers fully employed, the increased establishment being the result of experience in similar ships of the Royal Navy, where it had become apparent that provision had to be made for the dispersal of an adequate number of trained medical personnel throughout a ship to ensure the maintenance of medical and surgical facilities in the event of serious damage with heavy casualties. Medical officers were, however, considered an integral part of the complement and were kept well occupied with other essential but non-medical duties.

One medical officer and three sick-berth ratings were employed in the armed merchant cruiser *Monowai* from 1940 to 1943, another medical officer was carried during 1943 and 1944 in the 25th Anti-Submarine Minesweeping Flotilla in the South-west Pacific, while sick-berth ratings were provided for a number of corvettes, minesweepers and other small craft.

The appointment to the 25th Flotilla illustrates some of the practical difficulties in arranging for the care of small detached units. It was created out of an effort to provide naval medical attention for a total complement of 325 in a group of five ships. In practice, however, it was found that the ships were so scattered in their employment that the

medical officer's work was almost exclusively limited to his own ship's company of seventy-five at a period when there was a grave shortage of naval doctors for other appointments. An alternative plan of establishing him ashore in one of the island bases was equally unsatisfactory owing to the dispersal of the ships and their use of different harbours, and the appointment was finally terminated after eighteen months. Each vessel was, however, supplied with a trained sick-berth rating, who was able to obtain medical assistance without much delay from one or other of the numerous United States and British bases in the area.

The attached table of the disposition of the New Zealand ships carrying medical officers shows the variety of operational areas in which the cruisers were employed. [1] Most of this work was in tropical waters, but it sometimes involved patrols and searches in latitudes south of New Zealand, where duffel clothing was necessary for personnel above decks, and for periods in the North Atlantic under winter conditions. Though the incidence of sickness and injury was generally low, and at no stage reached alarming proportions, successive medical officers in these sea-going appointments were required to deal with a wide range of medical and surgical conditions.

Medical Equipment Afloat

The establishment of medical stores and equipment was based on current Royal Navy scales, but it was found desirable to increase the number and range of surgical instruments. The sick bay of each cruiser carried a small portable X-ray unit, microscope and simple laboratory equipment, and efficient sterilisers for dressings and instruments, but there was insufficient refrigerated space for the proper stowage of lymph, sera and other products liable to deterioration. The newer drugs and chemotherapeutic agents were provided as they became available, and while endeavours were made to meet reasonable demands for additions to the range of drugs and appliances, the limited stowage space and the local supply position in New Zealand restricted issues to practical necessities and items likely to be of general use.

The equipment, though not elaborate, proved satisfactory in practice, no serious complaint being made of inadequacy in any of the special emergencies that did arise. Naturally, some improvisation and adaptation was sometimes necessary, utilising the skill and resources of the ships' artificers of various branches.

Blood products were not available at the beginning of the war and, apart from a rather meagre supply of glucose solution, ships had to rely on their own donors for emergency transfusions. In 1941 Auckland Hospital laboratory began the production of unconcentrated blood serum, the Navy assisting to provide some of the donors and obtaining supplies for issue to ships. The necessary refrigerated space for the preservation of this product was not always available, and it was replaced by American dried plasma and British dried serum, both of which were in abundant supply in the later years of the war.

Surgery at Sea

Battle Casualties: **As will be seen in the table of casualties, a very small proportion are classified as wounded in action, as compared with the numbers killed by enemy action. This disproportion is typical of naval warfare and is due to losses of ships under circumstances which may permit few survivors. The Royal New Zealand Navy lost two of its smaller ships, *Puriri* and *Moa*, fortunately with moderate casualties, but the number recorded as killed by enemy action includes 151 New Zealand personnel lost in HMS *Neptune* and a large number of Fleet Air Arm personnel lost on operational flights while serving with the Royal Navy.**

The main actions in which New Zealand ships sustained casualties afford good illustrations of the effects of different weapons in naval warfare, and show how arrangements for the after-care of naval wounded are dependent on various factors, including the tactical situation, the ability of the ship to continue as an effective fighting unit and the distance from base hospitals.

The Battle of the River Plate on 13 December 1939 was a daylight surface action between ships in which the *Achilles* sustained slight superficial damage from shellfire. Casualties, all resulting from shell splinters, were confined to exposed personnel on the bridge and those in the gunnery control tower, and comprised 4 killed and 9 wounded, four of whom were classified as severe. The wounded, including one compound comminuted fracture of the leg and two cases of extensive wounds of the buttocks, received all necessary early treatment from the ship's medical officers. The ship remained in the area as an operational unit but was able, nine days later, to land the four severely wounded cases into hospital at the Falkland Islands, whence they were re-embarked on 1 February 1940 before the ship returned to New Zealand. On arrival in Auckland on 23 February, only one still remained a cot case, the remainder having returned to duty or become ambulatory.

On the forenoon of 5 January 1943, off Guadalcanal in the Solomon Islands, the *Achilles* was hit by a Japanese aircraft bomb which wrecked one of the six-inch double turrets and a super-imposed Oerlikon gun but did not penetrate the interior of the ship, which was able to complete the operation on which she was engaged. The effects of the explosion were considerably localised by the construction of the turret, the majority of the casualties occurring in the guns' crews, though others in the vicinity suffered from blast effects. Eleven ratings were killed outright and nineteen wounded, two of whom subsequently died from multiple injuries. The injured included four with multiple wounds and retained fragments which required operative treatment, and five cases of burns. Blast injury to the eardrums was present in a large proportion of the injured. All these cases received full treatment on board from the ship's medical staff and were retained until the ship returned to Auckland on 3 February, by which time only one required admission to sick quarters.

On the night of 12–13 July 1943, during operations in a United States Task Group off Kolombangara in the South-west Pacific, the *Leander* received a torpedo hit amidships, resulting in severe underwater

and internal damage. The main casualties occurred below decks in boiler room, switchboard and repair parties. Some of the bodies were not recoverable until the ship was subsequently docked, and the list of missing included some upper-deck ratings in the port waist and HA gun deck, who are presumed to have been blown overboard by the force of the explosion. Twenty-two wounded were received in the sick bay, where prompt resuscitation measures were effective in all except one case with extensive chest injuries. The ship arrived in harbour eighteen hours after being hit, when seven cot cases and one ambulatory case were transferred to a United States naval hospital, thirteen less seriously injured being retained on board. In this action, in which the total death roll was 28, the majority of the injuries were wounds of the lower limbs and blast effects.

Casualties in the *Moa* and *Kiwi* in action against a Japanese submarine in January 1943 were treated by the US Navy, which also looked after the injured when the *Moa* was sunk by air attack in the harbour of Tulagi in April 1943, with 5 killed and 8 wounded. It is of interest to note that most of the injuries in the latter incident consisted of fractures of the ankles or os calcis apparently due to the violent uplifting of the deck.

In addition, the *Leander* dealt with some Royal Navy wounded personnel from HMS *Kimberley* off Massawa in the Red Sea in October 1940, and with Italian casualties after the sinking of the raider *Ramb I* in the Indian Ocean in February 1941.

***Routine Surgery:* This consisted of a wide range of minor surgery, the management of acute abdominal emergencies and the treatment of a variety of accidents. The most serious accident occurred in the *Monowai* in the Hauraki Gulf in December 1941, when a misfire at gun practice resulted in ten casualties, including three immediate deaths and one subsequently, but as it was possible to admit those severely injured to Auckland Hospital within three hours, treatment on board was confined to first aid and resuscitation. Emergency abdominal operations were carried out at sea on numerous occasions, usually under very trying**

climatic conditions. The patients were not confined to the complements of our own ships, but included some from other naval vessels and merchant seamen from ships in convoy. Usually, cases operated upon on board were transferred to hospital ship or to shore at the earliest convenient opportunity, but it was sometimes necessary or desirable to keep them throughout recovery and convalescence. This was particularly so in the early years of the war when the employment of the cruisers on detached service entailed long periods at sea with infrequent visits to suitable bases, under which circumstances patients were retained throughout their full treatment and returned to duty in due course.

General Medicine at Sea

The greater part of medical work at sea concerned respiratory disorders ranging from common colds to acute lobar pneumonia and pulmonary tuberculosis, occasional outbreaks of the common infectious diseases, venereal diseases and skin conditions. The last-named group, particularly varieties of epidermophytosis, proved fairly troublesome in the Red Sea and Indian Ocean, but became even more a problem in the South-west Pacific. In the latter area skin affections, commonly in the form of extensive indolent ulcers and large weeping patches, accounted for a large proportion of the sick lists and attending lists. Many of these cases proved most intractable and required permanent transfer to a temperate climate. Digestive disorders of an organic type were comparatively rare, but gastro-intestinal symptoms were frequently noted in neuro-psychiatric cases. Comments on the incidence of certain diseases in the Royal New Zealand Navy as a whole appear in a later section.

Hygiene and Habitability of Ships

The most serious problem affecting health at sea, and one which was quite beyond the control of medical officers, was overcrowding. As the war progressed this question became more and more acute owing to the

steady developments in armament and scientific equipment, which not only encroached upon the existing accommodation but required additions to complement far in excess of the designed capacity of ships. For example the *Achilles*, carrying 545 in peacetime, seemed barely capable of accommodating her initial war complement of 620 in reasonable comfort. More and more equipment was fitted as time went on, each item with its quota of men to operate it, so that by 1944 the same ship was required to carry no fewer than 882.

The resultant overcrowding was further aggravated by the abandonment of peacetime ventilation measures in the interests of the safety of ships and the maintenance of their stability and fighting efficiency in the event of damage. With side scuttles permanently plated over, and watertight doors always closed at sea, natural ventilation was well-nigh impossible below decks, and a large proportion of the personnel lived, worked and slept in compartments artificially lighted and dependent for ventilation on fans, suction pipes and blowers. An added factor contributing to the discomfort of life below decks in the tropics was 'wild heat', intensified by the removal of woodwork and lining material to reduce fire risk and facilitate the repair of damage.

It is difficult to assess the full effects of these conditions on health, morale and efficiency, but they were probably one of the factors responsible for the rather high incidence of pulmonary tuberculosis in the Navy.

The complexity of the problem was fully realised by the Admiralty, which appointed in 1943 a special Sub-committee on Habitability which not only collected reports but conducted its own investigations at first hand into living and working conditions under conditions of arctic and tropical warfare. Some of the recommendations resulting from this investigation will no doubt be incorporated in future warship construction, but the urgencies of war did not permit any appreciable alleviation of the problem during hostilities.

On the other hand, the Navy was fortunately placed in some other

equally important aspects of hygiene and sanitation. Except in small ships, one did not have to rely on shore water supplies. For months on end, the distilling plants in the cruisers worked without interruption, ensuring not only a pure supply for drinking and culinary purposes and for the washing of clothes but also providing sufficient for daily fresh-water shower baths for all hands. Although diet was at times monotonous, the larger ships had good storerooms, some refrigerated space, and well-staffed and adequately equipped galleys and bakeries, so that food was generally well prepared and properly served. Disposal of garbage and excreta was never a problem, and though cockroaches infested most ships until the introduction of DDT, flies were seldom troublesome. Thanks to these favourable hygienic factors, dysentery and similar diseases were almost unknown, and the few cases reported were invariably the result of shore contacts.

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[1] **See pp. 197– 8.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

III: THE MEDICAL SERVICES OF THE ROYAL NEW ZEALAND NAVY ASHORE

III: The Medical Services of the Royal New Zealand Navy Ashore

Within New Zealand the naval medical service was responsible for a wide range of duties, which included the following:

(i) Responsibility for all recruiting medical examinations and final examinations on entry.
(ii) Medical classification of personnel and their examinations for draft to sea and for foreign service leave.
(iii) Invaliding boards of survey and the examination and grading of all personnel on discharge.
(iv) Supervision of the hygiene of shore establishments and of the small ships based on New Zealand ports.
(v) Training of the sick-berth staff.
(vi) Treatment of naval sick and injured in so far as this could be provided efficiently and economically with the available accommodation and staff.

Originally this work was confined to Auckland, which remained the main naval base and training centre throughout the war and where the refit of major war vessels was undertaken. The RNZN was never large enough to justify the establishment of a complete naval general hospital to cater for all its routine and specialist requirements, but the erection of Sick Quarters at Devonport in 1941, with 42 beds, X-ray plant and other equipment, a staff including nursing sisters, and the later addition of an operating theatre, enabled the Navy to provide full treatment for a very considerable proportion of its sick and injured. In addition, the training depot, HMNZS *Tamaki*, on Motuihi Island had its own sick quarters of 15 to 20 beds, with the result that in the Auckland naval district public hospital facilities were seldom invoked except for cases requiring specialist attention.

These facilities in Auckland not only helped to ease the difficult bed

situation in the public hospitals but also proved of considerable advantage to the service. Without them it would not have been possible to provide the training and clinical experience for sick-berth ratings which was essential if they were to be efficient in their duties at sea. The retention of naval sick in their own hospital eliminated many of the problems of administration, discipline and disposal which are unavoidable when outside organisations are involved and enabled treatment to be undertaken with full consideration of the prospective service requirements. Service factors frequently determined the classification of ordinary routine cases as urgent. A naval vessel working to a strict time schedule for a refit might have a number of cases for operation or other treatment, none of which were clinically urgent but where immediate medical attention might obviate the necessity of leaving them behind when the ship sailed and of providing reliefs. Working in close association with the administrative officers of the Base and the Dockyard, the medical staff of Sick Quarters were often able to plan their work without adding to the difficulties of manning and despatch of ships.

With the exception of Wellington, and in the later stages of the war, Lyttelton, no other shore establishments were of sufficient size to justify the employment of naval medical officers and the provision of special treatment facilities. In Wellington the establishment comprised originally Navy Office and a small transit depot, limiting the work of the naval medical officer to examinations and recruiting duties, inspections of small ships and such out-patient treatment as could be afforded in a small sick bay without bed accommodation. Later, development of a base for small vessels, of special training depots and a number of small out-stations demanded fuller medical facilities, which had to await the completion of the barracks at Shelly Bay in 1944, but which eventually included a sick quarters of 13 beds in which a wide range of treatment, but no major surgery, was carried out. Similar developments on a smaller scale at Lyttelton were met by the erection of a sick bay with limited bed accommodation and the provision of sick-berth staff, working at first under the supervision of an army medical officer from

the local coastal defences, but later with a naval medical officer.

Arrangements in other centres varied with the circumstances. The naval detachment at Waiouru, which included a sick-berth rating, came under the administration of a naval medical officer from Wellington, who visited the camp periodically, but the men received any necessary immediate treatment from the army camp hospital. In Whangarei, used for some time as a base for small patrol craft, cases which could not be conveniently transported to Auckland were treated by civilian practitioners or in the local hospital. Similar arrangements obtained in other ports for the occasional needs of the crews of small vessels requiring advice or treatment.

Recruiting Examinations

One of the most important duties undertaken by the naval medical service ashore was the examination of all naval recruits. Naval enlistment differed in several important respects from army recruiting, and the advantages to the service of retaining full control of the selection and classification of its prospective entries were so clearly apparent that, despite the shortage of medical staff, the practice was continued throughout the war.

Certain points of difference between naval enlistment and army recruitment must be mentioned. In the first place, all naval entry was on a voluntary basis, though it must be admitted that most of those offering during the war were liable for some form of national service under the conscription regulations then in force. Again, overseas service was not restricted in the Navy to those over 20 years of age. A very large proportion of those sent to sea were between 18 and 20, and there was in addition the small but important class of continuous service seamen boys entered at fifteen and a half or sixteen and drafted to sea within a few months. Furthermore, all naval enlistment was for specific branches of the service, and it was necessary for the interviewing officers, and the medical examiners who worked in close association with them, to have a good knowledge of the requirements and conditions of all the various

categories of naval ratings. Recruiting boards could, and often did, indicate to unsuccessful candidates for a particular branch other avenues of naval employment for which they might be suited, but no man could be arbitrarily transferred to a branch for which he had not volunteered.

Under these circumstances much more was required of examining medical officers than the assessment of a physical grade. Special standards of eyesight, colour vision and hearing applied to various types of employment, and the position became more complicated with the creation of new categories as the war progressed. Relaxation of the standard of full physical fitness was possible for a limited number employed in shore stations, but examining officers had always to bear in mind the remoteness and inaccessibility of some of the out-stations, which though classed as 'shore or harbour service' required active and agile personnel to man them.

Examinations were carried out at the bases where naval medical officers were stationed and by periodic visits of recruiting and selection boards to other centres. Chest X-ray examinations were done by the public hospitals, all suspects being referred to the specialist chest boards in the same manner as for army recruits. Candidates for the Fleet Air Arm underwent an additional special examination by Air Force boards to assess their flying categories. From 1944 onwards, considerable assistance in eyesight testing was obtained from mobile units of the Army Optician Service.

The selection of suitable recruits for war service, entailing the examination of some 14,000 candidates, was rightly regarded as one of the most important responsibilities of the naval medical service. Whereas in peacetime long training periods afford opportunities for reviewing new entries and re-assessing their suitability, many of the wartime naval recruits were shipped to the United Kingdom within a few days of joining, and it is to the credit of the examining officers that errors in selection were so infrequent.

No matter how carefully conducted, a single short physical examination cannot prevent the acceptance of some candidates who are subsequently found to be unsuitable under the test of training. In the RNZN this proportion was very small indeed and contained no instance of gross physical disability which should have been detected at the initial examination. Candidates with minor degrees of foot deformity were sometimes accepted on their assurance that they engaged in athletics and active pursuits, and a few of these were shown later to be unable to carry out arduous training. Most of the cases of unsuitable entry were psychological misfits, or instances of deliberately misleading statements in respect of past history of epilepsy, enuresis, or asthma.

Invaliding and Demobilisation

As with entry, so with discharge, all medical examinations were conducted by naval medical officers. It is particularly desirable that questions of fitness for retention in the service should be determined by persons possessing not only medical training but a good knowledge of naval life and conditions. Similarly, until the provisions of the War Pensions Act 1943 extended the interpretation of 'attributability' until it became practically synonymous with 'service overseas', assessment of attributability or aggravation could only be made by officers fully acquainted with the circumstances and with access to all the records.

It is true that the ultimate decision on matters of pension lay with the War Pensions Boards, but it was always the aim of Naval Medical Boards of Survey to provide them with carefully considered recommendations based on all the available facts.

IV: Ancillary Services

Dental Services

Prior to the war one dental officer, Royal Navy, was borne for duty afloat in the New Zealand Squadron, the services of civilian dentists being employed extensively in New Zealand ports.

This was in conformity with the existing policy in the Royal Navy, where dental officers were carried afloat only in capital ships, aircraft carriers, and one ship of each cruiser squadron. Such provision was reasonably adequate as long as a high dental standard could be maintained on enlistment, but it had become evident before the war that lower standards would have to be accepted in New Zealand if the rapid war expansion of the Navy was to be considered.

The Royal Australian Navy, faced with similar dental conditions, had already before the war increased its dental service to allow one dental officer to each cruiser.

It has been mentioned earlier that the immediate requirements of mobilisation were met by utilising a panel of civilian dentists, while the solitary naval dental officer was brought ashore and fully occupied in the naval base.

A serious problem soon arose in the two cruisers, employed on detached duty far from their normal base and dependent on casual dental attention in such ports as they might visit for fuel. As such visits were of short duration, only the more urgent cases could be attended to, and there was a complete lack of continuity of treatment. A report from the *Leander* after ten months' detached service showed that although 336 cases had been dealt with in this manner, the work was piling up

and routine examinations were out of the question.

Accordingly, early in 1941, Colonel Finn, [1] Director of Dental Services for all the armed forces, arranged the secondment of sufficient personnel from the Army Dental Service to permit the appointment of a dental officer and a dental mechanic to each cruiser, and in addition to provide staff for all the larger shore establishments.

Persistent efforts by the medical and dental departments were necessary before this service could be established at sea. In some ships, where accommodation was already very limited and where space was being further encroached upon by radar and other new equipment, the necessity to accommodate a dental staff was at first viewed with some disfavour, but all such opposition quickly faded when the great value of the service became apparent.

This service provided by the Army Dental Department proved thoroughly successful throughout the remainder of the war. Not only did it provide for the needs of New Zealand naval personnel, but it rendered extensive service to ships of the British Pacific Fleet. One feature in particular which excited the envy and admiration of the Royal Navy was the provision afloat of competent mechanics and equipment for prosthetic work.

Some of the dental officers were, however, not entirely happy with the dual control resulting from this system of secondment and would have preferred a separate naval dental service as in the Royal Navy, and it seemed very doubtful whether the arrangement which met the emergency requirements of the war could continue as successfully for permanent service in peacetime.

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[1] Col B. S. Finn, CBE, DSO, ED, m.i.d.; born Invercargill, 17 Oct 1880; dental surgeon; trooper, South African War, 1900–02; NZ Dental Corps, 1914–18 (Major, ADDS); DDS, Army HQ, 1934–49; died 23 Aug 1952.

Nursing Service

Prior to 1941, no necessity had arisen for the employment of female nurses in the Royal New Zealand Navy. In that year, however, the completion of the new Sick Quarters at Devonport enabled the Navy to provide much more extensive treatment for its patients and provided the opportunity of establishing a training centre for male sick-berth ratings. Furthermore, as the new Sick Quarters was to be victualled as an independent establishment with female domestic and galley staff, it was obvious that the control and management of these services should be undertaken by trained women.

Initially, there was no particular necessity for the nursing staff to be members of a uniformed service. They served in a civilian capacity in the same way as many others of the Dockyard staff, seconded from the Health Department, whose Director of Nursing provided reliefs for leave periods, but they were accorded the status of officers in relation to patients and the remainder of the staff.

A new situation arose at the end of 1942 with the creation of the Women's Royal New Zealand Naval Service, whose officers and ratings were to undertake many duties in shore establishments hitherto performed by men. The existence of this uniformed body of women rendered it desirable to establish even more definitely the status and authority of the nursing sisters, and as a separate service was out of the question for a total of three, arrangements were made with the Army Medical Department to enrol them in the New Zealand Army Nursing Service and second them back to the Navy for duty. Two of the original nursing sisters accepted this arrangement and served continuously throughout the war, while the third appointment was filled in succession by other members of the NZANS on secondment.

Comprising two ward sisters, including a charge sister, for ward management and sick-berth instruction, and a sister-housekeeper for the victualling and domestic side, this small staff was of inestimable value

to the naval medical service. Not only did they establish a new and improved standard in the nursing care of naval invalids, but they trained and supervised the work of successive drafts of male sick-berth ratings for sea service. From 1941 every sick-berth rating of the RNZN served in Sick Quarters, Devonport, under these sisters during his initial training and at subsequent stages of his career. Before promotion to higher rating they were examined in nursing technique by the sisters, and the high standard shown by so many of them in their work at sea and ashore is due to a great extent to the influence and example of the nursing service. Particular mention should be made of Miss McDonald, [1] one of the original staff, who served as Charge Sister until the end of the war, later proceeding to Japan on promotion as Matron of 6 NZ General Hospital.

Women's Royal New Zealand Naval Service - Sick-berth Branch

With the inception of the Women's Royal New Zealand Naval Service in 1942, large numbers of young women took up naval duties in shore establishments throughout New Zealand, particularly at Auckland, Wellington, Lyttelton and Waiouru. Some continued to reside in their own homes but the majority were housed in special barracks or hostels at their place of duty. Minor illnesses were treated in the sick bays of their quarters by naval medical officers, while serious cases were transferred to civil hospitals.

As naval nursing sisters did not exist outside of Auckland, necessary provision for female assistance in the examination and care of WRNZNS personnel was effected by instituting a sick-berth branch of the organisation, similar in all respects to the male sick-berth branch of the Navy. Selection was made from applicants possessing home nursing, first-aid or voluntary aid training, and after a special course of instruction in Sick Quarters, Devonport, they were drafted as Wren SBAs for general sick-berth duties, but in particular for the care of members of their own organisation.

As far as is known, the creation of a sick-berth branch as an integral

part of the WRNZNS was a feature peculiar to the New Zealand Navy. It had been noted in the United Kingdom that undesirable anomalies existed when voluntary aid personnel, still belonging to their parent bodies, served in naval establishments under conditions materially different from either the Naval Nursing Service or the Wrens. Other categories of WRNZNS personnel were to be employed in medical establishments in positions of equal or even greater responsibility, and there appeared to be no good reason why those employed on sick-berth duties should be given any different status except that which would normally accompany any promotion to higher rating which they might earn from experience and ability.

The arrangement proved most satisfactory. As members of the WRNZNS, these female sick-berth ratings conformed to the regulations and discipline of the common organisation, while their professional duties were under the direction of the medical or nursing staff, and their work in the various shore establishments earned high praise from the medical officers with whom they served.

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[1] **Matron Miss C. McDonald, ARRC; Tapanui; born Invercargill, 21 Aug 1911; nurse; Matron 6 Gen Hosp (Japan) Jun 1946–Sep 1948.**

V: THE HEALTH OF THE ROYAL NEW ZEALAND NAVY

V: The Health of the Royal New Zealand Navy

Although it is realised that the value of such information is limited owing to the small size of the RNZN, some of the more important items of vital statistics are necessary for any historical record. Special mention must also be made of some of the conditions met with in naval medical practice which are liable to reduce the efficiency of units, and those which result in serious loss to the service from permanent invaliding.

The material from which this data is compiled includes the quarterly journals and sickness tables rendered by each ship and shore establishment of the RNZN, which provide a complete picture, as far as those units are concerned, of all sickness and injury, both major and minor. In respect of those New Zealand personnel who served with the Royal Navy, information is lacking with regard to minor conditions but is complete as a record of casualties, hospitalisation, invaliding, and condition on demobilisation.

Including those whose service was for the most part with the Royal Navy, some 12,000 officers and ratings served in the Royal New Zealand Navy for varying periods from September 1939 to December 1946, during which time the strength rose from a peacetime figure of 1359 to a peak of 10,040, falling again to 1834 at the completion of demobilisation. It is customary in the Royal Navy to present statistical matter in the terms of incidence per thousand per annum of the serving strength, but on account of the small size of the force and the great variation in annual strength through these war years, it has been thought desirable after consultation with officers of the Census and Statistics Department to base New Zealand calculations on the mean annual strength for the whole period, a figure of 6157.

Deaths

Deaths from all causes totalled 672 and comprise three main groups:

Enemy action	**494**
Accidents	**125**
Sickness	**53**
	672

Losses from enemy action include killed in action, died of wounds, missing (presumed killed), and killed in air raids. This figure includes 151 lost in HMS *Neptune* and a very considerable number of Fleet Air Arm officers and ratings lost on operational sorties in various theatres of war. The accidental deaths also include a number of flying accidents during training and on non-operational flights.

The low incidence of deaths from sickness, 53 cases or 1·23 per thousand per annum, is noteworthy. Bearing in mind that it includes nine who died in Japanese hands as prisoners of war and all personnel dying in civil hospitals while still on service pay, and that some of the deaths occurred in men of older age groups than are usually employed on naval service, it can be regarded with considerable satisfaction, and compares very favourably with Royal Navy rates for a typical peacetime year, 1·4 per thousand in 1926.

The actual causes of death in these 53 cases are listed as under:

Tuberculosis, pulmonary	**3**
Tuberculosis, non-pulmonary	**2**
Dysentery and enteritis	**3**
Smallpox	**2**
Enteric fever	**1**
Encephalitis	**2**
Cerebro-spinal meningitis	**1**
Malignant neoplasms	**5**
Coronary disease and other heart disorders	**7**
Cerebral vascular disease and other brain disorders	**7**
Intestinal obstruction, peritonitis, etc.	**5**

Myelogenous leukaemia	**1**
Myxoedema	**1**
Osteomyelitis	**1**
Post-operative deaths	**3**
PWs in Japanese hands, full details not available	**9**
	53
Wounds	
Wounds and injuries as result of enemy action	**92**

Invaliding from the Navy

An important source of information as to naval health and fitness is provided by the records of invaliding. In peacetime everyone employed in naval service was expected to be fit for sea service in any part of the world. Any individual who fell permanently below this standard by reason of injury or disease was promptly invalided out of the service after examination and assessment by a medical board of survey. In the Royal Navy, for example, the invaliding rate in 1935 was 10–8 per thousand. A study of invaliding figures is of some importance, providing one means of assessing the suitability of those who have been entered, and indicating not only a permanent loss to the service from medical causes but a potential continued expense to the State by way of disability pensions.

In war a somewhat different criterion may be applied to invaliding. Useful employment in shore establishments or in specified limited duties may still be available for trained men who have developed certain defects. Nevertheless, the invaliding rate in war can be expected to be very much higher than in peace, first, in consequence of increased injuries and accidents, and the effects of strain and lowered living conditions and, second, because the manning situation demands relaxed standards of entry and the extension of age limits beyond those of normal retirement. Such was the British experience in the First World War when the invaliding rate for the Royal Navy rose from 13 per thousand in 1913 to an average of 24 per thousand throughout the war

years, falling again to previous levels with a return to peace.

From the outbreak of war until the end of 1946, by which time demobilisation was practically complete, 762 cases were invalided out of the RNZN, representing an approximate annual rate over the period of 17·7 per thousand. This figure covers all New Zealand naval personnel whether serving in New Zealand ships or with the Royal Navy, as all cases from the latter group were returned to New Zealand for final disposal. It also includes a small number of Royal Navy personnel whose invaliding was effected in New Zealand while serving on loan.

The principal causes of invaliding, some of which will later be discussed in detail, were:

Neuro-psychiatric and mental disorders	182
Pulmonary tuberculosis	114
Wounds and injuries	75
Gastric and duodenal ulcer	48
Miscellaneous general diseases and disabilities	343
	762

With regard to the last group, little comment is necessary. It represents examples of a wide variety of conditions, in effect the incapacitating disorders which might be expected in any large group of the population of similar age groups over a period of years. In none of them is the incidence of sufficient magnitude to suggest any particular relation to naval life. Some of them are conditions of relatively minor importance in civil life but necessitating invaliding because of reduced service efficiency. Others, such as the five cases of diabetes and seven of nephritis, were invalided in their own interests because they required a more sheltered life than the service could offer. Physical deterioration in older men is responsible for some of the cases. While there was a general upper age limit of 55 years for naval service, a number of experienced naval pensioners, retired officers and merchant seamen were employed in special duties up to the age of 65. Many of them served throughout the war, but the later years saw an increasing number invalided. In this group fall most of the cases of chronic bronchitis, myocardial

degeneration, coronary disease, cerebro-vascular disease, osteo-arthritis and malignant neoplasms. Although forming only a small proportion of the total invalidings, these cases represent a section which is not encountered in the Navy in peacetime. Unsuitable entry accounts for a very small proportion of invalidings despite the fact that the only means of obtaining the discharge of those who could not stand up to the test of training, or who were found to have made false or misleading statements as to previous health, was by the full machinery of an invaliding survey. Such cases included epilepsy, asthma, eneuresis and some of the minor foot disabilities.

Various diseases of the eye, including the development of visual defects, were responsible for thirty-eight invalidings, while among the rare or unusual conditions may be mentioned single cases of actinomycosis of the lung, pancreatic cyst, sleep-walking and narcolepsy. Sea-sickness, though by no means uncommon and sometimes requiring drafting to specially selected employment, necessitated invaliding in one individual.

VI: SPECIAL CONDITIONS IN NAVAL WAR MEDICINE

VI: Special Conditions in Naval War Medicine

Conditions meriting special comment by reason of their general incidence or their effect on the invaliding rates are:

Infectious Diseases

Malaria

Pulmonary Tuberculosis

Venereal Disease

Neuro-psychiatric and Mental Disorders

Infectious Diseases

Smallpox: **Three cases of smallpox, two of them fatal and the other very severe, occurred among New Zealand naval personnel during the war. Two of these cases were contracted in Bombay and the third in Ceylon, and while this disease may be regarded as one of the special risks of service in such areas, the severity of the three cases raises questions as to the efficiency of the protective vaccination.**

Naval regulations in force at the outbreak of war required all personnel to be vaccinated on entry and re-vaccinated every five years. On certain stations re-vaccination was required every three years, a period which was later laid down as applicable for all stations. The scratch method was almost universally employed, and where no reaction was obtained it was obligatory to repeat the process in fourteen days.

As the civil population of New Zealand makes little use of vaccination except in outbreaks of smallpox or for the requirements of travel, it was rare to find recruits who had been previously vaccinated.

Despite this lack of immunity, records of the period 1937–41 show a high proportion of failed vaccination and a very low incidence of constitutional reactions. Looking back, it seems probable that these results were due in part to minor errors in technique and in the observation and recording of reactions, and to the use of lymph which had suffered from inadequate stowage.

The first case of smallpox occurred in December 1940 in a rating from HMS *Leander* at the close of a three-weeks' refit period spent in Bombay, where the ship's company lived in camp ashore and enjoyed a considerable amount of shore leave. This patient, previously vaccinated on entry in 1938 in New Zealand, contracted very severe smallpox but made a good recovery following treatment in the local hospital for infectious diseases. The ship was under sailing orders when this case was first discovered. Fresh lymph was immediately obtained from the Government Laboratory of Bombay, and re-vaccination of the whole ship's company was carried out by her own medical officers without delaying her departure. No further cases developed and the ship remained fully operational, receiving free pratique at her next port. The matter might have been regarded as merely of passing interest but for the fact that the type and intensity of reactions were in such marked contrast to those noted in New Zealand. Again the scratch method had been employed, but there was no single instance of failure even in the case of senior Royal Navy personnel who had been vaccinated many times previously. Out of the 620 men vaccinated, 48 developed severe constitutional reactions necessitating periods of two to six days on the sick list, all of those so affected being New Zealanders.

As a result of this experience, vaccination in the training establishments in New Zealand was subsequently pursued with extreme thoroughness and under careful observation, and it is noteworthy that recorded failures became practically non-existent, though executive officers sometimes complained of the interference with training resulting from the reactions.

Meanwhile in May 1941 the second case, which proved fatal, occurred in a rating on passage from New Zealand to the Mediterranean who was awaiting onward transport in Bombay. He had been vaccinated in New Zealand in October 1940 with a minor reaction only.

The third case, also fatal, occurred in Ceylon in 1944. The victim in this case had been serving on loan to the Royal Navy since November 1939, and his vaccination history subsequent to the original New Zealand vaccination of October 1939 is not known.

Other Major Infectious Diseases: **The incidence of other major infectious diseases was confined to a few sporadic cases as under:**

Cerebro-spinal meningitis: **One fatal case in Auckland in 1941.**

Poliomyelitis: **Five separate cases, all contracted outside New Zealand from different war areas, and not associated with any common epidemic.**

Enteric: **Two cases, one contracted in Bombay in 1943 and a second, which was fatal, in Ceylon in 1945.**

Common Infectious Diseases: **Sporadic cases of infectious disease sometimes occurred among new entries in the training establishments, but with the exception of one short outbreak of influenza in the *Tamaki* in 1942, involving seventy cases, none of these reached epidemic proportions.**

In the sea-going ships, risk of infection occurred when crews rejoined after dispersal throughout the country on periods of leave. Where men were known to come from infected homes, prompt isolation could reduce the risk, but most of the outbreaks started in men who were unable to give any very clear history of infection. Despite the difficulties of control and isolation in crowded ships, most of the outbreaks of measles, rubella, and mumps were confined to a few cases. One outbreak of mumps in the *Achilles* in 1944, immediately after recommissioning in England, reached a total of sixty cases, and one in

the *Gambia*, which broke out at sea after a leave period in New Zealand early in 1945, affected 101 out of her total complement of 820. In this outbreak twenty-three cases developed orchitis, twelve of them with testicular atrophy, and one of the group subsequently developed encephalitis which necessitated invaliding.

During 1942, when mild influenza was prevalent in New Zealand, the *Achilles, Leander* and *Monowai* all experienced outbreaks following visits to Auckland. In the *Achilles* the disease, though of a mild nature, involved 160 of her total complement of 652, the cases occurring in two distinct waves at different periods of that year.

While serving in the East Indies in the latter part of 1944 the *Achilles* had twenty-four cases of dengue fever, and in the middle of 1945 the *Gambia*, serving with the British Pacific Fleet, reported sixteen cases of a typical virus pneumonia, which was at that time prevalent in other ships of that force.

Malaria

As far as the Navy was concerned, malaria was almost entirely limited to shore-based personnel and those engaged in combined operations, though long periods of employment in the Indian Ocean and the South-west Pacific exposed New Zealand ships to the risk of this disease in many of their bases and fuelling ports.

In the cruisers, where control was maintained by the limitation of night leave and by lying well offshore at anchorage, the disease was practically non-existent, only four cases being reported during the whole of the war. All of these occurred in ratings who had been forced to remain ashore with inadequate protection. For example, two cases from the *Leander* in 1941 occurred in the aircraft's crew who had been compelled to spend a night in a jungle swamp in the interior of Ceylon after a crash landing which destroyed their medical equipment. Somewhat similar circumstances account for the remaining single cases from the *Leander* and *Achilles*.

The smaller ships of the 25th AS/MS Flotilla, which had necessarily to make closer and more constant shore contacts, reported thirteen cases in eighteen months, but the majority of the known total of 106 cases occurred in shore-based personnel living under conditions comparable to those of the Army in West Africa, India, Ceylon and the South-west Pacific. This figure does not represent the total incidence of malaria as there were probably other cases occurring during Royal Navy service not recorded in New Zealand.

Pulmonary Tuberculosis

For some years before the war and prior to the introduction of X-ray examinations at entry, an overall rate of two cases per thousand per annum had been recorded by the Royal Navy, an incidence considerably higher than that of the Army and the Royal Air Force. Rates varied on different stations, being generally higher in the tropical areas served by the East Indies and China Squadrons. From the inception of the New Zealand Division of the Royal Navy, the local incidence had caused no particular concern until just before the war, when between August 1937 and July 1939 seven cases occurred in the *Achilles* and one in the *Leander*, equally divided between New Zealand and Imperial personnel. Certain suggestions for the better ventilation of living and working spaces in these ships could not be put into effect owing to the outbreak of hostilities and the employment of the cruisers on active operations with increased complements.

In May 1940 all personnel in the *Achilles* underwent X-ray examination of the chest, but the exigencies of war service did not permit this to be done in the *Leander* before November 1941. From the end of 1940 this examination was part of the standard naval recruiting procedure and was employed to an ever-increasing extent in the investigation of suspects. Unless gross signs of disease were present, a medical officer in a ship was faced with very great difficulties in the detection of pulmonary tuberculosis. Auscultation of a chest is almost impossible at sea and is hardly better in harbour owing to the constant

vibration and transmitted sounds from dynamos and other essential machinery. Without facilities for immediate chest X-ray, a careful study of weight records and the closest observation of cases showing otherwise inexplicable decline of health were often the principal means available for the recognition of cases.

The results of the first complete X-ray examination in these two ships is of interest:

HMNZS *Achilles*. May 1940. Complement 616. (No further cases had been detected clinically since July 1939.) Twenty-seven X-ray suspects were examined by a special medical board including the Tuberculosis Officer of Auckland Hospital. Six of these (3 RN and 3 ratings), classed as active, were admitted to hospital and invalided from the Service. Seven were kept under close observation and subjected to repeated examinations over a lengthy period. Of these, one developed active tuberculosis in 1941, another in 1943, while five remained clear. The other fourteen X-ray suspects were passed as fit by the special board.

HMNZS *Leander*. November 1941. Complement 628. (Three cases, all New Zealanders, had been detected clinically and invalided since the outbreak of war.) Nineteen X-ray suspects were examined by a similar special Medical Board. Six (2 RN and 4 NZ) were classed as active and invalided. Four were kept under observation, one of them subsequently becoming active. The remaining nine cases were passed as fit.

From 1 September 1939 to 31 December 1946, the total number of cases of pulmonary tuberculosis in male personnel of the RNZN was 117, representing an average annual incidence of 2·7 per thousand. This figure comprises cases of all grades of severity, and includes a number without obvious clinical signs who were picked up radiologically on demobilisation. It covers all New Zealand naval personnel wherever they served, and includes six Royal Navy personnel serving on loan. Thirty cases, including the eighteen already described as detected in the cruisers in the early months of the war, occurred in men who had not been previously X-rayed. Most of these were discovered at comparatively

early stages in their war service as X-ray facilities became available in New Zealand and abroad. Forty of the total of 117 were diagnosed or suspected on symptoms, and confirmed radiologically, while in seventy-seven the X-ray report was the first indication of any abnormality.

The age groups of these cases are as under:

16–20 years	**3**
21–25 years	**70**
26–35 years	**36**
36–45 years	**6**
45– years	**2**
	117

The fact that 87 of 117 cases occurred in men whose X-rays had been clear on entry, and that those cases included some of the most severe and extensive lesions, indicates that too much reliance should not be placed on initial X-ray examination as a means of reducing the naval incidence. The conditions of shipboard life still render it necessary to keep the closest watch for any signs or symptoms which might point to tuberculosis. Early recognition and segregation of suspects is essential and it would seem desirable to repeat the X-ray examination of all personnel at least every two years.

A careful study of the cases occurring in continuous service personnel of the RNZN before and during the war has produced one point which may prove of some value. These cases developed in different ships, in different parts of the world and at different dates and at first sight appear to be unrelated, but in a significantly large number there have been common factors in membership of the same initial training classes. The number of instances in which such grouping can be demonstrated is more than can be explained away as mere coincidence, and bearing in mind that this early training period involved closer common contacts than in any other subsequent period of naval service, it is suggested that some of these groups contained individuals from whom infection was spread. It has not been possible to analyse in the same manner cases occurring in reservists and in personnel entered for hostilities only, but

the evidence would seem to justify increased efforts to check the introduction of infection at this likely source.

The return to peace and the resumption of long preliminary training courses before draft to sea afford an opportunity for closer observation of new entries, repeated clinical and radiological examinations and possibly Mantoux testing, which might lead to a marked reduction in the incidence of pulmonary tuberculosis in the Navy. [1]

Venereal Disease

The period of the war coincided with an era of improved and simplified treatment, which reduced the medical problem in a remarkable degree but did not diminish the administrative difficulties arising from high rates of incidence in a fighting service. Formerly, treatment involved lengthy periods off duty, a considerable amount of hospitalisation, and a high ratio of invaliding for permanent disabilities. Sulpha drugs had come into use in the Navy for the routine treatment of gonorrhoea shortly before the war and were employed in their various forms until penicillin became available. These chemotherapeutic agents resulted in shortened periods of treatment, a marked diminution in complications, and a reduction in the invaliding ratio to almost negligible proportions. Only nine cases were invalided for the sequelae of syphilis or for gonococcal arthritis, and in all of them the original infection had antedated the modern standard treatments.

In ships carrying medical officers, where the appropriate treatment could be given under proper supervision, most cases could be dealt with while still remaining at duty, but in small ships the occurrence of a case of venereal disease necessitated drafting to shore for treatment and the provision of a relief. Similarly, cases in shore establishments had to be retained under the care of medical officers, and were not available for draft to sea or for employment in outlying stations. Apart from the necessity for making special provision for treatment and the time and cost involved, it may be said that the administrative, disciplinary and drafting problems arising out of venereal disease caused more concern

than the actual medical management of the cases.

Records covering the six-year period from 1 October 1939 to 30 September 1945, from shore establishments in New Zealand and all RNZN ships whether employed at home or abroad, but excluding personnel serving with the Royal Navy, show the incidence of venereal disease as follows:

Number of fresh cases:

		Per Cent
Gonorrhoea	787	84
Syphilis	93	10
Chancroid	55	6
Total	935	100
Average strength of force reported on		4372
Average annual cases		156
Rate per thousand per annum		35.6

The rate of incidence showed a steady drop through the six years from an initial figure of 83·9 per thousand to 20·8 per thousand, a gratifying improvement for which a multiplicity of factors is responsible. The rates in sea-going ships naturally varied with the opportunities of shore contact, but it must be admitted that the unenviable reputation of some New Zealand base ports was fully sustained, and that local sources were responsible for almost as much infection as places abroad.

On the one hand, educational campaigns by medical officers in training establishments and in the service afloat probably played some part in reducing the incidence. The frank and open discussion of the problem in the press at various times was of value, and, in Auckland particularly, credit must be given to the efforts of the Health Department and police to control infected women. Another important factor which cannot be over-stressed was the provision of decent recreational facilities for naval ratings in their bases at home and abroad. Without such provision, the extent of which varied considerably in different ports, ratings were compelled to spend their off-duty time

roaming the streets in search of amusement and entertainment. The position was particularly bad in Auckland in 1940 and 1941, when the base offered nothing better than a very inadequate canteen, but the subsequent provision of a cinema, recreational huts, library, a good canteen, and the restoration of playing fields which had been lost in the rebuilding of the barracks, left little room for complaint.

On the other hand, it is probable that the improved rates are partly due to better prophylaxis, though there is no means of assessing the proportion of potentially infected persons who adopt precautions or the efficiency with which they are used. In ships, ablution chambers were probably of very limited value owing to the time lag when night leave was given, and for most of the war greater reliance was placed on the issue of condoms. Prophylaxis by the method of Joses, as quoted in the Medical Research Council Memorandum No. 10 (1943), was carried out experimentally in the *Gambia* from February 1944 to June 1945 with considerable success. In this method a total of 6 grammes of sulphathiazole was administered in three doses on the day following exposure. Of 597 men reporting for this treatment, only one developed gonorrhoea and one a non-specific urethritis. In the same period nineteen cases of gonorrhoea occurred in the same ship in men who had not taken the course. Fears that the method might establish an undesirable resistance to sulpha drugs prevented its general adoption, though it was tried out by other medical officers with variable success; but the later arrival of penicillin with the prospect of rapid and easy cure reduced the demand and necessity for such measures.

Neuro-psychiatric and Mental Disorders

One hundred and eighty-two cases of neuro-psychiatric and mental disturbances, ranging from mild anxiety states and cases of functional dyspepsia to certifiable mental conditions, were invalided from the RNZN during the period September 1939 to December 1946, representing a ratio of 4·2 per thousand per annum.

These cases can be conveniently subdivided into two main groups:

I. Cases of schizophrenia, melancholia, acute depressive states and psychopathic personality. Total 49, or 1·14 per thousand per annum.

II. Functional nervous disorders:

Anxiety states	75
Neurasthenia	24
Hysteria	18
Functional dyspepsia	16
Total	133 or 3·08 per thousand per annum.

Most of the cases in the first group were detected during training or in early stages of service, when abnormal conduct or failure to respond to instruction and discipline prompted investigation. A number of them had bad personal or family histories which had not been disclosed at entry, but which subsequently came to light either fortuitously or as the result of special inquiry. This is the group which might possibly have been excluded on enlistment had there been time and opportunity for checking personal statements or for the application of special additional tests. As long as such cases can be recognised and withdrawn before draft to sea no great harm is done, but the wartime practice of despatching drafts to the United Kingdom after little or no preliminary training and observation carried the definite risk of the inclusion of some unsuitable types.

The second group, that of the neuroses, presented one of the most difficult problems of service medicine during the war. From the point of view of service efficiency, the prompt discharge of all such individuals has much to commend it, but medical officers had to be constantly on their guard against establishing an easy way out for those who for one reason or other were anxious to avoid their obligations. It would be idle to claim that the number invalided, 133, represents the full incidence of neurosis in the RNZN. Some of the milder cases found suitable employment, temporarily or permanently, in base establishments, and every medical officer at sea encountered cases which responded to the help he was able to give at critical periods.

Much has been written during and since the war on neuroses in

service personnel, and there is perhaps a tendency for those outside the services, both lay and medical, to lay too much stress on the hazards and nerve-shattering experiences which all these cases are assumed to have undergone. Careful analysis of the cases occurring in personnel of the RNZN shows that only a very small proportion can be attributed directly to what might be termed the extra hazards of war, such as the mining or torpedoing of their ships, aircraft accidents, exposure to gunfire or bombing and so forth. Furthermore, the greater number did not break down in early stages of service or on the first experience of trying or arduous conditions, but after lengthy periods of service, and it is noteworthy that 98 of the 133 cases were recorded in the years 1944, 1945 and 1946 as compared with 35 in the first four years of the war. Again it is to be noted that of 120 ratings, 9 held leading rates and 13 the rates of petty officer or higher, an indication that they had proved themselves reliable and efficient in their naval service.

Another common tendency at the present time is to discount the importance of discipline, leadership and example in the production of morale, and to ascribe all failures to the inherent weaknesses of the individual. Both of these factors must be considered in any study of service neurosis, and there are few naval medical officers of experience who will not have noted variations in the incidence in different ships in which they have served. There is a great depth of meaning in the old naval term 'a happy ship', implying a unit in which there is mutual respect and trust between officers and men, and dependent to a great extent on officers and senior ratings who not only know their jobs but who have a sympathetic understanding of the men under them and can get the best out of them.

Medical officers of sea-going ships on long commissions had exceptional opportunities of studying the reaction of their shipmates to the conditions and the work they were called upon to undertake, and the quarterly journals frequently contained the results of these observations. It was not necessary to go very deeply into psychology to lay bare the factors underlying the majority of cases of neurosis in the New Zealand

naval service.

Apart from the actual strain of war experience, domestic and economic problems figured largely. In some men there was a definite feeling of frustration, while at the other extreme some broke down under the strain of promotion and added responsibilities for which they felt themselves inadequate. Reports from home, possibly exaggerated, of the pecuniary and other advantages enjoyed by their fellows who remained in civil occupations led many to think that they would find themselves left out when they returned to civil life, a feeling which was intensified in the later stages of the war by uncertainty as to the precise meaning of the terms of their enlistment. Men could hardly be blamed for placing their own literal interpretation on such phrases as 'the period of hostilities', 'the period of the present emergency', or 'for hostilities and six months thereafter', and while most of them probably realised that demobilisation must be a gradual process they were unmoved by political and legal quibbles about the official ending of the war.

Age Groups of Neurosis Cases:	
18–20 years	**20**
21–25 years	**46**
26–30 years	**31**
31–35 years	**16**
36–40 years	**11**
41–50 years	**8**
50– years	**1**
	133

Service Groups of Neurosis Cases:	
Home Service only	**53 (includes cases recognised during training)**
Overseas Service	**80**

The Health of the Women's Royal New Zealand Naval Service

Little comment is required respecting the health of the WRNZNS. This force was employed solely in home establishments in New Zealand,

and owing to the lack of suitable accommodation for the treatment of female patients, their care at the hands of naval medical officers was in general restricted to the treatment of minor complaints.

In some centres the initial medical examination before enlistment was carried out by civilian practitioners not fully acquainted with the requirements of the service, but on the whole the physical standard of the force, which reached a total strength of 637, was of a high order.

Most of the sickness recorded was of a minor and general character, but twenty-two cases were invalided for causes as under:

Pulmonary tuberculosis	**5**
Neuro-psychiatric states	**8**
Injury	**1**
Miscellaneous	**8**

This incidence of pulmonary tuberculosis is disturbing, as all these women had without exception been enlisted after preliminary X-ray examination. They had been employed only in shore establishments and their accommodation and working conditions were generally of a high standard. None of these cases had presented symptoms during service, all of them being detected by X-ray on demobilisation.

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[1] **In 1949 strenuous efforts were made by the Royal New Zealand Navy to reduce the incidence of tuberculosis in the services. Ratings serving in shore establishments were inoculated to establish a degree of immunity to the disease, and later inoculations were given to men serving afloat in HMS *Bellona*, etc.**

VII: CONCLUSION

VII: Conclusion

Summing up the war experience of the naval medical service of the Royal New Zealand Navy, the following points are stressed:

(i) The proved value of a reserve of trained medical officers and the necessity for similar reserves of sick-berth personnel. Naval mobilisation is largely dependent for its effect on the speed with which it can be carried out and requires trained personnel immediately available for service. The lack of such sick-berth reserves in the early stages of the war left the New Zealand Navy dependent on assistance from the Royal Navy.

(ii) The necessity for adequate examination of all mobilised personnel and the maintenance of efficient standards for all types of naval employment.

(iii) The advantages of conducting examinations and boards by service medical officers.

(iv) No system of selection of recruits is perfect and the training period affords the best opportunity for reviewing and checking the suitability of entries before they are sent to sea. The practice of despatching drafts to the United Kingdom with little or no preliminary training resulted in wastage which might have been avoidable.

(v) The relation of habitability of ships to fighting efficiency and morale.

(vi) The desirability of increased efforts to prevent the introduction of cases of incipient pulmonary tuberculosis into the Navy.

Appendix

MEDICAL APPOINTMENTS AFLOAT

	Operational Area	Senior Medical Officer	Additional Medical Officers
		Leander	
1939	S. Pacific	Surg Cdr J. J. Keevil, RN (Squadron MO, NZ Squadron)	
1939–40	S. Pacific	Surg Cdr H. K. Corkill, RNZNVR (Squadron MO, NZ Squadron)	Surg Lt I. B. Ewart, RNZNVR
1940	Red Sea	Surg Cdr H. K. Corkill (Squadron MO, Red Sea Force)	Surg Lt I. B. Ewart, RNZNVR
1941	Indian Ocean, Persian Gulf	Surg Cdr H. K. Corkill (Squadron MO, Red Sea Force)	Surg Lt-Cdr. Ewart, RNZNVR
1941	Mediterranean and Syria	Surg Lt-Cdr I. B. Ewart, RNZNVR	Surg Lt S. A. Struthers, RNZNVR
1941–42	SW Pacific	Surg Lt-Cdr I. B. Ewart, RNZNVR	Surg Lt S. A. Struthers, RNZNVR
1942	SW Pacific	Surg Lt-Cdr E. S. McPhail, RNZNVR	Surg Lt A. W. Reeve, RNZNVR
1943	SW Pacific	Surg Lt-Cdr E. S. McPhail, RNZNVR	Surg Lt J. R. Addison, RNZNVR
1943	To USA for refit	Surg Cdr E. R. Harty, RNZNVR	Surg Lt J. R. Addison, RNZNVR
		Achilles	
1939	S. Atlantic	Surg Lt C. G. Hunter, RN	Surg Lt C. A. Pittar, RNZNVR
1940	S. Pacific	Surg Cdr A. Perry, RNZNVR (Squadron MO, NZ Squadron)	Surg Lt F. W. Helmore, RNZNVR
1941–	S. Pacific	Surg Cdr A. Perry, RNZNVR	Surg Lt R. J.

43		(Squadron MO, NZ Squadron)	Walton, RNZNVR
1943	To UK for long refit	Surg Cdr H. K. Corkill, RNZNVR	Surg Lt R. J. Walton, RNZNVR
1944	East Indies	Surg Cdr E. R. Harty, RNZNVR	Surg Lt J. R. Addison, RNZNVR
1945	Pacific	Surg Cdr E. R. Harty, RNZNVR	(i) Surg Lt D. S. Matthews, RNZNVR (ii) Surg Lt H. G. Smith, RNZNVR
1945	Pacific	Surg Lt D. S. Matthews, RNZNVR (Temporary)	Surg Lt H. G. Smith, RNZNVR
1945	Pacific and Japan	Surg Lt-Cdr R. J. Walton, RNZNVR (Acting)	Surg Lt R. M. de Lambert, RNZNVR
		Gambia	
1943	N. Atlantic	Surg Cdr H. K. Corkill, RNZNVR	(i) Surg Lt M. Urie, RN (ii) Surg Lt R. J. Walton, RNZNVR
1944	East Indies	Surg Lt-Cdr I. B. Ewart, RNZNVR	(i) Surg Lt A. G. Cumming, RNZNVR (ii) Surg Lt R. J. Walton, RNZNVR
1944	East Indies	Surg Lt-Cdr A. G. Cumming, RNZNVR (Acting)	(i) Surg Lt R. J. Walton, RNZNVR (ii) Surg Lt H. P. Dunn, RNZNVR
1945	Pacific and Japan	Surg Lt-Cdr D. H. Symes, RNZN (Acting)	(i) Surg Lt H. P. Dunn, RNZNVR (ii) Surg Lt R. H. J. Hamlin, RNZNVR
		Monowai	
1940-42	S. Pacific	Surg Lt-Cdr E. S. McPhail, RNZNVR	
1942	S. Pacific	Surg Lt-Cdr D. H. Symes, RNZN	
1942	S. Pacific	Surg Lt-Cdr A. W. Reeve,	

		RNZNVR
1943	**To UK for conversion**	**Surg Lt-Cdr A. W. Reeve, RNZNVR**

***25th Anti-Submarine/Minesweeping Flotilla* (Borne in *Kiwi* or *Matai*)**

1943	**SW Pacific**	**Surg Lt D. H. Symes, RNZN**
1944	**SW Pacific**	**Surg Lt S. A. Struthers, RNZNVR**
1944	**SW Pacific**	**Surg Lt A. W. Reeve, RNZNVR**

HONOURS AND AWARDS

HONOURS AND AWARDS

Overseas Service

OBE

Surg Cdr H. K. Corkill, RNZNVR (1942)

Surg Cdr A. Perry, RNZNVR (1946)

DSC

Surg Lt C. G. Hunter, RN (1940)

Mentioned in Despatches

Surg Lt-Cdr E. S. McPhail, RNZNVR (1943)

Sick-Berth Attendant N. Craven, RNZN (1943)

Home Service

ARRC

Charge Sister C. McDonald, NZANS, seconded to RNZN (1946)

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

PART IV — ROYAL NEW ZEALAND AIR FORCE MEDICAL SERVICES

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

CHAPTER 1 — ROYAL NEW ZEALAND AIR FORCE MEDICAL SERVICES

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: ADMINISTRATION OF MEDICAL SERVICES

I: Administration of Medical Services

THE Royal New Zealand Air Force was not an independent organisation until 1 April 1937 when it was officially separated from the Army and when its regular strength was 21 officers and 156 airmen. On 15 July 1937 Colonel Bowerbank, [1] who was Director of Medical Services, Army, was appointed Principal Medical Officer to the Air Department on a part-time basis. His duties were to advise on all medical matters relating to the RNZAF and civil aviation, and he was responsible to the Air Board for the organisation, administration, supervision and efficiency of the medical services. He was also responsible for checking the health of civil pilots and issuing medical certificates.

In 1937 medical officers were appointed to Hobsonville and Wigram on part-time service, and one medical orderly was posted to each of these stations. The first full-time medical officer was appointed to Wigram in 1938.

Outbreak of War

On the outbreak of war it was decided that the air medical service should remain linked with the Army, and Colonel Bowerbank became Director-General of Medical Services, Army and Air, and Lieutenant-Colonel B. S. Finn Director of Dental Services, Army and Air. An Assistant Director of Medical Services (Air) was appointed, at first on a part-time basis, but on a full-time basis from 11 December 1939. In the early years of the war medical officers attached to the Air Force remained in the Army Medical Corps, and there were fewer than twenty medical officers required for the fourteen air stations.

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[1] **Maj-Gen Sir Fred T. Bowerbank, KBE, ED, m.i.d., Order of**

Orange-Nassau (Netherlands); Wellington; born Penrith, England, 30 Apr 1880; physician; 1 NZEF 1915–19; i/c medical division 1 Gen Hosp, England; President, Travelling Medical Board, France; DMS Army and PMO Air, 1934–39; Director-General of Medical Services (Army and Air), Sep 1939–Mar 1947.

The entry of Japan into the war brought about a sudden expansion of both the Army and the Air Force. The strength of the RNZAF in New Zealand was built up from 10,000 at the end of 1941 to a peak of 30,000 in September 1943. Besides the growth in numbers, there was increased complexity in problems of administration, especially when squadrons began to move to the Pacific. The Air Board pressed for a separate medical service, which was eventually established in May 1943, although the Air Medical Service still remained under the general direction of the DGMS (Army and Air) so as to avoid any wasteful duplication of medical services when the strain on civilian medical manpower was so great. The DGMS (Army and Air) was to be consulted on all appointments above the rank of squadron-leader and on all major matters of medical policy. There was to be equal pay for the medical officers of the two services, but the Air Department avoided this as it involved a reduction in its officers' rates of pay.

There was a tendency for the DMS (Air), Group Captain Chisholm, [1] to achieve a greater independence than was arranged and than the DGMS (Army and Air) was prepared to concede, especially in view of his intimate knowledge of the RNZAF since its inception. These difficulties were ironed out, details of administration more clearly defined, and regular weekly conferences and monthly reports arranged. Co-operation thereafter continued fairly smoothly until the end of the war, although where the Air Force was still continuing to share the facilities of some of the Army medical services, such as convalescent depots, differences of opinion arose as regards administration. The DMS (Air) was responsible to the Air Board, through the Air Member for Personnel, for the administration of the RNZAF Medical Services. The size of the service was relatively small, and the duties of most medical officers

corresponded largely to those of regimental medical officers in the Army, although aviation medicine had its specialised aspects. From March 1943 Army medical officers who had been seconded to the RNZAF were commissioned in the latter force, as were all later recruitments of medical officers.

The responsibilities of the medical services peculiar to aviation medicine were stated to include: (*a*) Selection of aircrew recruits, both by physical and psychological examination; (*b*) Training of aircrew in the physiology of flight, with special reference to the use of oxygen at altitude and effects of acceleration; and (*c*) Care of flying personnel during their training and active operations, where they meet physical and psychological stresses not seen in ground forces.

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[1] **Gp Capt F. R. Chisholm, OBE; Auckland; born Christchurch, 1 Dec 1904; medical practitioner; ADMS (Air) Sep 1939–May 1943; DMS May 1943–Sep 1945.**

Throughout the war years the question of ultimate independence from the Army was stressed by the Air Force medical directorate, but it was generally agreed to remain under the control of Major-General Bowerbank as long as he was DGMS. [1]

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[1] **From 1947 the Medical Directors of the Army, Air Force and Navy discussed matters on an equal footing in the Services Medical Committee, and in September 1949 the appointment of the DGMS was restricted to the Army only and the Air Force medical service became independent.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

II: MEDICAL STAFFING

II: Medical Staffing

The primary function of the RNZAF in the first years of the war was the training of aircrew, who were sent to Canada and the United Kingdom for final training before being drafted to combat duties. To this end training schools were established in New Zealand, and these increased in size and number as the strength of the RNZAF in New Zealand grew to 9700 by July 1941 and to 30,000 by September 1943.

At each Air Force station there was normally a medical officer, a nursing sister (where sick quarters were maintained), one NCO medical or nursing orderly, and three to six other nursing orderlies, male or female. They were responsible for the health and hygiene of the unit, sick parades, the care of station sick quarters and the nursing of the patients. In addition there were emergency stand-by and ambulance duties.

In 1943, with the introduction of group administration in the RNZAF, senior medical officers were appointed at Auckland and Christchurch with the object of decentralising medical administrative control. The arrangement was very efficient, and with the closing down of group administration in November 1944 the organisation was retained under three medical areas – northern, central and southern.

The RNZAF medical organisation overseas was confined to the South Pacific area, where the RNZAF began to serve towards the end of 1942, and where a peak strength of nearly 8000, mainly aircrew, was reached at the beginning of 1945. There was a senior medical officer for the Fiji-Tonga-Norfolk area, and later another for No. 1 Islands Group in the New Hebrides-Solomon Islands theatre. The medical officer strength overseas in the Pacific rose to twenty-one at the beginning of 1945.

Medical Officers

***Recruitment*: Medical officers prior to March 1943 were seconded from the Army. After that date all were commissioned in the RNZAF direct from civil life by arrangement with the DGMS (Army and Air) and the National Medical Committee. Medical officer strengths at yearly intervals were as follows:**

	NZ	*Pacific*	*Total*
September 1939	**2**		**2**
January 1940	**4**		**4**
January 1941	**14**		**14**
January 1942	**19**	**4**	**23**
January 1943	**30**	**5**	**35**
January 1944	**46**	**16**	**62**
January 1945	**45**	**21**	**66**

***Training*: Medical officers were required to have at least six months' hospital experience following qualification before being commissioned, after which all attended a course at the Officers' School of Instruction, followed by posting to units as assistants to experienced medical officers. Experience on different types of New Zealand stations for at least twelve months was given before posting to overseas units.**

***Length of Service*: An attempt was made to release medical officers to civil practice after a period of three or more years' service. It was necessary to retain for senior professional and administrative posts many officers who had served for a longer period.**

Nursing Sisters

Early in 1940 authority was sought, and duly granted by the Air Board, to appoint trained nurses to RNZAF stations for the purpose of training medical personnel and supervising the nursing and dietary of the sick. During the second half of 1940, five ex-members of the NZANS were temporarily engaged for this purpose. Owing to the lack of suitable accommodation on the air stations, these sisters had to board near their

appointed stations. In November 1940 two full-time sisters were appointed, and on 7 February 1941 a supervising matron was appointed. When the Women's Auxiliary Air Force was absorbed into the RNZAF and quartered on RNZAF stations, nursing sisters were seconded to the Air Force from the NZANS and lived on stations. The policy then was that on all stations where sick quarters were maintained for bed patients, a sister was appointed and was responsible to the station medical officer for the supervision of nursing and sick-dietary and the training of medical orderlies. At the end of 1943 two sisters were established at No. 2 RNZAF Hospital in the New Hebrides, and several months later a further two appointments were sanctioned at Guadalcanal. Subsequently two sisters were posted to Norfolk Island and one to Fiji.

Medical Orderlies

In September 1939 there were only six medical orderlies on the strength of the RNZAF – three at Hobsonville and three at Wigram. With the expansion of the RNZAF this number was steadily increased, the number growing to 380 (including 80 airwomen), all being recruited directly into the RNZAF. The first recruits were interviewed by selection committees and precedence given to those applicants with previous medical experience, either with St. John Ambulance or with Army medical units. After their ground training course they were posted to stations, where practical and theoretical instruction was given during the course of their duties. At some stations courses of training were arranged in conjunction with the local public hospitals. When greater numbers were required, special training courses were started in April 1942, under the supervision of the Matron of the Nursing Service. A training school was also established at Remuera, where a much fuller syllabus of training was introduced and the course was extended to six weeks. Subsequent to the initial training course, orderlies were required to undergo six-monthly trade tests to qualify for higher rank. Prior to being posted overseas orderlies, irrespective of rank, were later required to undergo a four-weeks' refresher course at this training school, and had to attain a specific standard before being sent overseas.

Medical orderlies were first required for overseas service in June 1940, when two were posted to Fiji. In August 1941 a further seven orderlies accompanied a construction unit to Singapore and returned to New Zealand in March 1942. During 1942 all drafts going to Canada under the Empire Air Training Scheme were accompanied by an RNZAF medical orderly. Towards the end of that year also, with the commencement of the Pacific campaign, medical staff were posted to units and squadrons proceeding to that area. Medical sections were established at New Caledonia and Santo, and in January 1943 they moved into Guadalcanal with the bomber squadrons that were commencing operations from that base. Overseas requirements were steadily increased until there were over 100 male and six WAAF medical orderlies serving in the Pacific area.

***WAAF Medical Orderlies*: Female medical orderlies were first appointed to the RNZAF in a civilian capacity at Wigram early in 1940. With the formation of the WAAF in June 1941, WAAF medical orderlies were appointed. Initial selection was from already enlisted airwomen who had had previous training and experience as nursing aids. Training and courses, under the same provisions as for male personnel, were necessary for advancement and promotion. From 1943, enlistments as WAAF medical orderlies were through the voluntary aid pool, and many obtained their VAD certificates after examination by the joint council of the Order of St. John and the Red Cross.**

***Hygiene and Sanitation Personnel*: In March 1942 specialist hygiene and sanitation orderlies were appointed, the first being stationed at Rotorua. Subsequently all stations were staffed with hygiene personnel, and in addition to their main responsibilities of maintenance of sanitation and hygiene many were required to specialise in malaria control. At overseas units malaria control was of paramount importance, and their duties, particularly in the 'moving-in' stages of these units, were very onerous. The comparatively low rate of malaria overseas reflected to a large extent the success of malaria control activities.**

For the first four years the instruction in hygiene and sanitation was provided by the Army, but in 1944 a school of hygiene and sanitation was established at the RNZAF Station, Swanson.

The functions of the school were as follows:

(i) The training of orderlies in hygiene and sanitation.
(ii) A course of instruction in tropical hygiene and practical field sanitation for medical officers proceeding overseas.
(iii) A brief course of lectures and demonstrations on tropical hygiene and malaria control to all personnel proceeding overseas.

Medical Stores and Staff

The organisation for medical supplies was divided into two sections: the Medical Quartermaster's Branch, which controlled the ordering and accounting for the stores and worked in close coordination with the corresponding Army branch, and the Medical Stores Depots controlling distribution of the stores. At the beginning of the war medical stores were distributed from a store at Rongotai airport. Dispersal of medical stores took place with the threat of Japanese invasion and stores were opened in Palmerston North and at Delta, Blenheim. In 1943 a further store was established in No. 1 Islands Group. With the reduction in the number of New Zealand stations, the Delta store closed and the Palmerston North store moved to Petone. Amalgamation of the Petone store with Army Medical Stores was effected later.

The original staff of one at the outbreak of war increased to sixteen in 1945. The staff was composed of qualified chemists, five in New Zealand and two in the Pacific area, supervising the manufacture of medicinal preparations and the dispensing of prescriptions, and equipment assistants having special training in medical supplies.

The number of units supplied with medical and surgical equipment was as follows:

Type of Unit	*New Zealand*	*Overseas*

Hospitals	**2**	**4**
Station Sick Quarters	**43**	**3**
Tropical Units		**14**
X-ray Units		**2**
Laboratories	**1**	**2**
Convalescent Depots	**2**	

Equipment in the early years of the war was obtained through the Defence Purchase Division from local warehouses. In February 1943 this system was changed to a direct indent through Army Medical Stores from overseas, mainly from the United States and India. Units in No. 1 Islands Group obtained supplies from Allied services operating in the area.

III: MEDICAL EXAMINATION OF RECRUITS

III: Medical Examination of Recruits

***Aircrew*: At the outset of the war the policy was for all aircrew medical examinations to be carried out by civilian doctors at one of ten centres.**

On 1 April 1942 all aircrew recruit examinations were centralised at three RNZAF medical boards, at Auckland, Wellington and Christchurch. From October 1943 complete aircrew examinations were carried out only at Delta, Blenheim, until that station closed down, when the three medical boards again took over the examinations.

Remedial treatment for personnel assessed as temporarily unfit was authorised by War Cabinet minute dated 27 November 1939, and arrangements were made through the Health Department for their admission to public hospitals for treatment. Operations were arranged for eye, ear, nose and throat conditions, hernia and varicose veins. This enabled a proportion of otherwise unfit recruits to become fit for aircrew duties.

The percentage of aircrew recruits passed fit for service, graded temporarily unfit, and rejected is shown below for each year:

Period	*Passed Fit*	*Graded Temporarily Unfit*	*Rejected*
	Per Cent	Per Cent	Per Cent
Period to 31 March 1940	68.4	15.9	15.7
Year ended 31 March 1941	57.9	25.8	16.3
Year ended 31 March 1942	62.2	22.8	15.0
Year ended 31 March 1943	72.0	14.6	13.4
Year ended 31 March 1944	81.1	9.9	9.0
Year ended 31 March 1945	81.5	7.5	11.0

Total war period to 31 March 1945	**67.1**	**19.1**	**13.8**

It will be noted that in no year did the percentage of aircrew recruits rejected differ very greatly from the average for the period of the war, and that the trend from year to year after 31 March 1941 was downward. As the medical standards remained virtually unchanged, it is apparent that the physical condition of recruits coming forward did not deteriorate.

***Ground Staff*: Non-flying examinations for ground staff recruits were carried out by civilian doctors at various centres throughout New Zealand from the outbreak of war, assisted later by the three air service medical boards. Because of the diversity of trades in the Air Force, non-flying medical categories were more numerous and complex than those of other services, but the standards of fitness required for overseas service were basically similar.**

In 1942, when recruitment was at its peak, candidates who had already been examined for the Army were accepted into the Air Force without re-examination.

From November 1940 all recruits for the RNZAF aircrew and ground staff underwent chest X-ray before final acceptance. These examinations numbered approximately 73,000.

With the formation of the Air Training Corps in 1941, all cadets were given a non-flying examination before acceptance, and if they were subsequently mobilised for flying duties an aircrew medical examination was carried out.

On the formation of the Women's Auxiliary Air Force, all recruits were required to undergo a full non-flying examination and chest X-ray. In certain large centres special examiners were appointed for the examination of airwomen.

All aircrew personnel in the RNZAF were required to undergo an

annual examination to check up on their fitness. Non-flying personnel were required to be re-examined only on specific occasions, viz., before proceeding overseas, on return from overseas, and on transfer to Army or Reserve. Those returning from the Pacific area had a special medical examination at the RNZAF Disembarkation Depot, and it was supplemented by a laboratory check for malaria, a blood count, and, where indicated, a stool examination.

The general policy was to ensure that a medical board was held: (i) when a member had been incapacitated for a period of two months or more; (ii) when the health of a member had deteriorated or improved, so that his medical grading required to be altered; and (iii) when a member was discharged from the service.

IV: MEDICAL INVESTIGATION UNIT

IV: Medical Investigation Unit

The Evolution of Aircrew Selection Methods in the RNZAF

Until the early part of 1941 all aircrew applicants were interviewed by a travelling selection board. If considered suitable they were given an aircrew medical examination and entered the Initial Training Wing from civilian life. On entering ITW they were given a mental alertness test made up of sixty short questions. The test was administered by ITW ground instructors and the marks were referred to the medical section for noting on the man's medical documents. Little notice was taken of these results and no other steps were taken to assess the entrant's suitability for aircrew duties.

In August 1941 the SMA3 machine was introduced as a method of testing motor co-ordination. This test was administered by the medical section in conjunction with the routine physical examination for fitness for aircrew. At first only the mechanical side was noted on the trainee's medical documents, but it soon became obvious that emotional behaviour during the test was also of great value and notes were made accordingly. At this stage a few of the trainees who did particularly badly were recalled for interview by the medical officer and occasionally were rejected, but, again, little use was made of the test in the final selection of candidates. Generally, provided a trainee came up to the physical requirements and reached the necessary standard in his ground subject examinations, he was passed on to the flying training, navigation and gunnery schools.

Early in 1942 it was considered that the wastage rate at Elementary Flying Training Schools was too great and means were sought to reduce this by some method of pre-selection during the pre-flying stage. To assist in this end the Medical Investigation Unit was brought into being.

The aim of the unit was to attempt to put selection methods on a scientific footing both in regard to the trial of suitable tests and the validations of these tests by statistical follow-ups and surveys. The methods used were largely based on the tests carried out by the Royal Canadian Air Force, which were again based on current American methods of aircrew pre-selection. Since at this stage of the conflict both the RCAF and American Air Force schemes were largely in the experimental stages and little information was obtainable regarding their validity, it will be seen that the unit had, as it were, to start from scratch and attempt to validate its findings as it went along.

The problem was to select, from a pool of men of varied age groups, occupations and civilian backgrounds, those who by reason of physical fitness, moral fibre, motivation, education and ability to acquire new skills were considered to have a reasonable chance of 'making the grade' in the exacting duties of aircrew, and further, to decide which of these would be most suitable for the various categories of aircrew such as pilot, navigator, and air gunner.

Other duties carried out by the unit were the indoctrination of aircrew in the effects of high altitude and lack of oxygen, the testing of oxygen equipment, advising generally on the medical problems of flight and survival following crashes on sea or land, and, if facilities and time were available, carrying out appropriate research work on problems of aviation medicine.

With these ends in view the unit was established with a staff of three medical officers, one psychologist and a number of medical orderlies trained in psychological testing and statistics. Squadron Leader Gunn [1] had had some experience with a Clinical Investigation Unit in Canada in 1941.

Once the unit was established the administration of the mental alertness test was taken over, and at the same time a night vision test (Livingston's Rotating Hexagon) was introduced.

In June 1942 a decompression chamber was obtained from Canada and the unit commenced the training of all aircrew in the effects of altitude.

In September 1942 the medical officers of the unit commenced interviewing all candidates. The aim of the interview was to assess temperament, motivation, and general suitability for aircrew, and to gather biographical data. The interview was carried out at the same time as the general medical examination for aircrew.

Towards the end of 1942 the testing programme developed quickly. The mental alertness test was revised and modified and called the RNZAF classification test. Then two further written group tests, the arithmetical reasoning and the space perception tests, were added to the battery. The results of these tests, as well as those of the SMA3 test and the medical officer's interview, were assessed on a five-point scale. These results were then handed on to a selection committee consisting of the CO of ITW, the chief ground instructor, navigators and mathematics instructors, and the senior medical officer of MIU. All candidates came before this committee and were selected for a particular aircrew category or rejected.

The progress of successful candidates was followed through flying training and full results kept so that the value of each test could be correlated with their ultimate success or failure. This was possible only in regard to pilots who carried out the initial part of their flying training in New Zealand. Other aircrew categories were sent direct to Canada and, in spite of the unit's efforts, no adequate follow-up was possible. For this reason most of the unit's follow-up surveys refer only to pilots in the initial stages of training and no correlation was possible in regard to air gunners', navigators' and pilots' success in operations.

As the results of statistical follow-ups became available and the experience of unit personnel increased, various modifications were made to the testing programme but the broad outlines remained unchanged. During this time the wastage rate at EFTSs was reduced from 25 per

cent to 12 per cent. Although there is no method by which it can be proved, it is certain that some recruits were rejected who could have learned to fly – such a problem, however, is inherent in any method of pre-selection.

With the change in policy in aircrew training in November 1944 the unit was dissolved and formed the nucleus of the Aviation Medicine Unit, which was established at Ardmore in December 1944. This unit was responsible for the indoctrination of all fighter aircrew personnel in the physiological problems of flight, fitting and testing of oxygen masks, instruction in the medical aspects of tropical survival and the development of improved personal and safety aircrew equipment.

From December 1944 onwards all trainees passed through a grading school and were given twelve hours' dual instruction in flying and selected prior to the commencement of the ITW course.

Survey of Results and Conclusions

It was unfortunate that the urgency of the need for aircrew selection methods did not permit the unit to carry out any extensive research on test methods and validate them on a large number of candidates before they were actually applied in selection. Nevertheless, it was possible to correlate the scores in ground subjects with the group tests and also to correlate the SMA3 and the unit's final overall assessment of the individual's capabilities with pilot success up to EFTS in the groups sent out as pilots from ITW. There was also, of course, no way of knowing what percentage of those rejected at ITW on the basis of psychological tests and interview would have succeeded or failed in their flying training. The following conclusions were come to in regard to the various methods used:

Medical Officer's Interview

It is extremely difficult to assess the value of this method of selection. When the results of the MIU assessments, based largely on the

results of the interview, were acted upon by the ITW selection committee the failure rate at EFTS was definitely lowered from 25 per cent to as low as 12 per cent. It seems probable, however, that the total wastage rate at ITW plus EFTS may have been increased, because possibly as many as 50 per cent of those rejected would have made the grade had they been permitted to continue. Most of those were rejected as 'Temperamentally unsuitable', but it was only necessary to consider pilots who proved themselves on operations to agree that amongst them it was possible to find all types of personalities, and some would have been quite unsuitable according to the standards used at MIU.

Motivation was much easier to decide upon. This assessment really justified the time spent on the interview. A number of candidates admitted when given the opportunity that they did not wish to continue with flying training. Thus much time and expense was saved.

The interview also afforded a convenient and very suitable opportunity to gather biographical data, the value of which will be emphasised later.

To sum up, the medical officer's interview proved an unsatisfactory method of selection but was useful in gathering information upon which more satisfactory methods were based.

The Group Tests

Of the three group tests employed, the classification test and the arithmetical reasoning test were used purely as a measure of intelligence. On the results of these two tests alone it was possible to predict with some degree of certainty whether a candidate would pass or fail in the ground subjects. In one group of 110 trainees who scored below average in both tests only 7 pilots and 13 gunners were selected, the remainder rejected. The relationship between success in these tests, the pre-entry examination marks and navigation marks at ITW was well demonstrated.

The space perception test is a test of practical ability as well as of intelligence and was found to be of some value in predicting success in actual flying training, although the correlation was not high.

These tests would appear to be of definite value in the selection of aircrew material from a pool of low educational standard. They would be best applied and acted upon prior to commencement of ground training.

The SMA3

This test was of definite value in the selection of pilots out of the group. Other factors being equal, it was clearly proved that the man with a good SMA3 test was less likely to fail as a pilot than one with a poor test. It did not follow, however, that because the result of the SMA3 test was bad the candidate would fail. The machine provided a simple method of measuring co-ordination but is not as accurate as the Visual Link Trainer or flight test in predicting pilot success.

SOUTH-WEST PACIFIC

SOUTH-WEST PACIFIC

Biographical Data

The value of biographical data was confirmed. This appears to be the choice of all methods used by the MIU.

Of these data the amount of schooling, success in sporting activities and family background were found to be not so important as age and civilian occupation, both of which, as exemplified in the following report, were found to be of great significance.

Occupation and its Bearing on Pilot Success

Whether or not occupation has any bearing on pilot success was one of the first problems the Medical Investigation Unit dealt with. A classification of occupational categories into five groups was drawn up, but investigation showed that the classes were not detailed enough.

After detailed analysis of some 1000 occupational questionnaires, a new scheme of classification was introduced, four main groups being subdivided in thirteen categories as below:

***Group 1*: PROFESSIONAL, CLERICAL AND GENERAL ADMINISTRATIVE**

Category	*Remarks*
I. Professional: Administrative	To be judged by professional qualification, degrees, diplomas, etc.
II. Clerical (repetitive)	Where not professionally qualified or only partly so.
III. Salesmen	Shop assistants, insurance agents, etc.
IV. Consists of Categories II and III above where the trainee has had more than two jobs of these types.	

***Group 2*: SKILLED, SEMI-SKILLED AND UNSKILLED TRADES**

V. Skilled Tradesmen	Apprenticed and apprenticeship completed
VI. Semi-skilled tradesmen	Manual work (repetitive)
VII. Unskilled	
VIII. Consists of Categories VI and VII above, where the trainee has had more than three jobs of these types.	

***Group 3*: AGRICULTURAL WORK**

IX. Farm owner or manager
X. Farming cadet **Category IX under training**
XI. Farm labourer (permanent)
XII. Agricultural contractors

***Group 4*: MISCELLANEOUS**

XIII. Schoolboys and those who have recently left school and have been filling in time prior to entry into the services.

This new scale had its advantages; it gave a truer picture of the trainees' occupations; it abolished the anomalies of skilled and unskilled workers of the same class being classified together; and made allowance for two factors resulting from prevailing wartime conditions – separate categories for those trainees who had never settled to a definite job, and for those who had come straight from school into the forces.

On the assumption that an interview yields a truer analysis than does any questionnaire, it was decided that the medical officer, conversant with the new classification scale, should classify the trainees' occupations during their routine interview, the category numbers to be annotated 'A' where the trainee was under 21 years of age.

To find what relation this new classification scale bore to success in pilot training at Elementary Flying Training School, three courses 49, 50, 51 (600 cases approximately) were studied and the following results obtained:

OCCUPATION AND SUCCESS IN PILOT TRAINING AT EFTS

***Group 1*: PROFESSIONAL, CLERICAL AND GENERAL ADMINISTRATIVE**

Category	*Total Number Cases*	*Number of Cases Failed*	*Percentage Failure*
I	44	8	18.2
II	167	38	22.7
III	64	23	35.9
IV	4		

Total Group 1	**279**	**69**	**24.7**
***Group 2*: SKILLED, SEMI-SKILLED AND UNSKILLED TRADES**			
V	**74**	**10**	**13.5**
VI	**77**	**20**	**26.0**
VII	**16**	**4**	**25.0**
VIII	**16**	**3**	**18.7**
Total Group 2	**183**	**37**	**20.0**
***Group 3*: AGRICULTURAL WORK**			
IX	**27**	**5**	**18.5**
X	**60**	**6**	**10.0**
XI	**25**	**4**	**16.0**
XII	**1**	**1**	**100.0**
Total Group 3	**113**	**16**	**14.1**
***Group 4*: MISCELLANEOUS**			
XIII	**26**	**1**	**3.8**

Discounting categories where there were not enough cases to be significant (i.e. Categories IV and XII) it may be seen that schoolboys had the greatest success, with farming cadets next, and then skilled labourers. Least success was had by salesmen, semi-skilled and unskilled workers. It is significant that those having a greater chance of success as pilots were in the younger age groups – that is those just leaving school and young farmers.

Figures for the four main groups were combined and show that trainees in professional, clerical and commercial occupations had the least success: tradesmen, skilled and unskilled, had a slightly better success: then the agricultural workers, with the schoolboys still having the most success.

Not enough figures were available to determine the chances of success of the 'rolling stone', though indications were that, if a man had had several jobs of the skilled or semi-skilled trades, he had a slightly

better chance in pilot training than a man who had had one job of an unskilled nature.

With the older men, their previous occupation was of much higher significance in pilot training than it was with the lower ages. This one would judge as due to a more highly-developed occupational set. There is less adaptability in the adjustment to the acquiring of a new and complicated skill. This statement is given objective justification in the figures worked out covering success and non-success of particular trade groups. For instance, clerical and professional workers find adaptation much harder than the skilled manual labourer.

This dichotomy of hand and brain is not so significant in the younger age groups – a young clerk has not acquired a sufficient degree of occupational mould to prejudice his adjustment to such an extent as an older man.

There are, of course, other factors which must be taken into account. Though unassessable on a purely statistical basis, such variables as added responsibility, family ties, etc., which tend to make for cautiousness and restraint in action in the older groups, are of obvious importance in this connection. Where these may act disadvantageously with the pilot trainee, it is possible that they may contribute to successful training as a navigator. This would be consonant with the different skills involved in piloting and navigating ability. It is significant that research reports from overseas show that the better navigators are, on the average, in the higher age groups.

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[1] **Wg Cdr A. M. Gunn; Gisborne; born Carterton, 26 Jun 1912; medical practitioner; ADMS (Air) Sep 1943–Jul 1944; SMO No. 1 (Islands) Gp, Jul 1944–Aug 1945.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

V: SICKNESS IN NEW ZEALAND

V: Sickness in New Zealand

Hospitalisation

In accordance with a War Cabinet decision at the outbreak of war all cases requiring hospitalisation for more than a short period were admitted to civil hospitals. All major stations had a sick quarters which contained casualty room, inspection rooms and from ten to twenty beds. Other stations (Mangaroa, Swanson, Te Awamutu, Te Rapa, Weedons) had less elaborate facilities and relied on nearby service or civil hospitals for the admission of their bed patients. A small hospital was built to service Whenuapai and Hobsonville in October 1943 but was closed in May 1944.

Ashford hospital was established at Delta during the existence of that station from October 1943 to November 1944. It had accommodation for fifty patients and a complete ear, nose and throat surgical unit. During its existence it admitted 1300 patients.

Convalescent Depots

Royal New Zealand Air Force patients requiring convalescent treatment were admitted to the hospital at Hanmer Springs and to Raventhorpe Convalescent Depot, which was opened early in 1943.

In March 1944 a convalescent hospital was opened at Rotorua. It was felt that for aircrew personnel returning from exacting operational duties in the Pacific area the routine restrictions and general 'institutional' atmosphere of the existing convalescent depots were unsuitable. In addition, it was claimed that Air Force medical officers trained in the special problems pertaining to flying could best handle the many cases of sickness which had a psychological basis.

The Convalescent Depot at Rotorua had accommodation for 130 walking and 30 bed patients. It was staffed by three medical officers, three sisters (one nursing and two masseuse), physical education and recreational training instructors, occupational therapeutists, etc. Two part-time consultants in neuro-psychiatry and orthopaedic surgery attended the hospital monthly. The most modern methods of convalescent training were used in the hospital, emphasis being placed on the rehabilitation of as many personnel as possible for further useful duties in the service. A small number of selected cases from the Army and Navy were admitted to the hospital.

Between 12 March 1944 and 31 August 1945 the depot treated 1235 patients (368 aircrew and 867 ground staff). Of these 931, or 75.38 per cent, were made fit again for service duties.

Air Force stations situated in the Marlborough- Nelson area were relatively isolated and a considerable distance from the Army convalescent camps at Christchurch and Auckland. It was therefore considered desirable to set up a small convalescent depot to serve this area at the naval camp at Curious Cove in the Marlborough Sounds, where buildings of excellent quality and design and all conveniences, such as lighting and water supply, were available. The camp was taken over from the Navy and new buildings in the form of a recreation hut and additional sleeping accommodation were added.

The depot opened on 6 March 1944 and was closed down in March 1945, having by then treated over 500 cases.

Administration of Sick and Wounded Organisation

The RNZAF Sick and Wounded Section was formed in July 1943 under the general control of the Director of Medical Services. Its object was to facilitate the administration of personnel who became temporarily or permanently unfit for service through medical reasons, and to control sick leave and convalescence.

The earlier system of dealing with the sick and wounded was recognised as inadequate and the section had special functions to see that all medical cases requiring recuperative treatment were admitted to convalescent depots, that they got paid during treatment, or while on sick leave, and that no sick and wounded members of the force were officially lost sight of.

For administrative purposes the sick and wounded organisation was divided into three areas. Personnel who were likely to be non-effective through medical reasons for a period of fourteen days or more were posted to the nearest Sick and Wounded Section and became the complete responsibility of the section until they were fit to return to full duty or were transferred to the RNZAF reserve.

The general policy of treatment was to reduce the amount of sick leave at home to a minimum; and unless there was good reason, medical or domestic, in favour of a member returning to his home during convalescence or treatment, all personnel requiring convalescent treatment or 'hardening-up' on discharge from hospitals were posted to various institutions under RNZAF supervision.

From its inception to May 1945, Sick and Wounded was responsible for 7604 personnel, of whom 5310 were posted back fit for duty. Discharges and postings to the Reserve accounted for 1443, leaving 851 on Sick and Wounded strength as at 1 June 1945. Over 2500 personnel were given treatment at convalescent depots.

The guiding principle in the administration of Sick and Wounded personnel was at all times one of personal contact with the individual and attention to his welfare. This policy ensured continuity of medical supervision of all cases and resulted in the return of personnel to duty with a minimum of delay. In cases where a man became permanently unfit for further service, it was possible to facilitate his release from the service as soon as he became fit for a civilian occupation. Such cases were given full advice on their future medical welfare, the claiming of pensions, and rehabilitation procedures.

In its Sick and Wounded organisation the RNZAF created a better and more complete control than did the Army. The common difficulty was that of limiting the time spent at home by the recruits after their discharge from hospital. The Army difficulties were manifold and control was weakened by the divorce of Army Sick and Wounded Branch from Medical Headquarters. Although the Air Force Medical Branch controlled the Air Force personnel on discharge from hospital, it seems that the fullest use was not made of convalescent depots, and persistent check was still necessary to reduce manpower wastage in convalescence at home.

Health of Force

***Non-effective Rate*: The average rate of medical non-effectiveness for each year is set out below, expressed as a percentage of the average total strength in New Zealand:**

	Per Cent
Period to 31 March 1941	2.73
Year ended 31 March 1942	3.04
Year ended 31 March 1943	3.17
Year ended 31 March 1944	3.55
Year ended 31 March 1945	4.84
Year ended 31 March 1946	5.89

The non-effective rate increased each year.

In the earlier years of the war, personnel who remained off duty for medical reasons for longer than three months were posted to the Reserve and consequently were no longer included in the non-effective rate. Following the War Cabinet's decision of 27 August 1943 that unfit personnel were to be retained on the strength of the RNZAF till fit for a civilian occupation, personnel who remained off duty for over three months, instead of being posted to the Reserve, were kept on the strength of Sick and Wounded Section. This naturally caused the non-effective rate to increase.

In the later months of 1944 a large number of personnel who were fit for duty were demobilised, and this naturally had the effect of increasing the proportion of total strength who were medically unfit.

The 1945 New Zealand non-effective rate was artificially weighted by the inclusion of personnel medically repatriated from the Pacific, the United Kingdom and Canada.

***Incidence of Diseases*: The principal groups of diseases which caused personnel to become non-effective in New Zealand are tabulated below:**

Disabilities	*Approx. Rate per 1000 per Annum (Average)*	*Percentage of Total Disabilities (Average)*
Diseases caused by infection or infestation	143	25
Diseases of the nervous system and mental diseases	28	5
Diseases of the ear and nose	23	4
Diseases of the respiratory system	26	4.5
Diseases of the digestive system	123	21
Diseases of the bones, joints, muscles, fasciae, and bursae	37	6
Diseases of the skin and areolar tissue	47	8
Injuries	67	11.5

The largest single group of diseases comprised those caused by infection or infestation. They accounted for one-quarter of new cases, and out of every thousand men approximately 143 became non-effective by reason of one of these diseases during the course of a year. By far the largest proportion of these diseases were of course relatively mild, the highest individual incidences being in such disabilities as common cold, mild influenza and various infections of the respiratory tract.

Injuries accounted for 11½ per cent of the cases, the incidence rate being approximately 67 per thousand per annum. It is of interest to note that injuries sustained in aircraft accidents formed an extremely small proportion of this figure, the actual incidence rate for the year ended 31 March 1945 being 1.4 per thousand. The incidence of deaths and reported missing as the result of aircraft accidents during the same period was 1.9 per thousand.

***Venereal Disease*: In the RNZAF in New Zealand from the beginning of the war to 31 March 1945 the number of cases of gonorrhoea was 527 and of syphilis 45.**

The incidence of gonorrhoea dropped sharply after March 1942. The rate of venereal disease compared favourably with that of any other service.

***Sick Parades*: From the beginning of the war to 31 March 1945 there were approximately 824,000 attendances on sick parade in New Zealand. The average during each year varied between 8 and 11 attendances on sick parade for each man in the service in New Zealand.**

There was no incidence of disease other than that normally met with in civilian life in the same age group, and there was no serious epidemic of any infectious disease. The medical administration was not faced with any serious problem.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VI: AERODROME CONSTRUCTION UNIT IN MALAYA, AUGUST 1941 – FEBRUARY 1942

VI: Aerodrome Construction Unit in Malaya, August 1941 – February 1942

In June and July 1941 a selection board chose the personnel of Unit 24, RNZAF, for aerodrome construction work in the tropics. The sound policy was adopted of allowing the medical officer (Captain North [1]) who was to accompany the unit to take part in the selection. In six months' service in Malaya and on Singapore Island the loss of man-hours due to illness was infinitesimal, and at no time were the operations of any branch of the unit hindered by sickness.

The unit left New Zealand in August 1941 for Malaya. In addition to the medical officer there were seven medical orderlies, and this relatively large number was required because the unit was to work in as many as three or four places at one time. There were also a dental officer and two dental orderlies. A supply of medical and dental equipment calculated to last one year was taken from New Zealand.

Wherever sections of the unit were working, good food, good housing, and an abundant and safe supply of water were provided. With these conditions and careful attention to hours of work and rest, it was reported that the members of the unit did harder and more sustained manual work than had ever been done before by white men in Malaya. There was very little skin disease, which was attributed in part to the fact that many men worked stripped to the waist, wearing only sun helmets, shorts, boots and socks. Careful attention was always paid to anti-malarial measures, with the result that few cases developed, and there were no cases of venereal disease.

The unit was in Malaya at the time of the Japanese attack. On 3 February 1942, when the unit was loading the ship on which it was to

leave Singapore, the docks were severely bombed. One New Zealand airman was killed, two died of wounds, and six were severely burned by the bomb blast and had to be left behind in Singapore when the unit eventually left by two ships on 6 February. On the journey to Batavia both ships were attacked from the air and one airman was killed and 18 others wounded. One had to be left behind in Java when the unit sailed for Australia later in February, when there were heavy Japanese bombing attacks prior to invasion. New Zealand was reached in March with most of the unit in good health despite the hazardous journey from Singapore independent and enabled it to practise continuous reinforcement and rotation of personnel.

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[1] Wg Cdr N. H. North; Dunedin; born Chandpur, East Bengal, 7 Feb 1908; obstetrician; medical officer No. 1 Aerodrome Construction Unit, Malaya, Aug 1941-Mar 1942; OC Malaria Control Unit, 3 Div, Sep 1942-Aug 1943; SMO Northern Group, RNZAF, Aug 1943-Jan 1945.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VII: MEDICAL SERVICES IN THE PACIFIC

VII: Medical Services in the Pacific

At the outbreak of the war the RNZAF was a training service only. In October 1940 a small Reconnaissance Flight was established in Fiji, and in August 1941 an Aerodrome Construction Unit went to Malaya for a short but hectic period.

Japan's rapid drive south early in 1942 made it imperative for the RNZAF to develop an operational force and, at the same time, to continue training its agreed quota of aircrew personnel under the Empire Air Training programme.

There were initial delays involving both personnel and equipment in this programme of expansion, but despite difficulties the force grew steadily so that, by December 1945, 8000 personnel were in the Pacific zone and more than 12,000 had served a term of duty there.

In July 1942 No. 9 (Bomber Reconnaissance) Squadron arrived in New Caledonia, moving to Espiritu Santo in March 1943. In October 1942 No. 3 BR Squadron began operations from Espiritu Santo and a month later a detachment of this squadron operated from Guadalcanal.

The first actions fought by fighter squadrons took place in April 1943, when Guadalcanal was being hard pressed and subjected to many daylight bombing raids. Actions were also fought over Rendova and Munda in June 1943. During the landings on Vella Lavella New Zealand fighter squadrons gave support to 3 NZ Division. By the time that Japanese air power had been driven from the Solomons area, the fighter squadrons had to their credit 99 enemy aircraft confirmed shot down and 14 probably destroyed.

In November 1943 a flight of bombers began operations at Munda, and by the end of 1943 there were 4400 ground staff in the Pacific area.

In April 1944 a bomber-reconnaissance squadron was based on Bougainville, while in October 1944 squadrons were based at Emirau and Green Islands, and in 1945 at Jacquinot Bay in New Britain.

In May 1945 there were four fighter squadrons at Bougainville, two at Jacquinot Bay, one at Emirau and one at the Green Islands.

General Organisation of Force

***Aircraft and Aircrew*: Four types of operational squadron were formed: (*a*) Fighter – Kittyhawk and Corsair; (*b*) Bomber-reconnaissance – Hudson and Ventura; (*c*) Flying boat – Singapore and Catalina; and (*d*) Dive-bomber – Dauntless.**

The operational zone extended to the Equator and was concentrated mainly about the New Hebrides- Solomons and the Admiralty Islands area, with New Caledonia, Fiji and Tonga as important bases. All aircraft were flown by RNZAF crews from New Zealand or the United States to the operational zone.

Two transport squadrons (DC3s) based in New Zealand operated throughout the zone and were responsible for shifting masses of personnel and freight. To a large degree they made the RNZAF independent and enabled it to practise continuous reinforcement and rotation of personnel.

Ground Staff

***Servicing Units*: All non-flying personnel were formed into Servicing Units. Each unit contained 300 administrative, technical and medical personnel, and was intended to be able to keep one squadron of aircraft fully operational and at the same time to be capable of fending for itself under operational conditions. The difficulties experienced by No. 3 BR Squadron and its servicing unit (Flight Lieutenant Fenwick [1] was the medical officer) in establishing themselves in Espiritu Santo in October 1942 revealed deficiencies in the original organisation, but as the**

campaign progressed modification of the establishment of the units, better liaison with the United States Forces and an improved supply position enabled these objectives to be achieved.

***Smaller Units*: Frequently it was necessary for servicing units to be split into sections to maintain detached flights of aircraft serving short-term commitments in widely separated localities. Other small specialist units (e.g., sawmilling and radar) varying from ten to a hundred personnel frequently served in isolated posts.**

Tour of Duty

From the outset it was accepted that tropical conditions would limit the period for which personnel could serve efficiently in the Pacific zone. It was an important duty of the Medical Branch to assess the effects of climate and disease on aircrew and ground staff and to advise how long their hours of duty should be.

***Non-flying Personnel*: Originally the time was set at twelve months overseas, of which a period of three to six months was to be in a forward zone. As lines of communication lengthened it would have been impossible to maintain this rate of relief and replacement, but as living conditions were improved and sickness was lower than expected the time of duty in forward zones was progressively extended to eighteen months. Many personnel served two such terms without ill-effect.**

***Aircrew*: The term of duty for aircrew was more flexible and varied according to operational conditions. Fighter pilots in forward areas had tours limited to six to eight weeks, while crews of flying boats and bomber-reconnaissance squadrons were frequently away from New Zealand for six to twelve months without relief.**

Medical Administration

From the outset of the campaign RNZAF units came under the direction of the area commander of the United States Forces but the

internal RNZAF organisation remained unaltered. The Director of Medical Services (Air) in New Zealand retained responsibility for policy decisions and his authority was required for any changes

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[1] Sqn Ldr G. de L. Fenwick; Auckland; born Auckland, 11 Jan 1916; house surgeon; EENT specialist, RNZAF, Nov 1943-Dec 1944.

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in organisation or administration that went beyond strictly local or group affairs.

Stations in the Fiji- Tonga-Norfolk area remained under Air Department control throughout. The senior medical officer in Fiji was responsible to DMS (Air) for local supervision of the three stations on the island, and at one stage also acted as SMO to New Zealand and Fiji army units. In May 1943 Army eventually provided sufficient medical officers for these units to be self-supporting and the RNZAF officers were then released from these part-time duties, which at one stage seriously interfered with their own station duties.

No. 1 Islands Group was established in April 1943 to relieve Air Department of all routine administrative work in the rapidly expanding New Hebrides- Solomons theatre. Wing Commander Hardwick-Smith [1] was appointed the first SMO to the Group and he built up a staff which coped with all medical postings, equipment and repatriations in the zone. The SMO remained subordinate to DMS (Air) in policy matters, but in practice had a degree of authority which allowed most actions to be reported in retrospect.

Medical officers in forward areas reported either individually or through their local senior member to the SMO, who forwarded each month consolidated statistical and factual reports to DMS (Air).

The organisation worked smoothly despite the long distances which frequently separated forward units from their Group Headquarters. This was largely due to the fact that individual medical officers were

encouraged and prepared to accept local responsibility without too-ready reference to Group.

Medical documents went forward with all personnel and remained in the medical section of the units, where procedures were in accord with usual practice. Effective co-operation was given by most United States units in supplying case records of casualties evacuated to their medical services. The subsequent arrival of Army units in the zone, with different procedures both internally and in relation to disposal of records from United States sources, led to serious confusion through misdirection of documents for some time, and was a strong argument for having a standard practice in all New Zealand formations operating in the same area.

Medical Selection of Personnel for Overseas Units

Early in the war men unfit for overseas service in the Army were accepted in large numbers by the RNZAF and trained in technical

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[1] Wg Cdr J. E. Hardwick-Smith, m.i.d.; Lower Hutt; born Wellington, 31 Oct 1910; medical practitioner; SMO No. 1 (Islands) Gp, Mar 1943-Feb 1944; President, Central Medical Board, Dec 1944-Aug 1945.

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trades, so that from 1943 onwards it became increasingly difficult to find enough fit men to fill overseas units. Station medical officers re-examined all unfit men in 1943, searching for those who could be reclassified as fit. Not many were found, but there were large numbers who were unfit because of minor defects of vision, hearing, locomotor system, etc. In 1942 the classification B2 (Base) was introduced, modifying the standards in these respects, and all unfit men were again re-examined. The move was well justified as many men in this new classification served well at stations as far north as the New Hebrides. In late 1943 an Embarkation Depot was established at Auckland, where doctors with overseas experience conducted a final medical examination

of all personnel immediately before embarkation. The system ensured that only fit men went to the Pacific, and the periodic re-examination of the 'unfits' on New Zealand stations precluded the chance of wrong grading.

Medical Teams with Overseas Units

***Medical Officers*: An ideal aimed at, and periodically achieved, was that one medical officer should be attached to each servicing unit and should care for its personnel and the aircrew of the squadron serving with it. In most instances at least two servicing units were stationed at the same airstrip, so it was frequently the practice for one officer to be responsible for two units. This was a practicable burden for short periods and helped to solve the problem of the most economical use of medical officers, but was in marked contrast with the United States practice of having one or two medical officers to each maintenance unit and one flight surgeon to each aircrew group.**

***Others*: The medical team with each servicing unit, in addition to the medical officer, consisted of four medical orderlies, one hygiene orderly and four general duties men attached for hygiene and malaria control work.**

Equipment

The equipment consisted of a tented 10-bed sick quarters and medical equipment and supplies drawn to a special scale designed to enable most medical and minor surgical cases to be dealt with for a period of about one to two months without restocking. Once overseas the units depended on replacements drawn through United States services, which were always ready to meet demands. The equipment was good and adequate. Only two comments can be made.

First, the tented sick quarters were necessary for mobility but were uncomfortable and difficult for patient and staff because of the need for individual mosquito nets. The Indian pattern tent provided for earlier

units had much to recommend it over the American pattern which later became standard issue. The American type was hotter and emanated a particularly unpleasant odour when under direct sunlight. This was not a minor point for a malaria patient under mosquito netting. However, when a unit had established itself it was often possible to move the station sick quarters to a Quonset hut or similar mosquito-proofed building to the great advantage of patients and staff.

Second, the equipment was packed in a haphazard collection of wooden crates. As it was, there was not much packing and unpacking required in this campaign, but under less static conditions it would be a serious disadvantage if more robust, more conveniently sized and more distinctively marked containers were not provided.

RNZAF Hospitals

To cope with the increasing number of personnel in Base Depot at Espiritu Santo from mid-1943 onward the station sick quarters was expanded to forty beds, designated No. 2 Hospital and given extra medical complement, which in December 1943 included two nursing sisters. No. 3 Hospital was later established at Guadalcanal and nursing sisters were posted there in April 1944, and also to Fiji and Norfolk Island, which had well-equipped sick quarters. The hospitals served chiefly their own stations but could cope with medical cases beyond the scope of station sick quarters in forward areas. Many medical orderlies were good nurses, but the great advantage of having trained sisters on the staff was readily apparent in the increased scope and quality of the work which their presence permitted. Had they been more readily available and had living conditions permitted, they would have been of great value in all station sick quarters of twenty beds or more.

Base Hospitals

Except for a short period at Green Islands in 1944 no surgical facilities were provided at station sick quarters or RNZAF hospitals. Urgent cases were evacuated to the nearest Allied surgical unit and non-

urgent cases, together with cases beyond the scope of the station sick quarters, were evacuated by air to the nearest US Navy base hospital. Cases earmarked for repatriation to New Zealand were staged through Base Depot, where they could be retained for further treatment or investigation or readily evacuated by air to New Zealand.

In general, the medical services of the Allied base hospitals were very good. By our standards there was occasionally an over-zealous application of intensive 'processing' which could lead to a man being an unnecessary time from his unit, and occasionally to unpleasant sequelae. However, the chain of evacuation was not always rigid and a medical officer often had a choice of medical units to which he could refer his cases. Many medical officers lamented the lack of surgical facilities in the RNZAF medical services, but unless many units had been concentrated in one area where casualties from enemy interference could be expected, the amount of work would not have been enough to support a surgical establishment or maintain competence in its staff.

Evacuation of Casualties

This was made easy by an excellent air-transport service between the most forward units and New Zealand, augmented if necessary by an emergency flying-boat service which could reach all outlying units. The nature of the campaign enabled base hospitals to be at all times no more than a few hours' flying time to the rear.

Isolated Units

From early 1943 onwards small radar units of ten to forty men were established increasingly in remote places. One or two medical orderlies were attached to each unit and were responsible for general medical, hygiene and anti-malarial duties.

A few of these units were ideally situated but others were in most miserable surroundings. In all cases the isolation and the exacting and irksome routine of their work made minor maladies loom large in the life

of the men. In 1943 a medical officer was appointed to full-time duty with these units, and although much of his time was occupied in transit it was found that his periodic short visits did much to improve efficiency and morale as well as to reduce serious sickness.

Airstrip Casualty Procedure

On all airstrips a tent or Quonset hut was located centrally and equipped to provide resuscitation and first aid. The forces operating from the strip provided medical teams of one officer and one or two orderlies with an ambulance or specially equipped jeep, and at all times during flying one team was on duty prepared to deal with casualties.

Three officers, Flight Lieutenants de Lambert, [1] Whitehead, [2] and

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[1] Flt Lt B. M. de Lambert, GM; Dunedin; born Queenstown, 6 Jul 1920; medical practitioner.

[2] Sqn Ldr V. I. E. Whitehead, MBE; Lower Hutt; born Sydney, 21 Feb 1915; medical practitioner.

Scrivin, [1] were decorated for their gallantry in rescuing aircrew from aircraft which crashed and burned near the airstrip.

Special Problems concerning Fitness of Aircrew

The first duty of the medical team with an operational unit lay with the aircrew. No less than the ground staff, they were subject to sickness and had to be protected in every possible way. This entailed amongst other things the provision of the best type of sleeping quarters, supervision of strict lights out, and atebrin prophylaxis. If they became sick they had to be treated and returned to their squadrons at the earliest possible moment.

The medical officer also had a more onerous and an almost wholly individual responsibility to the aircrew. He was the one best able to

detect and abort the earliest signs of fatigue, or to notice the insidious onset of functional disorders which in an individual might be serious but in a squadron could be disastrous.

To do this properly the medical officer had to know his aircrew individually and had to spend much of his time with them. In many squadrons the operational commitments were not strenuous and personnel served tours of duty of up to six or nine months without relief, so there was little difficulty in assessing the character and fitness of the individuals. In such squadrons the operations became much akin to routine training flights and the conditions were in many respects like those in any New Zealand station. The aircrew in such stations frequently fretted for more activity, but it was only occasionally that any problems arose.

In forward zones where active operations were going on and the need for supervision by a medical officer was more pressing, there were fewer opportunities for doing this adequately. A fighter squadron might move to a new station one evening and next day start on a series of stiff operational flights. Under such circumstances the medical officer had to spend all the time that he could spare from his station duties with the squadron. This meant sleeping in the same quarters, being about when they took off and being in the crew-room when they returned. He needed perhaps to divide his time between two squadrons operating from different strips and using different crew-rooms. Problems of trivial importance or perhaps heralding a more serious complaint would be introduced either casually at a meal or only in strict confidence. For this reason it was best that the medical officer should have some private retreat close to their quarters where aircrew could find him at certain hours.

Many of the problems encountered by aircrew, whether it was

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[1] **Flt Lt L. A. Scrivin, MBE; Auckland; born Palmerston North, 5 Feb 1918; house surgeon.**

the reduction of fatigue, the efficiency of a flying helmet, or the way to survive in the jungle, had a physiological basis. The medical officer who had done his basic training thoroughly and who was prepared to tackle these problems on the spot could do much to help his aircrew, and his efforts were rewarded by their ready confidence in him.

It was to ensure this continuous close medical supervision and a specialised knowledge of aviation medicine that the United States Forces posted a flight surgeon to every operational squadron. He and the Intelligence Officer were the only non-flying members of a permanent team. Their training was good and many did excellent work, but others found that their greatly reduced medical responsibilities were most restrictive and irritating. Certainly, some showed a degree of inertia that could not fail to react on their aircrew. To a degree the same applied to medical officers attached to American maintenance units for they had no stimulus from contact with aircrew. Though our system could not provide the continuity of medical care to the squadrons and occasionally put too much work on a single officer who had to look after two servicing units and two squadrons, it worked well in practice. By more specialisation the services provided to aircrew might be improved, but not to the extent that would warrant medical officers being attached to all squadrons as well as to servicing units. Perhaps the ideal would be to have one or two flying personnel medical officers on unattached duty with all squadrons in an operational theatre.

The morale of the aircrews was good, and, as demonstrated by the fighter squadrons in New Georgia in 1943, was best when opposition was strongest. Here a daily programme of long fighter sweeps had to be modified only because of heavy losses and physical exhaustion.

Several factors went to make up a high morale. Nearly all aircrew had some years of flying experience behind them. They had squadron leaders of considerable operational experience and were confident in their aircraft and their own ability. They seemed dependent on only two other factors – a good rescue service if they were shot down, and a good

medical service if they were rescued. As far as was possible these were provided.

The 'Dumbo' flying-boat service with crews, often including a medical officer, who were prepared to land if necessary within a few hundred yards of an enemy shore, was always standing by or actually flying near a zone of known activity. Its many remarkable feats of rescue proved its efficiency.

***Food*: Another factor which affected both health and morale was food. Almost all our supplies were obtained through the United States Forces. They provided a highly organised supply system which depended basically on dehydrated and canned food, augmented at all bases by large refrigerated stores for meat.**

The climate had subtle effects on both appetite and palatability. A piece of prime New Zealand mutton, having passed through the refrigerated chain, could be nauseous when served hot at midday. The effect on the palate of some of the American rations was no more appetising, and though they were designed to provide all supplementary factors in abundance, the fact that they were not eaten in large enough quantities accounted for some cases of vitamin deficiency.

Attempts were made to supplement the diet by fresh food, chiefly vegetables, flown from New Zealand. They were appreciated, and though they deteriorated so fast that wastage was high, and they reached only base areas, the effort was worth while.

The experience demonstrated that in this zone reliance must be placed almost entirely on canned and dehydrated rations, and though keeping qualities are important, due regard must be given to palatability. 'Carter's spread' was a horrible example. It was a high-melting-point butter substitute with excellent keeping qualities but so unpleasant to eat as to be almost universally shunned. Tinned New Zealand butter was no better because it deteriorated rapidly and foully. Some samples of modified New Zealand butter which were provided for trial were pleasant

and had sufficient keeping qualities to warrant further investigation.

Hygiene and Sanitation in Camps

***Camp Sites*: The siting of airstrips was necessarily governed by tactical and topographical factors so that the surrounding terrain was frequently poorly suited for establishing camps. The natural handicaps of dense growth and heavy rains had to be competed with, and camps built in coconut plantations were, in general, the most habitable.**

Tents were used until camps were well established, and though we lagged well behind the United States Forces in providing more permanent quarters, our sawmilling units did very valuable work in providing material for improving living conditions. In time most base camps were provided with at least partially timbered quarters, and here living conditions were good.

Water caused no concern, owing to the excellent provision from American mobile distillation plants. Most men found that despite the heat and sweating there was no great thirst for plain water. Drinks with a bitter taste were more refreshing and fruit juice and extracts were in demand. At one station some sixty men were rapidly prostrated due to traces of cadmium liberated from a galvanised drum by the preparation in it of a highly acid fruit drink.

The liberal water supplies enabled showers to be provided, and even at stations where sea-bathing was possible they were popular and undoubtedly helped to reduce the incidence of skin rashes.

***Garbage and Sewage Disposal*: The fly nuisance was ever present but could be controlled if preventive measures were carried out faithfully. Pit latrines were netted and were burned out twice daily with dieselene oil, and garbage was either dumped at sea or incinerated. Complete incineration was difficult owing to the heavy rainfall, and the dumping practice had many advantages. It needed to be carried out with some regard to local tides and currents, and failure to do this, together**

with what seemed the quite inexcusable use of jetty latrines by some United States units, made otherwise safe beaches unfit for swimming.

Screening, traps, and the liberal use of various types of pyrethrum dispensers controlled flies about the messes but never abolished them, so that isolated cases of gastro-enteritis were always present. That there was no major outbreak of fly-borne disease showed that control measures were for the most part adequate.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VIII: MALARIA CONTROL AND INCIDENCE OF SICKNESS

VIII: Malaria Control and Incidence of Sickness

Potentially malaria was the biggest hazard to the health of personnel posted to the Pacific zone west of the 170 degree parallel. The incidence in the United States ground forces in the initial stages of the Solomons campaign was as high as 90 per cent in three months, and the probability that our forces would suffer a high incidence was a factor in specifying a limited tour of duty in malarial zones. The low incidence which occurred in RNZAF personnel was due to good control measures, which relied on adequate education in personal protection, major draining schemes, and the keeping of natives at a safe perimeter.

Medical officers were responsible for malaria-control measures in their units. They were assisted in the detailed execution of this work by specially selected orderlies who were given a course of training in the entomological and practical aspects of control at training schools set up by the Fiji Government medical services and by the United States Forces. One orderly so trained was posted to each servicing unit and he had four field assistants.

The responsibility for adequate instruction of all personnel in the rationale of corporate and individual control measures rested largely with the unit medical officer. This task was made easier from 1944 onward when courses of instruction with more detailed courses for all officers and NCOs were given to all ranks at the Embarkation Depot.

When moving to recently-won ground, American forces sent in heavy earth-moving machinery at the earliest possible moment. Some concentrated on building an airstrip, but others were put to work at once on the drainage and filling of the proposed camp area. These major drainage schemes were a masterly attack on the control problem and were largely responsible for the ultimate clearing of the longer-

established camps. But the nature of the terrain made organised and detailed spraying with oil and kerosene the line of attack when moving to new territory, even after 1944 when spraying of DDT by aircraft was introduced.

In the closely confined space about an airstrip, when many different units and organisations were grouped, each unit was very dependent on the thoroughness of the control measures of other units. In general there was little cause for complaint, but one of our medical orderlies who did some original work in species classification in the Solomons maintained that he could find all the specimens he required in other units' terrain.

Systematic control measures rapidly brought the mosquito population under control, and the standard use of atebrin lowered the incidence of overt malaria so that even in forward areas an unwarranted sense of security tended to arise. This attitude, combined with the enervating climate, made it easy to be casual in the use of mosquito netting and protective clothing, and this undoubtedly accounted for the sporadic cases of malaria which continued to occur even in long-established camps. In such circumstances a commanding officer who was convinced of the necessity for strict personal discipline could do much to reduce the incidence in his unit. Unfortunately all executive officers were not in this class, and it seemed to be chiefly in this respect that our control was behind that of the best American units.

By 1945 it was possible to abolish personal protective measures at Espiritu Santo and Guadalcanal, but in all other malarial zones they were utilised throughout the campaign.

The rapid growth of aircraft movement in the Pacific caused all countries beyond the malarial zone to take urgent measures to prevent the introduction of anopheline mosquitoes.

The spraying of aircraft in flight with pyrethrum aerosol dispensers was theoretically an ideal method, which failed in practice due to the

difficulty of adequately spraying all compartments of the aircraft and lack of responsibility on the part of the crews. On all RNZAF stations spraying on arrival before unloading passengers or freight became standard practice, and was the responsibility of the medical section. In addition, possible breeding grounds in the vicinity of overseas airports were treated.

Anopheline mosquitoes did not spread to Fiji or New Caledonia, the two most vulnerable areas, despite the fact that live specimens were occasionally found in aircraft, and that male specimens thrived in captivity in these countries.

Atebrin prophylaxis was enforced in all forward areas and was undoubtedly effective in reducing morbidity rates overseas if not the ultimate incidence of infection.

This is shown by two facts:

(i) Medical officers found that only about 10 per cent of cases presented a picture that could be recognised confidently on clinical grounds. In most cases the diagnosis was made only after repeated blood examinations in men with vague asthenia or muscular pains, or with a persistent tracheo-rhinitis or gastritis.

(ii) One-third of all primary cases did not suffer recognisable malaria overseas and were diagnosed for the first time in New Zealand, usually several months after their return. Our blood smears in many cases were examined in laboratories of allied medical units and the technicians in some cases did not inspire confidence, but this high incidence of primary attack in New Zealand was due to adequate suppression overseas and not due to inadequate diagnostic facilities.

Of all men who served in malarial zones 4.55 per cent contracted the infection: 3.4 per cent had the primary attack overseas and 1.15 per cent in New Zealand.

It was to be expected that aircrew, with a shorter tour of duty and, in many cases, with better living quarters, would have a lower incidence, even though a few of them were inevitably infected due to forced landings in hyperendemic zones. They had an incidence not quite half

that of ground staff.

Treatment was carried out in station sick quarters on a standard atebrin, quinine, plasmoquine regime, and it was effective to the degree that, although there was a relapse rate of 30 per cent (mostly after return to New Zealand), only seven men out of 10,000 had to be repatriated to New Zealand on account of malaria.

At first all personnel returning from the malarial zone were given a course of treatment on arrival in New Zealand, whether or not they had clinical haematological evidence of infection. It is difficult to assess the value of this scheme, which was abandoned in August 1943 because of its increasing impracticability and the relatively low incidence overseas. It was replaced by the taking of a blood smear from all returned personnel on disembarkation, and the few cases so discovered were retained for immediate treatment.

Malaria, Jan 1943–Jul 1945

	Aircrew	*Ground Staff*	*Total*
Men returned	**2036**	**9144**	**11,180**
Number attacked overseas	**41**	**283**	**324**
Primary attacks in New Zealand	**11**	**107**	**118**
Relapses in New Zealand	**10**	**85**	**95**

Health of the Force

Deaths in the Pacific theatre totalled 345 and occurred almost exclusively in aircrew personnel. They were due to:

Enemy action (and lost and missing on operations)	**256**
Accidents (flying and non-flying)	**82**
Sickness	**7**
Wounds and serious injuries due to enemy action	**58**

Sickness: **While overseas each man reported sick, on an average, twenty-three times a year – much more often than in New Zealand – but the non-effective rate due to sickness and injury was consistently and often markedly lower than on New Zealand stations. From August 1943**

to March 1945 it was just under 2 per cent for the Solomons- New Hebrides area and about 3 per cent for Fiji.

There were several factors responsible for this low incidence of sickness. They were:

(i) The men serving overseas had successfully passed at least three examinations by service medical officers before leaving New Zealand and therefore could be said to measure up fully to our standards of fitness for tropical service.

(ii) The great majority of the ground forces at no stage experienced enemy opposition. In the early stages at Espiritu Santo, Guadalcanal and Bougainville there were restrictions and interruptions due to air raids or artillery fire, but this enemy action was never severe and did not disrupt essential medical, sanitation or anti-malaria services. Under different circumstances the incidence of such conditions as malaria and dysentery could be entirely different.

(iii) Despite the low non-effective rate the high sick-parade rate must be accepted as an index of morbidity, even though it was of minor nature. It could have been due to low morale or to a high incidence of organic trivia. Certainly the first factor operated and sick-parade rates varied in relation to the morale of the unit, but it was largely due to the accepted policy that all conditions should be reported, especially skin rashes and minor traumatic injuries, that the attendance rate was high. The rapidity with which certain of these conditions deteriorated due to neglect in the tropics warranted this policy, and under circumstances where it could not be carried out it would be reasonable to expect a higher incidence of morbidity from these causes.

(iv) In general the facilities for personal hygiene were good. In some cases good surfing was possible and was a great asset, but water was plentiful enough in almost all areas for showers to be freely available. This again was an advantage made possible by the relatively static state of the campaign.

To summarise, a fit man, given good medical, hygiene and anti-malaria services and not seriously molested by an enemy, can do hard work in this theatre with no more illness than he would experience in New Zealand.

Incidence of Disease

The principal groups of diseases causing personnel to become non-effective in the Pacific area are set out below.

Disabilities	*Solomons-New Hebrides Area*		*Fiji Area*	
	Approx Rate per 1000 per Year (Av.)	Percentage of Total Disabilities (Av.)	Approx. Rate per 1000 per Year (Av.)	Percentage of Total Disabilities
Diseases caused by infection or infestation	215	24	321	39
Diseases of the nervous system and mental diseases	30	3	20	2½
Diseases of the ear and nose	40	5	16	2
Diseases of the respiratory system	18	2	22	3
Diseases of the digestive system	162	18	147	18
Diseases of the bones, joints, muscles, fasciae and bursae	36	4	22	3
Diseases of the skin and areolar tissue	173	20	139	17
Injuries	137	16	82	10

Although the non-effective rate was lower in the Pacific area than in New Zealand, it will be noted that the proportion of personnel actually reporting sick was greater. The principal groups of diseases of which the incidence in the Pacific was considerably higher than in New Zealand were those caused by infection or infestation, diseases of the digestive system, diseases of the skin and areolar tissue, and injuries. The higher rate of diseases caused by infection or infestation was caused in a great measure by outbreaks of dengue fever and dysentery, and during the year ended 31 March 1945, when there were no outbreaks of these diseases, the actual incidence of diseases caused by infection or infestation was

only 97.5 per thousand in the Solomons- New Hebrides area and 144.4 in the Fiji area. Diseases of the skin and areolar tissue were naturally higher in incidence in the Pacific area.

Skin conditions accounted for 20 per cent of the non-effective rate, and in some degree or other all personnel were affected at some stage of their service. Wing Commander Forrest [1] described the following conditions:

(a) The weeping dermatoses were the most common and would usually respond to early treatment. Where the response to complete bed rest and local treatment was delayed it could almost always be found that the man had an eczematous background, often so remote or so mild that it had been regarded as insignificant by him or his medical officer in New Zealand. Such cases were difficult to cure completely and many had ultimately to be repatriated.

(b) *Fungus infections* were usually acute and short-lived and were almost never due to an extension of a pre-existent lesion. In fact, men who had been troubled with recurrent mild tinea of the feet in New Zealand found that the condition remained healed overseas, where much more attention was paid to foot hygiene.

(c) *Indolent tropical ulcers* due to a low-grade mixed infection in an abraded wound, usually of the shin, were a potential source of prolonged incapacity. The basis of treatment lay in early recognition, prevention of vascular stress by elevation or elastic support, and the use of an adequate bacteriostatic agent in a non-adherent and bland base. Once fibrosis of the ulcer edge occurred, healing became a slow and tedious process. The RNZAF introduced propamidine cream in the treatment of these cases, with good results.

Infections and infestations were twice as common as in New Zealand and accounted for 25 per cent of all non-effective states. This is not a high figure for tropical service and reflects the general adequacy of the hygiene services. More important, at no stage was there any particularly high local incidence. Of the three chief infections, malaria, enteritis and dengue fever, it was the last which caused the highest incidence on any single station. The outbreak occurred in Fiji in January-March 1944 and it demonstrated the difficulties of adequate mosquito control when situated near a large civil population, and the difficulties in dealing with a day-biting vector. Many of the cases were severe, with a degree of

prostration and long convalescence that was not equalled by the usual malaria cases.

Functional diseases of the nervous system, chiefly mild neurosis, accounted for 3 per cent of the cases of unfitness in the Pacific, and this type of disability was the main cause of medical repatriation.

Conditions in this theatre presented some problems which were particularly conducive to the lowering of morale and the manifestation of these functional disorders.

For the great majority of ground staff an overseas posting meant twelve to eighteen months in a zone with an enervating climate, entirely male company and no 'leave' prospects. In the early stages of the campaign physical conditions were hard, but there was considerable evidence of enemy activity and morale was high. As the campaign advanced enemy activity lessened and so did the urgency of the task. Various 'contests' and organised distractions were provided but could not compensate for the lost stimulus of enemy interference. Certainly, under conditions of considerable and prolonged activity, functional disorders would have become more apparent, but it was the experience of all medical officers that the cases which occurred were based on inactivity rather than on apprehension, and that an occasional 'nuisance' air raid was the best boost to morale which a unit could experience.

All men who returned from a tour of duty were examined immediately on arrival in New Zealand and their fitness for further tropical service assessed.

After the first tour by 9068 personnel (1710 aircrew and 7358 ground staff), 80 per cent were fit for immediate return and only 5.6 per cent were regarded as permanently unfit to return to the theatre. The main cause of unfitness was nervous disease.

RNZAF IN THE PACIFIC

Causes of Medical Repatriation, May 1943-September 1945

Type of Disease	*Number of*	*Percentageof Total*

	Cases	*Repatriations*
Nervous and Mental Diseases	**241**	**24.9**
Injuries	**164**	**17.0**
Skin Diseases	**125**	**13.0**
Bones, Joints and Muscles	**78**	**8.1**
Digestive Disease	**73**	**7.6**
Infections	**53**	**5.5**
Respiratory Diseases	**49**	**5.1**
Ear Diseases	**36**	**3.7**
Nose Diseases	**29**	**3.0**
Urinary Diseases	**24**	**2.5**
Eye Diseases	**22**	**2.3**
Circulatory Diseases	**16**	**1.6**
Tumours and Cysts	**15**	**1.5**
General Debility	**14**	**1.4**
Infected Wounds and Tropical Ulcers	**13**	**1.5**
Generative Diseases	**11**	**1.1**
Metabolic Disorders	**2**	**0.2**
Endocrine Glands	**1**	**0.1**
Teeth and Gums	**1**	**0.1**
Totals	**967**	**100.0**

The strength of the force varied from 1600 in May 1943 to 7600 in May 1945. The average strength was approximately 4750.

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[1] **Wg Cdr G. H. Forrest, OBE; New Plymouth; born Palmerston North, 16 Oct 1915; medical practitioner; SMO Fiji, Dec 1942-Sep 1943; Solomons, Sep 1943-Apr 1944; ADMS (Air) Jul 1944-Sep 1945; DMS Sep-Dec 1945.**

HONOURS AND AWARDS

HONOURS AND AWARDS

OBE

Gp Capt F. R. Chisholm (NZ and Pacific)
Wg Cdr G. H. Forrest (Pacific)
Matron K. S. Williams (NZ and Pacific)

ARRC

Matron E. G. Sherrard (NZ and Pacific)
Sister A. M. Williams (Pacific and Far East)
Ch/Sister P. M. Aitcheson (NZ and Pacific)

MBE

Sqn Ldr I. V. Rockell (NZ and Pacific)
Flt Lt V. I. E. Whitehead (Pacific)
Fit Lt L. A. Scrivin (Pacific)

George Medal

Flt Lt B. M. de Lambert (Pacific)

BEM

WO M. T. B. Harris (Malaya and Java)
WO G. N. Dew (Malaya and NZ)
LAC G. S. Parsonson (Pacific)

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

PART V — THE ARMY MEDICAL ORGANISATION IN NEW ZEALAND — ARMY MEDICAL ORGANISATION IN NEW ZEALAND

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: ADMINISTRATIVE CONTROL

I: Administrative Control

PRIOR to the onset of war, the New Zealand Medical Corps was wholly Territorial and consisted of the following administrative officers, each of whom received a small honorarium:

Director of Medical Services

Deputy Assistant Director of Medical Services

Matron-in-Chief, NZANS (all at Army Headquarters)

An Assistant Director of Medical Services in each of the Military Districts (Northern, Central and Southern)

On 3 September 1939 a move was made to place the New Zealand Medical Corps on a war footing, and three weeks later the administrative staff at Army Headquarters was placed on a full-time basis and comprised the Director-General of Medical Services (Army and Air), Colonel F. T. Bowerbank, the Assistant Director of Medical Services (Lieutenant-Colonel I. S. Wilson), a Staff Officer and Quartermaster and a civilian staff of four. The Matron-in-Chief (Miss Willis [1]) continued to remain on a spare-time basis until 1940, when she was employed by the Army on a part-time basis and did not become a full-time officer until April 1941.

In each of the military districts the Assistant Director of Medical Services was employed at first on a half-time basis but later on a full-time basis.

With the mobilisation of the First Echelon whole-time Senior Medical Officers were appointed to Ngaruawahia, Trentham and Burnham camps, and later also three assistant medical officers. With

the completion of the mobilisation camp at Papakura, the Senior Medical Officer and staff from Ngaruawahia were transferred there. Subsequently, in 1940, full-time medical officers were stationed at Motutapu, Narrow Neck, Waiouru and Fort Dorset. At the last three places camp hospitals had been established. Part-time medical officers were appointed to Wellington Fortress Troops and Lyttelton Fortress Troops.

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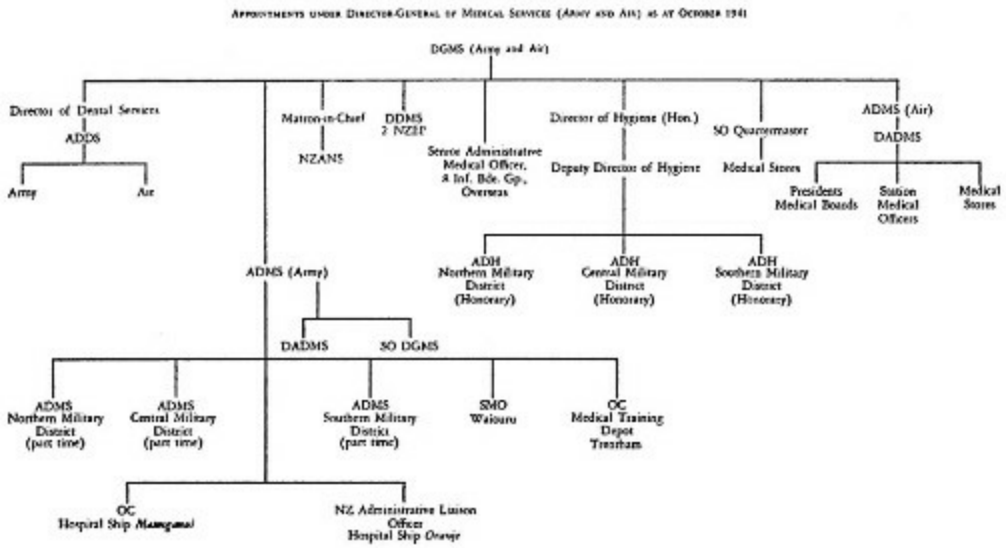
[1] Matron-in-Chief Miss I. G. Willis, OBE, ARRC, ED, m.i.d.; born Wellington, 29 Dec 1881; Asst Inspector of Hospitals, Wellington; 1 NZEF 1914–18: sister 1 Stationary Hosp, surgical team, Matron 1918; Matron-in-Chief, Army HQ, Sep 1939–Mar 1946.



APPOINTMENTS UNDER DIRECTOR-GENERAL OF MEDICAL SERVICES (ARMY AND AIR) AS AT OCTOBER 1941

Deputy Director of Hygiene

This appointment was made in November 1940. The officer's function was that of technical adviser to the DGMS on hygiene and sanitation. Earlier the Army had been dependent on the Health Department, whose officers, however, still continued to assist the Army in an advisory capacity.

ADMS (Air)

An ADMS (Air) was appointed in September 1939. He was a whole-time officer of the NZMC seconded to the RNZAF, and his relationship to the DGMS was similar to that of the ADMS (Army). (In April 1943 the Air Medical Service ceased to be a branch of the NZMC and was incorporated in the RNZAF under the control of the Director of Medical Services (Air), who was still responsible to the Director-General of Medical Services (Army and Air).) [1]

Officer-in-charge Medical Stores

At the outbreak of war, and for a year thereafter, all medical stores and equipment were part of the Ordnance Depot, Trentham, but stocks, requisitions and indents were controlled by the DGMS. In 1940, when the medical service took over all medical stores and equipment from Ordnance and established a medical store in Victoria Street, Wellington, an officer in charge of medical stores was appointed.

Officer Commanding Medical Training Depot, Trentham

An NZMC officer was appointed in charge of the NZMC Training Depot when it was established as a separate unit at Trentham.

Consultants

A consulting pathologist, a consulting ophthalmologist and a consulting venereologist were appointed by the Army.

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[1] **See Part IV, RNZAF Medical Services.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

II: TRAINING OF THE NEW ZEALAND MEDICAL CORPS

II: Training of the New Zealand Medical Corps

At the outbreak of war there were only three members of the Medical Corps in the Regular Force and only one, WO I Kidman, [2] was a fully qualified instructor. Medical officers and NCOs for units to go overseas, especially the field ambulances, were largely selected from the members of the Territorial Force who had done some preliminary training for several years before the war, but the Territorial units were weak numerically. At 31 May 1938 their strength was:

	Officers	*Other Ranks*
1 Field Ambulance, Auckland	8	49
2 Field Ambulance, Wellington	13	29
3 Field Ambulance, Christchurch	10	38

There was also a medical unit at the Otago Medical School, and RMOs were attached to units in the Territorial Force.

The officers and NCOs went into mobilisation camps a few weeks before their respective units and received advance training from Sergeant-Major Kidman, and then with his help trained the main body of their unit when it arrived in camp. Medical training followed the lines of the RAMC training manual, but was greatly hampered in the early stages by lack of equipment. At Burnham 4, 5 and 6 Field Ambulances and 4 Field Hygiene Section were mobilised, while 1, 2 and 3 General Hospitals and 1 Convalescent Depot entered Trentham Camp. Some members of the hospital units were trained in nursing duties at the Camp Hospital and Wellington Public Hospital. As part of B Force for Fiji, 7 Field Ambulance was assembled at Trentham.

Towards the end of 1940 a medical reinforcement company came into being but was placed under the command of an infantry officer, who was responsible to the Staff Officer Training. The Medical Corps had

its own instructors, one officer and two sergeants, and from the outset there was constant friction between the Staff Officer Training and the Chief Instructor, Medical Corps, over training methods. It became evident, therefore, that some other organisation to fit in with the training requirements of the Medical Corps would have to be considered, and owing to the emphasis placed on the matter by ADMS, Army, Army Headquarters finally authorised the establishment of a Medical Corps Training Depot with a complete establishment of administrative staff and instructors. This unit came under the Camp Commandant for administrative purposes, but was under the direct control of ADMS, Army, for training.

The NZMC Training Depot thus became a self-contained unit and was instrumental in training the officers and other ranks of the NZMC of the successive reinforcements for 2 NZEF. Altogether sixteen reinforcement groups were mobilised and trained at Trentham; in addition, three other complete units were mobilised and trained, 2 Casualty Clearing Station and 24 Field Ambulance for service in the Pacific and the NZMC staff for the New Zealand Hospital Ship *Maunganui*.

Altogether 236 officers and 4016 other ranks were trained by NZMC instructors before embarking for overseas.

The outbreak of war with Japan necessitated the training of reinforcements for the Pacific, and field practices in jungle warfare were carried out in thick bush country near the Moonshine bridge at Upper Hutt. This training consisted of manhandling medical and ordnance equipment, setting up RAPs and collecting posts in dense bush, improvising means for carrying patients, providing shelter, and evacuating casualties through extremely difficult country.

The great activity in the home defence forces which followed the outbreak of the war with Japan also added considerably to the work of the instructional staff of the medical depot.

It became necessary to organise many courses of instruction to

cover all activities in connection with the work of the NZMC. Arrangements were made to run continuous courses for field ambulance and hospital officers, NCOs and orderlies and for regimental stretcher-bearers, as well as hygiene and sanitation courses for combatant units and members of the RNZAF, and also chiropody courses.

Up to the end of 1941 the syllabus was based on a ten-weeks' course, but then the course had to be condensed to meet demands for a shorter training period. Early in 1942 Lieutenant-Colonel Graves, [1] who had been CO 4 Field Ambulance in the Middle East, was appointed OC NZMC Training Depot and was able to introduce subjects to the syllabus based on active service experience overseas. Such subjects were first, the application of Air Raid Precaution principles to NZMC training in general, covering concealment from aerial observation, camouflage and dispersal, and second, the general principles of modern mobile warfare, with special attention to map-reading and compass navigation.

Reinforcements were given a broad training that would fit them for any medical unit and the course covered first aid, nursing, hygiene and sanitation, field ambulance work, general hospital duties and chemical warfare. It came to be recognised that a wide detailed knowledge of some first-aid matters as set out in the RAMC manual was not essential, and only limited instruction was necessary in subjects such as anatomy, physiology, poisons, etc. In first aid attention was concentrated on haemorrhage, shock, burns and fractures. Personnel had to be capable of responding rapidly when called upon to treat men seriously wounded by missiles of war. Wounds such as protruding compound fractures with widespread structural damage differ from the usual casualty in civil life, where often it may be doubtful if there is a fracture until an X-ray is taken. Stretcher exercises were limited in favour of practice in transporting wounded in difficult country, and in vehicles other than motor ambulances. All this was a matter, a vital and important one, of adapting training to Second World War techniques and demands, and not relying on out-dated experience or studies of the First World War.

Considerable difficulty was encountered in the training of medical

officers. Many of the junior officers were quite lacking in military knowledge, they were in camp only a short time, and part of that time was taken up in RAP duties with combatant training units. They did not usually realise until it was pointed out to them that there was a great difference between a doctor and a medical officer. They required thorough grounding in the duties and responsibilities of an RMO, who plays such an important role in morale and health control. On occasions medical officers were in camp only a matter of days before being sent overseas, and training could not be by any means complete.

In March 1942, owing to a shortage of medical officers, it was suggested that certain duties carried out by qualified medical officers in field ambulances could be performed without loss of efficiency by specially trained officers without professional qualifications. It was thought that the appointment of non-qualified medical officers to field ambulance companies would be an advantage as these officers could devote all their time to training and administration, whereas qualified medical officers were often detached from their own unit to carry out professional duties as relieving RMOs or at camp hospitals, and this had at times been the cause of loss of efficiency in field ambulances. As regards the handling of casualties, nonqualified medical officers could only be expected to carry out the work of well-trained first-aid men and of good nursing orderlies. They needed, however, to be good instructors and administrators. There were nine field ambulances mobilised in the Dominion at that time, and by the appointment of non-qualified officers twenty-five medical officers could be released for professional duties or a similar number could be retained in civil practice.

The suggestion was later adopted in New Zealand but not in 2 NZEF and the first course for selection of unqualified officers was held at NZMC Depot, Trentham, from 3 to 22 August 1942. These officers became known as stretcher-bearer officers.

The course of training was later extended to three weeks' training at the Army School of Instruction, Trentham, and twelve weeks' technical

training at the NZMC Depot.

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[2] Maj C. H. Kidman, MBE, MM and bar; Wellington; born Wellington, 28 Mar 1888; NZPS instructor; NCO 2 Fd Amb, 1 NZEF, 1914–19; instructor to NZMC in NZ, Sep 1939–Sep 1942; OC Medical Training Depot, Trentham, Sep 1942–Sep 1944; SO and QM, Army HQ, Sep 1944–Jan 1947.

[1] Col P. V. Graves, ED; Waverley; born Hawera, 1 Apr 1896; medical practitioner; medical orderly NZ Hospital Ship *Mabeno*, 1917–19; RMO 2 Div Cav Sep 1939–Sep 1940; CO 4 Fd Amb Sep 1940–Aug 1941; ADMS, Central Military District, Sep 1942–Aug 1944.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

III: CAMP MEDICAL ORGANISATION

III: Camp Medical Organisation

All mobilisation camps in New Zealand were provided with fully-equipped camp hospitals, whose function was to undertake the treatment of patients requiring hospitalisation for short periods only. More serious cases were transferred to the nearest civilian hospital.

ARMY MEDICAL ORGANISATION IN NEW ZEALAND

With the mobilisation of the First Echelon in September 1939, camp hospitals were established at Trentham, Burnham and Ngaruawahia, and the medical officers and staffs appointed. Shortly afterwards the military camp at Papakura was opened and similar medical facilities were provided. Medical officers and staffs were also provided for Narrow Neck, Motutapu, Fort Dorset and Lyttelton and Wellington Fortress Troops. Later, with the development of Waiouru Camp, a large camp hospital was established there, and likewise a camp hospital was built at Linton Camp.

A close check was at all times maintained on the hygiene and sanitation of camps, with particular reference to the preparation and

storage of food, drainage and sewage arrangements, the provision of adequate ablution and drying facilities, and the prevention of congestion in sleeping quarters.

At first each camp hospital at the three mobilisation camps had accommodation for thirty to fifty patients and a staff of five nursing sisters, two medical officers and twenty-five other ranks. Both the capacity of the hospitals and the size of the staffs were increased later.

At Waiouru Camp there were 100 equipped beds, while at Narrow Neck and Fort Dorset there were nineteen beds. The Waiouru and Narrow Neck hospitals had on their establishment members of the NZANS, but Fort Dorset was entirely staffed by male members of the NZMC.

A medical 'pool' was established at the Camp Hospital, Trentham, for the training of home service medical personnel to make them efficient in military nursing before being drafted to the various camp hospitals.

Permanent regimental aid posts were established in all mobilisation camps, fortress troops depots and with Territorial units. Medical orderlies with the rank of corporal were drafted to these RAPs for duty.

Contagious disease hospitals were set up in the three mobilisation camps and all Army and Air Force personnel suffering from venereal disease in each district were treated there.

At Trentham the rule that all patients likely to be indisposed more than forty-eight hours were to be admitted to a civil hospital was never wholly observed. An attempt was made in the early period of the war to carry out this instruction, but it was found that the numbers sent to hospital were far in excess of the anticipated numbers and accommodation was not sufficient, so that, until the Wellington Hospital Board opened the Racecourse Hospital, all those who were expected to be fit to return to duty within seven days were kept in the Camp Hospital.

When the war broke out the only hospital accommodation at

Trentham was a small ten-bed ward situated in the Army School area. What had previously been hospital quarters was at this time occupied by four families of Ordnance personnel. New homes had to be built for these people and only when this was done could the work of reconditioning the old hospital quarters be put in hand. When the big influenza epidemic broke out in the latter part of 1939 the admissions to hospital averaged approximately thirty daily. To cope with this situation two large buildings, together with huts in the camp area, had to be used, and a special field kitchen was established for the feeding of the patients.

While this epidemic was at its height Dr Thorne, the Medical Superintendent of the Wellington Hospital, paid a visit to the camp, realised the seriousness of the situation and arranged to open a hospital in the racecourse buildings adjoining the camp. All the necessary equipment was supplied by the army authorities and army medical personnel were lent until the Wellington Hospital Board could provide its own nursing staff.

After the first two or three weeks this hospital was entirely staffed and controlled by the Wellington Hospital Board, and as the numbers of those suffering from influenza diminished, all sick from the camp were admitted to the Racecourse Hospital. Eventually the Camp Hospital accommodation at Trentham was increased to 120 beds, with special provision for officers and for skin and venereal disease cases.

IV: HYGIENE AND SANITATION

IV: Hygiene and Sanitation

The medical interest in camp construction and arrangements from the points of view of the health of the troops and the avoidance of epidemics had to be emphatically stressed by the DGMS and others before it came to be generally recognised. There had been a tendency for the valuable and extensive experience of senior medical officers in military medicine and hygiene and the importance of its application to be underrated.

Considerable difficulty was experienced in the early part of the war in obtaining and maintaining satisfactory conditions in the camps which sprang up all over the Dominion. A camp would be established for a few hundred men for a few days with the minimum number of temporary sanitary facilities, and overnight would be required to accommodate double the number of men for an indefinite period. By requiring a high standard of cleanliness and by waging total war on the house-fly, those responsible for hygiene saw this anxious period pass without serious consequences. Conditions gradually improved and ultimately became reasonably satisfactory.

The rapid increase of activities involving the construction of numerous camps throughout the Dominion, all requiring constant supervision, and the time taken up with discussions and perusals of plans caused a breakdown of the part-time service given by the local medical officers of health. This led to the appointment in November 1940 of the Principal Sanitary Inspector, Health Department (Mr Cowdrey [1]), as full-time Deputy Director of Hygiene (Army and Air), with the rank of captain (later major), his duties being laid down in general terms by the DGMS. In each camp there was a health inspector with NCO rank working under the senior medical officer, but a large trained staff was also required.

Training of Sanitary Personnel

It was estimated that 150 to 200 men would be required for field hygiene sections, sanitary inspectors in army camps and hygiene administration orderlies in Air Force stations in New Zealand and overseas. Trained sanitary inspectors are nearly all employed by the Department of Health and local authorities and few could be released for the armed forces. Arrangements were therefore made in December 1940 for the establishment of a School of Hygiene at Trentham Camp. The school opened on 8 April 1941 with fifty-two pupils, who were given eight weeks' intensive training in theoretical and practical sanitation by health inspectors.

The practical work consisted in part in the laying out and construction of a demonstration area, which proved to be of great value in the training of subsequent personnel, including combatants. The exhibits were constantly kept in good order by patients of the adjoining venereal disease hospital. After the school was properly organised and the demonstration area completed, courses were reduced to five working days and were under the control of the OC Medical Depot. Numerous courses were conducted, including a special one for combatant officers and several for RNZAF medical orderlies.

Field Hygiene Sections in New Zealand

Early in 1941 it was decided to form four Territorial field hygiene sections, one for each of the three military districts and one for Army Headquarters. They were modified units, each consisting of

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[1] **Maj J. H. Cowdrey, MBE; Wellington; born England, 27 Mar 1882; health inspector; served in South African War and in 1914–18 War; NZPS instructor, 1915–17; Deputy Director of Hygiene, Army HQ, 1941–47.**

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1 officer, 4 NCOs and 12 other ranks, approximately two-thirds of the establishment of a field hygiene section.

As no qualified sanitary inspectors were available the personnel included plumbers, carpenters, bricklayers and others whose civil occupation has some connection with sanitation.

Suitable Grade II or Grade III men were selected and posted by District Headquarters and all were trained during April and May 1941 for eight weeks at Trentham as one class under the supervision of Majors Kidman and Cowdrey. Lectures and demonstrations were given by officers of the Department of Health and the Department of Scientific and Industrial Research. On the completion of the course the men were returned to their respective districts and were posted in small parties to the various camps for sanitary duties. No officers were appointed until October 1941, and the units were deficient in men and equipment till that time.

With the formation of divisions in the Dominion in 1942 the four Territorial field hygiene sections were mobilised as divisional troops, No. 1 functioning in North Auckland, No. 2 in the Manawatu, No. 5 in the Wairarapa and No. 3 in the South Island.

It soon became apparent that if the maximum services were to be obtained from these tradesmen and specialists they would have to have their duties extended beyond their advisory nature, and arrangements were accordingly made for the issue of tools and materials so that they could become small constructional units.

As all the staff of these field hygiene sections were either Grade II or Grade III men, a further field hygiene section had to be formed to accompany 3 Division to the Pacific.

The work of the hygiene sections can be better understood if illustrated by the work of one of them. As a Territorial unit 2 Field Hygiene Section underwent a course of training at Trentham in April

1941. The unit was mobilised in December 1941 and entered the camp at Awapuni racecourse, Palmerston North, where it remained until disbanded on 5 August 1943. The camp was more fortunate than some in that it had four large and numerous smaller buildings in which to accommodate most of the troops. In it there were three cookhouses and seventy water closets and urinals in working order. The hygiene section inspected the sanitation arrangements of the camp – water supply, cookhouses, cooking utensils, storage of perishable foods (in most cases badly stored at first), messrooms, canteens, quarters, disposal of waste matter. Inspection was extended to surrounding camps – Wanganui and Dannevirke, and to vital points around Wellington – and later personnel were seconded for duty at these camps. Some camp units were tardy about improving sanitation arrangements, despite advice, and some original members of the section's staff proved unsatisfactory and were exchanged for tradesmen from the field ambulance in camp. Models of hygiene appliances were set up and a series of lectures given to officers and NCOs of 4 Division. Some of the Grade I personnel were transferred to the Air Force and to 3 Division, and a few of the unit were sent to Norfolk Island.

During 1943 the number of hygiene and sanitation orderlies required by the RNZAF for stations in New Zealand and overseas had exceeded the number required by the Army. It was therefore decided to establish a school of hygiene at the RNZAF Station, Swanson. On the completion of a course at Trentham by ten Air Force personnel in January 1943, they and their instructor proceeded to Swanson station and set up a demonstration area similar to the one at Trentham. From then on all training of airmen in hygiene and sanitation duties was carried out at Swanson. The existence of this school made it possible for every officer, NCO and airman of the RNZAF to be given some instruction in hygiene before proceeding overseas. The principal instructor was changed from time to time, but he was always a man who had been overseas and was therefore conversant with the conditions likely to be met.

Education

As most medical officers had had little if any opportunity of studying the subject of military hygiene prior to enlistment, an educational policy was decided upon. Copies of lectures and other published papers on military hygiene were issued from time to time to all concerned. During 1941 a complete series of articles on fifteen separate subjects was issued to all medical officers. Later the papers were issued in one volume to all incoming medical officers. Copies of the *Army Manual of Hygiene and Sanitation, 1934* and the *Handbook of Military Hygiene, 1941 and 1943*, were distributed to districts, while a copy of *Field Service Hygiene Notes, India, 1940* was supplied to each ADMS. The last publication covered every aspect of military hygiene and was most comprehensive. A special article on 'Purification of Water in the Field in New Zealand' was prepared and widely distributed.

As occasion warranted, explicit instructions were issued by the DGMS concerning anti-fly measures, feeding of troops, avoidance of overcrowding and over-fatigue, washing and drying of clothing, and other subjects affecting the health of troops in general.

Water and Milk Supplies

The bacteriological examination and chemical analysis of samples of water and milk from Army camps and Air Force stations was undertaken by the Department of Health. Medical Officers of Health gave valuable information on the interpretation of the results of the examinations and made recommendations for the improvement of unsatisfactory supplies. This entailed a very considerable amount of work, more especially during the first two years of the war.

The supplies of milk and cream to camps and stations were arranged for by the Internal Marketing Department in collaboration with the Department of Health, the DGMS and the Director of Supplies and Transport. It was an accepted policy to purchase pasteurised milk if available and reasonably priced.

Assistance was given to the Department of Scientific and Industrial

Research and to the Quartermaster-General's Branch in evolving a portable pumping, water filtration and chlorination plant capable of delivering up to 700 gallons of treated water an hour, and also a small filter which would deliver one pint of water a minute.

Assistance was also given in overhauling and testing some German filters and some Italian filters received from the Middle East, which after repair were sent to 3 Division and came in very useful there. Other filters were obtained from the Royal Army Medical Corps at Aldershot.

Insect Control in Camps and Stations

Apart from cockroaches and house-flies, camps and stations were remarkably free from insect pests. Right from the commencement an energetic campaign was maintained against the house-fly.

The control or elimination of cockroaches presented a problem, more especially on Air Force stations, until DDT became available late in the war. It was demonstrated that kitchens and messes could be freed from cockroaches in a few weeks by intelligent use of a 5 per cent solution of DDT in kerosene and carbon tetrachloride.

In one Air Force station kitchen block alone some 79,000 cockroaches were accounted for in twenty-seven days, the number varying from 11,500 in one day to 1500, and then gradually diminishing until practically all were eliminated in two months.

Oiling of Floors

As it was considered probable that the dry sweeping of the floors of huts had some bearing on the incidence of respiratory disease, an investigation was carried out in the main camps in the three military districts with the object of finding a means of treating floors to prevent dust arising during daily dry sweeping, and at the same time doing away with the practice of so-called washing of floors by sluicing water over them, after which the floors took hours to dry, especially in the winter.

Experiments were carried out under the supervision of the ADsMS in June and July 1941, and resulted in the QMG issuing a special instruction on 15 September 1941 detailing a method of oiling floors.

Washing of Mess Utensils

It was considered that the methods adopted in camps for the washing of eating utensils were unsatisfactory and a likely means of spreading respiratory infection. The common practice was for each man to wash his own eating utensils in the common water provided for the purpose, after which he took them to his sleeping quarters, where they were placed with his other kit until the next meal. Apart from the possibility of further contamination of the articles after washing, the actual method of washing called for some investigation. The investigation was enlightening and resulted in the issue of new regulations in regard to dish-washing.

The investigation was carried out on 17 March 1941 at the Buckle Street barracks, Wellington, to ascertain the approximate bacterial contamination of eating utensils as washed under existing conditions. According to the usual arrangements, when the men's meal was brought to the messroom a container of hot, soapy water was also carried across and placed in the courtyard outside the messroom. On the day in question the container had in it about three gallons of soapy water at a temperature of 164°F., which would be described by most people as 'scalding'. The meal in question was a light lunch consisting of dry rations only, and did not therefore involve the same washing problem as a hot dinner would have done.

When the men finished their meal and started to wash their utensils, the temperature of the water was 160°F. It was noted that no arrangement was made for the adequate scraping of plates, and each man rinsed his plate, cup, knife, fork and spoon in the water as he was best able to do without immersing his hand. No mop was provided for washing.

The knife, fork and spoon of one man, after being washed by him, was placed in a sterile glass jar with screw top. The knife, fork and spoon of a second man, after being washed by him, was immersed for three minutes in a solution of 'Neomoscan' (an antiseptic containing chlorine) at a temperature of 120°F., and then transferred to a second sterile jar.

A few minutes later, when the washing water was dirtier and its temperature had fallen to 137°F., further samples of cutlery were similarly selected and one set was immersed for two minutes in the 'Neomoscan' at 110°F. Each set was placed in a sterile jar and all jars were referred to Major Mercer, [1] Consultant Pathologist, for bacteriological examination.

When 10 c.c. of sterile water was placed in each jar and shaken up, the water became turbid in all cases and was full of food debris, showing that washing had been inefficiently done. Had the meal been a hot dinner the evidence of uncleanliness would have been still more evident.

Details of Experiment

0.1 c.c., 0.5 c.c. and 1 c.c. of the water from each jar was plated out and incubated at 37°c. for 48 hours. The results were as follows:

(1) Cutlery washed by owner in soapy water at 160°F. 0.1 c.c. of washings produced 200 colonies. 0.5 c.c. of washings produced 1200 colonies. 1.0 c.c. of washings produced uncountable numbers.

(2) Cutlery washed as above and immersed for three minutes in 'Neomoscan' at 120°F. O.1 c.c. of washings produced 1 colony. 0.5 c.c. of washings produced 10 colonies. 1.0 c.c. of washings produced 26 colonies.

(3) Cutlery washed in soapy water at 137°F. 0.1 c.c. of washings produced 360 colonies. 0.5 c.c. of washings produced uncountable colonies. 1.0 c.c. of washings produced uncountable colonies.

(4) Cutlery washed as above and immersed for two minutes in 'Neomoscan' at 110°F. 0.1 c.c. of washings produced 1 colony. 0.5 c.c. of washings produced 3 colonies. 1.0 c.c. of washings produced 5 colonies.

A few colonies of streptococci and staphylococci were identified. The organisms were nearly all chromogenic.

The following conclusions were reached:

(1) The washing as carried out does not effectively cleanse the articles even after a light meal of dry rations.
(2) Rinsing in soapy water too hot for the hands does not kill bacteria.
(3) As the washing proceeds the water gets progressively dirtier and the utensils washed are progressively more heavily contaminated with bacteria. These bacteria can only come from the utensils previously washed and there is thus a direct transference of living bacteria from the eating utensils of one man to those of another.
(4) Immersion in the disinfectant solution rendered the articles virtually sterile even though washing was not completely adequate. Still better results may be expected when the washing is carried out in an efficient manner.

There can be little doubt that streptococci and other bacteria could be and are being transferred from the mouths and throats of certain men via

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[1] Lt-Col J. O. Mercer; Wellington; born Halifax, England, 1905; pathologist; Consultant Pathologist, NZ Army Medical Corps.

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their eating utensils and the common washing water to the eating utensils of other men and thus exposing them to infection. It would be possible also for a carrier of one of the intestinal infections (enteritis, dysentery, etc.,) to contaminate his eating utensils which are kept with his clothing and personal effects, and so lead to the further pollution of the washing water, and the dangerous contamination of the utensils of the men.

A copy of the above report, together with recommendations, was forwarded to the QMG, who, in September 1942, sent out a memorandum to all districts pointing out that the difficult conditions arising from the unprecedented army construction programme precluded the installation

of dish-washing facilities to the standard it was desired to achieve, and that it was now proposed to bring the wash-up troughs in all existing and new camps into line with this standard. The system of cleansing was to be as follows:

(1) All plates and dishes will be scraped into a swill can with a rubber scraper in order to avoid unnecessary fouling of the wash-up water.

(2) Troughs to be sub-divided into three compartments with a separate waste and plug, the compartments to be approximately 2 feet long … preferably of metal and of rounded section.

(*a*) The first compartment is to take hot water, and sufficient soap and long handled mops will be required, the latter to permit of thorough cleansing without the necessity of immersing the hands.

(*b*) The second compartment is for hot rinsing water.

(*c*) The third compartment is to contain a solution of 'Neomoscan' or other suitable chlorine disinfectant.

Hygiene on Transports

The question of transports was one in which the DGMS was especially interested and he made it a practice to inspect personally every transport carrying New Zealand troops. Transports presented particular problems in regard to hygiene and sanitation and the provision of adequate hospital bed accommodation to cater for possible sickness among the troops, especially as the ships carried more troops than the normal complement of passengers.

Prior to the sailing of the first troopships a list of instructions was drawn up for Senior Medical Officers on transports, who were in medical charge of all troops on board. The detailed instructions were incorporated in the manual of 'Standing Orders for HMNZ Transports' printed on 1 January 1940 and revised and amended in April 1941.

V: SICKNESS IN NEW ZEALAND CAMPS

V: Sickness in New Zealand Camps

From 1942 to 1946 the hospital admission rate per thousand troops per month (averaged over a year) varied from 26 to 34 for camp hospitals and from 10 to 14 for public hospitals, some of the latter being transfers from the camp hospitals. During the war the public hospitals had to admit cases of sickness from the camps that would normally have been nursed at home, but were able to do so partly through the use of temporary hospitals such as the Ellerslie and Trentham racecourse hospitals.

In August 1941 the weekly issue of a bulletin of cases of notifiable diseases occurring in each army camp and RNZAF station was commenced. A copy was forwarded each week to ADsMS and the DMS (Air), together with a copy of the weekly bulletin of notifiable diseases issued by the Department of Health.

ADsMS were thereby kept informed as to cases occurring amongst the troops as well as amongst the civilian population in their districts.

From January 1942, when intensive mobilisation began for home defence, inoculations of all troops against typhoid and paratyphoid fevers was carried out – a measure previously restricted to members of the Expeditionary Force.

Respiratory Diseases

An epidemic of influenza commenced in September 1939 among fortress troops, appeared in the three mobilisation camps early in October (Ngaruawahia, Trentham and Burnham), spread rapidly and gradually subsided during the middle two weeks of November. The percentage of unit strength admitted to camp hospitals or evacuated to

public hospitals varied in the different units of the First Echelon from 25 per cent to 54 per cent. There were two main waves, the first reaching its height about the middle of October; then it temporarily subsided and rose again with increased virulence to double the height a week later. The incidence rates in the three camps closely resembled one another. This was especially the case in the marked rise after weekend leave.

Very energetic measures were taken to combat the epidemic and a memorandum on the health of troops was compiled by the DGMS and circulated to all unit commanders by the Adjutant-General. The memorandum set out seven essential preventive measures, viz:

(1) Adequate air space and ventilation of sleeping quarters.
(2) All damp or wet clothing to be changed at once, or as soon as practicable, and not be retained in sleeping quarters.
(3) Adequate change of clothing including socks, etc., and adequate drying facilities.
(4) Avoidance of undue fatigue, i.e., graduated training.
(5) Adequate facilities for hot and cold showers.
(6) Diet not only wholesome but varied and well cooked.
(7) Sanitary arrangements to be above suspicion.

Other epidemics occurred from time to time, usually amongst newly mobilised and unsalted personnel. Practically all cases were ordinary influenza with few, if any, serious complications.

The Third Echelon experienced an epidemic of influenza when it entered camp in May 1940 and the following figures were recorded:

	10–16 May	17–23 May	24–30 May	31 May–3 June
Number reporting sick				
Papakura	129	1005	1462	609
Trentham	210	961	1471	943
Burnham	52	590	901	609
Admitted to Camp Hosp				
Papakura	29	95	132	79

Trentham	**24**	**52**	**116**	**97**
Burnham	**13**	**32**	**81**	**75**
Transferred to Civil Hosp				
Papakura	**8**	**21**	**49**	**25**
Trentham	**1**	**4**	**26**	**27**
Burnham	**1**		**23**	**39**

From January to September 1940 there were 4685 cases of influenza from the main camps. In the winter of 1941 influenza was very prevalent, and in the winter of 1942 there were nearly 9000 cases recorded among troops, but the figures dropped in succeeding winters to 736 in 1943, 369 in 1944 and 721 in 1945.

Measles and mumps were the only other epidemic diseases of major account. The following figures were recorded:

	Measles	***Mumps***
Jan-Sep 1940	**390**	**?**
1 Dec 40–31 Jan 41	**677**	**69**
1 Jun 41–31 Mar 42	**2630**	**1718**
1 Apr 42–31 Mar 43	**1916**	**133**

Diarrhoea and Gastric Upsets

From time to time, more especially in the early days of the war, there were outbreaks of diarrhoea, gastro-enteritis, food poisoning and dysentery in camps in the Dominion. The camp most affected was Waiouru, where diarrhoea broke out among workmen engaged on camp construction in September 1940. In February and March 1941 several hundred troops were affected, and lesser outbreaks continued until July 1942. In May 1941 it was established that some of the cases were Sonne dysentery. Conditions in the camp at first were poor – cookhouses and messes were dirty, there was insufficient hot water and facilities for washing cooking utensils, there was no permanent kitchen staff, and the camp was swarming with flies. As the standard of sanitation improved the outbreaks became less frequent and less extensive.

Cerebro-spinal Fever

In 1942 there were 1036 cases of cerebro-spinal fever in the Dominion, 85 of the cases being from army camps. Effective preventive measures kept the incidence low in the Army.

Venereal Disease

Comprehensive measures were taken to obviate as far as possible the wastage of manpower due to venereal disease. Preventive measures consisted in the main in the provision of ablution rooms, as by Government decree contraceptives were not to be made available. In October 1939 a preventive ablution room with a trained orderly in charge was established in all camps. Later, facilities were made available at a number of armed services clubs, at public hospitals, and at rooms centrally situated in the cities of Wellington and Palmerston North. The Wellington rooms were made available to Navy, Army, Air Force and the Mercantile Marine personnel.

An educational campaign was also put into effect from time to time and lectures on venereal disease were prepared and copies sent out from the office of the DGMS to all medical officers for their use in lecturing to the troops.

The policy was laid down that any soldier who had contracted either gonorrhoea or syphilis after entering camp would be retained in the Army until cured. This was afterwards amended so that the cases would be retained until rendered non-infectious. In order to carry out this policy it was necessary to build and equip CD hospitals. Three were constructed, one each at Papakura, Trentham and Burnham Military Camps. All cases remained as in-patients until non-infectious and it was stipulated that no soldier or airman would be boarded out solely on account of chronic venereal disease without the prior consent of the DGMS.

The specialists attached to the main hospitals in the four main

centres were made available to the Army for advice on all VD matters, and on completion of the army contagious disease hospitals, an advisory VD specialist was appointed to each. Subsequent to June 1940, all cases occurring in the RNZAF in New Zealand were admitted to army CD hospitals. The staff of each CD hospital was one NCO and five other ranks.

In order to eliminate as many sources of infection as possible, information as to the source of infection was obtained from the patient and sent direct under confidential cover to the Medical Officer of Health for the district. To ensure that cases of syphilis received the necessary after-treatment and tests following discharge from CD hospital, lists of all known cases of syphilis in each military district were prepared in Medical Headquarters and sent to the respective ADsMS. In addition, the names of all cases returning from overseas and which required further treatment or surveillance were forwarded by the DMS, 2 NZEF, to the DGMS. These were sent out to the respective ADsMS, who were required to furnish a monthly report indicating the whereabouts of all the cases in their districts. This resulted in all cases being kept track of until struck off surveillance or returned to civil life. No soldier was returned to civil life until rendered non-infectious, and if further surveillance was necessary the appropriate Medical Officer of Health was given full information.

The system of records also ensured compliance with the request of the DMS, 2 NZEF, that personnel who were undergoing treatment for syphilis, or who had recently completed treatment, should not be despatched overseas, and that a period of six months should be allowed to elapse following completion of treatment before the individual was considered fit for despatch overseas.

Venereal Disease in Army in New Zealand

1940	1941	1942
No. Cases Per 1000 per Month	*No. Cases Per 1000 per Month*	*No. Cases Per 1000 per Month*

Jan	22	1.00	64	4.46	68	1.79
Feb	45	2.05	50	1.99	65	1.38
Mar	26	1.15	53	2.35	104	2.08
Apr	51	2.22	46	2.88	71	1.49
May	53	2.37	43	2.60	94	1.53
Jun	18	0.72	47	2.79	59	1.02
Jul	34	1.86	56	3.16	62	1.20
Aug	55	2.97	63	3.45	60	1.10
Sep	55	3.98	31	2.48	42	0.63
Oct	24	1.11	51	1.34	54	0.73
Nov	25	1.34	37	1.47	78	1.20
Dec	46	2.20	52	1.89	34	0.59
	454	22.97	593	30.86	791	14.74

Air Force figures indicate that their comparative rate was about one-half to two-thirds that of the Army. From July 1941 to June 1942 it was 13.42 per 1000 per annum.

The rates, though lower than for the First World War, do not show the same comparative improvement as was manifest in the overseas force. In 2 NZEF the rate per thousand per annum was 18.39 as compared with 14.74 in New Zealand in 1942.

The Army rate in New Zealand in 1917 was 34 per thousand per annum, and the rate in 1 NZEF in 1917 was 60–70 per thousand per annum.

Of the New Zealand cases syphilis figures were about one-tenth of those for gonorrhoea in 1942, a proportion which roughly accorded with the proportion in 2 NZEF, although in 1942 in New Zealand the civil figures (including merchant seamen) were gonorrhoea 1295 and syphilis 327 cases.

The Navy rate in 1942 was 34.6 per thousand per annum compared with 82.4 for 1941.

1942 was the year of peak mobilisation in New Zealand and the VD

figures were lowest when mobilisation was highest, probably because of the larger percentage of older married men in the Army.

The reasons for the decrease in 1942 were set out in January 1943 as:

1. Increased PA facilities and a greater knowledge of the dangers of venereal disease gained from lectures.
2. Ballottees called up during the year, and especially in the last six months, were older men and the majority were married.
3. Legislation giving the Police and Department of Health wider powers for the control and compulsory treatment of prostitutes and all males and females suffering from venereal disease.
4. The presence of United States troops in considerable numbers may also have influenced the incidence.

Deaths among Troops from Camps in New Zealand
From Annual Reports of DGMS (Army and Air)

	To 31 May 1940	1 Jun 1940-31 May 1941	1 Jun 1941-31 Mar 1942	1 Apr 1942-31 Mar 1943	1 Apr 1943-31 Mar 1944	1 Apr 1944-31 Mar 1945	1 Jun 1945-31 May 1946	Total
Accidents	12	8	23	65	26	3	11	148
Respiratory Disease		3	4	8	2			17
Heart Disease		8	9	13	15			45
Cancer		3	4		10			17
Meningitis		1	4	11	2	1		19
Tuberculosis			4	12	5	3	6	30
Suicide			2		4			6
Sickness						37	19	56
Other	6	3	14	56	19	3	2	103
Totals	18	26	64	165	83	47	38	441

(Fuller particulars are not available)

VI: MEDICAL SUPPLIES AND EQUIPMENT

VI: Medical Supplies and Equipment

At the outbreak of war some of the medical equipment belonging to the 1914–18 period was still in stock and a small proportion in use. The greater part of it was not only obsolete but practically unusable. As a result of recommendations made early in 1939 by the DGMS, some new medical equipment was beginning to arrive from England in September 1939. During 1939 a number of big camps were held and the stocks of medical supplies were almost exhausted. As the medical units proceeding overseas to the Middle East were equipped on arrival at their destinations, a major difficulty was avoided. The army in New Zealand would have been embarrassed by lack of medical supplies if it had been called upon to equip any medical units on the outbreak of hostilities in Europe.

Medical equipment and stores for troop transports were drawn from the Army Medical Store or else secured from commercial firms in New Zealand and placed on board each transport. A standard list of drugs was carefully prepared but it was not always possible, especially at the outset, to supply everything which might be required. Senior medical officers were always given verbal and written instructions regarding these supplies and were expected to improvise wherever necessary. Difficulties were sometimes occasioned where senior medical officers expected an unlimited supply of drugs as in civilian practice.

A similar position applied in the case of surgical instruments. Surgical and medical panniers were placed on board each transport, but it was impossible to equip a ship on the same scale as a general hospital. As it was, in view of the limited amount of medical equipment available, the DGMS had to make arrangements for medical equipment to be off-loaded from the transports when the troops had reached their destination. This equipment was then packed and returned to New

Zealand for the equipping of the succession of transports.

During the war medical stores were obtained from local drug houses, the United Kingdom, Canada, and under Lease-Lend from the United States of America. The Joint Council of the Order of St. John and the New Zealand Red Cross Society War Purposes Committee provided large quantities of surgical dressings and an impressive quantity of textile garments and other articles made with material supplied, as a general rule, from ordnance stocks.

The US Navy medical authorities (in New Zealand from 1942) were most co-operative in supply matters, and constant liaison was maintained with exceptionally cordial relations.

The DGMS, during a visit to Australia, was successful in procuring field tranfusion equipment and established contacts which facilitated the obtaining of further medical supplies later.

Navy and Air Force medical supplies were provided from Army medical stocks, a twelve months' reserve being held in the respective service stores. Frequent discussions with Navy and Air Force administrative officers enabled requirements to be regulated and technical difficulties mastered.

The need for economy in medical supplies was frequently emphasised by the DGMS, not only by means of memoranda and instructions through the QMG's routine orders, but especially at personal inspections and conferences. Certain supplies were placed on special lists, with reasons required for all indents. Evidence indicated that these measures, coupled with the routine inspections, frequent check and careful custody, went a considerable way to conserve medical supplies without impairing efficiency.

Frequent inspections during the routine visits of the DGMS and his staff ensured technical efficiency, and the auditing of accounts by inspecting quartermasters and audit inspectors regulated routine

transactions and ensured reasonable care in the custody of the valuable and often irreplaceable medical stores.

Scales of medical equipment and supplies for camps and troopships were prepared under the direction of the DGMS in 1939 and were amended as occasion demanded, and additional tables were authorised for all units mobilised.

The year 1942 was a difficult one for the supply of medical stores and equipment as the expanded forces in New Zealand had to be catered for and all the medical units of 3 NZ Division equipped.

Field medical equipment was required also to meet extraordinary demands due to general mobilisation in 1942, including that of the Home Guard. Old equipment was brought up to standard, new equipment was designed, tabulated, procured from wide and often very unusual sources, and assembled ready for the new army, of which certain units, such as anti-malaria and blood transfusion units, were new to this Dominion.

Fortunately supplies began to come in from the United States under Lease-Lend in 1942. The first consignment containing a small quantity of drugs was received at the end of June, and in November there arrived 600 cases of supplies, 1329 cases of drugs and 250 packages of dressings from the United States, and 1030 cases of medical supplies from India. Small quantities of supplies and equipment came to hand from Australia, and some supplies were obtained from the estates of deceased practitioners and from warehouses. Over £100,000 worth of supplies and equipment was received from the United States and Canada in the year ended 31 March 1943, and an estimated £30,000 worth from India, nearly £10,000 worth from Australia and some £1500 worth from the United Kingdom, while over £100,000 worth was obtained within New Zealand.

Medical equipment was assembled to provide regimental panniers, medical companions, surgical haversacks, shell dressing haversacks,

first-aid boxes and haversacks, malaria panniers, fracture panniers, transfusion packs, field ambulance boxes, medical inspection chests, and company and section medical chests.

Army Medical Stores

At the outbreak of war, and for a year thereafter, the Medical Store was part of the Ordnance Depot, Trentham Military Camp, but stocks, requisitions and indents were controlled by the Director-General of Medical Services. In 1940 the Army Medical Store was established in Victoria Street, Wellington, and was brought under the full control of the DGMS. Dispensary, packing facilities, assembly room, bins and shelving were suitably arranged. Stock mixtures were manufactured for all requirements.

Ordnance items which were used only in medical units were issued from Army Medical Stores during 1942 and 1943 in order to assist the overloaded ordnance depots.

Expansion of the forces, the policy of dispersal of stocks, and requirements of the Navy and Air Force, which were included with those of the Army, eventually called for considerable further reorganisation. A main medical store was therefore established at the Horticultural Hall, Lower Hutt, with a bulk store at Wellington. A reserve store was situated at Palmerston North, and Advance Depots of Medical Supplies were established at Auckland, Christchurch and with 3 NZ Division. Reserve stocks were accommodated at certain military camp hospitals, notably at the strategic centre, Waiouru. Temporary accommodation for assembly or disposal of equipment was required, chiefly at Wellington and Mangere. Railway ambulance carriage depots were established at Wellington and Auckland under district control. Dispersal to Whangarei and other towns was arranged, but the military necessity did not arise and the proposal was cancelled.

The staff increased from 1 NCO, NZMC, in 1939, to some 6 officers and 51 other ranks when the full expansion and dispersal was operating.

Rapid expansion at the critical period imposed a strain upon an expanding but often untrained staff, while a wide diversification of units and technical requirements extended the demands on the medical stores organisation.

A new establishment for the Medical Stores and Equipment Section was approved in March 1943 providing for 6 officers, 45 NCOs and 16 privates to staff the various stores.

When Army Medical Stores were organised on a satisfactory basis, the DGMS authorised routine medical equipment conferences. These were of the greatest value, being held twice monthly when exigencies permitted. Specialists were co-opted to give advice on technical matters, such as blood transfusion, X-ray, and optical requirements.

Medical quartermasters from field units, medical stores and district depots staffs met half-yearly to discuss problems peculiar to those units.

Conferences were responsible for much of the co-ordination and implementing of policy. The DGMS gave details regarding organisation, expansion and policy at conferences held in his office. The QMG called conferences of stores and quartermaster officers to discuss accounting for stores and transport vehicles. Conferences were also held with the Controller of Medical Supplies (Health Department) regarding lease-lend stocks; with the Standards Institute regarding army equipment; with the War Purposes Committee of the Joint Council of the Order of St. John and the Red Cross Society regarding scales of equipment and relative matters; and with the Patriotic Board regarding gift supplies.

In 1943 new demands made on the Medical Stores and Equipment Section were the equipping of Linton Camp Hospital, the PW Camp Hospital and the Plastic Surgical Unit, and the provision of chemical warfare and X-ray equipment and anti-malaria panniers. In 1945 the depots at Burnham and Auckland were closed and the staff reduced to twenty-four. At the end of the war surplus stores were disposed of to institutions and 100 tons to the Netherlands East Indies Government.

Motor Ambulance Vehicles

At the outbreak of the war no military motor ambulance cars were available. Conversion of private motor vans into motor ambulances was considered impracticable as the majority of commercial motor vehicles were of the light van type, with little height and length and narrow rear doors. In some instances hospital boards' ambulances were used, and where they were not available Army Service Corps trucks were adapted by placing mattresses or stretchers on the floor. In October 1939 the Salvation Army donated two motor ambulances, and about the same time five Morris chassis were obtained and bodies were built on them at the Post and Telegraph workshops, Wellington. Other donations of ambulances were made by various organisations and individuals, but further ambulances were needed. One of the difficulties was a shortage of suitable chassis and all types had to be used. This did not lend itself to any standardisation in design or carrying capacity.

It was reported that the Australian Army had adopted the Indian Army type of motor ambulance with Chevrolet chassis and canvas sides, back and top, and it was decided to follow on similar lines in the construction of bodies for New Zealand Army ambulances in order to obtain quick production and economy in cost. The use of canvas was far from satisfactory, quite apart from the inferior materials and poor workmanship which went into the construction. The provision of sides and backs of wood in place of canvas was a big improvement. Some standardisation in design was obtained when bodies were built on twelve Bedford chassis in November 1940, but unfortunately the springing of the Bedford chassis was totally unsuitable for motor ambulances.

About this time approximately a hundred ambulance vehicles were required to complete authorised establishments, and as suitable chassis were not available the feasibility of carrying stretchers on special movable brackets (Flint stretcher equipment, as described in *RAMC Journal*, November 1936) fitted to army service trucks and wagons was investigated; but, as during the investigation some 100 Ford chassis

came to hand, ministerial approval for only seven sets of brackets was sought and obtained. The 100 Ford chassis were fitted with bodies by private contractors during 1941, and with subsequent minor alterations were considered to be reasonably satisfactory but not in comparison with civilian ambulances.

VII: ORGANISATION FOR THE CONTROL OF SICK

VII: Organisation for the Control of Sick

The Government decided on 7 February 1938 that the existing local hospital facilities in New Zealand should be utilised and adapted, if necessary, for the sick and wounded of the fighting forces in war. All treatment was to be arranged by the Health Department.

On this basis the Army Medical Service arranged after the start of the war for only minimum and simple camp hospital accommodation for patients likely to be retained less than forty-eight hours. Other patients were conveyed to the door of the nearest public hospital, where they became the responsibility of the Health Department until fit for discharge. In actual fact it became usual to retain some classes of patients in camp hospitals for longer than forty-eight hours, this by an arrangement with the National Medical Committee and the Department of Health to help in relieving congestion in the civilian hospitals. Medical boarding and treatment of sick and wounded were controlled by the Health Department and administrators, transport and minor treatment were army responsibilities.

Convalescent and medical board depots were to be a responsibility of the Health Department, but this decision was modified in 1940 when War Cabinet ruled that convalescent depots for short-term convalescent soldiers should be an army responsibility. Delay in the construction of convalescent depots was one of the reasons for the limited use that was made of them.

Had convalescent depots been available, the administration and control of sick and wounded servicemen might have been improved. This was the point at which all patients could have been brought under the control of the Army Medical Service again after their discharge from hospital. As it was, from the time they were admitted to hospitals to

their ultimate return to their units, it was not usual for sick from New Zealand camps to come under the Army Medical Service. From the medical point of view the ideal disposal of all army personnel sent to hospitals, if not fit at their discharge to return to their units, would have been to an army convalescent depot. This would have enabled the CO of the convalescent depot to have had all these personnel classified and dealt with accordingly.

Some of these men could then have been sent on leave to their homes and an adequate check kept on them, through ADMS District, and gross and unnecessary extension of sick leave could have been prevented. Some of the men sent on leave could have been required to continue treatment as out-patients at some hospital department. Arrangements regarding this, if not already made by the medical superintendent of the civil hospital, could have been made by the CO Convalescent Depot, who would in any case have kept in touch with such departments to ensure the rapid return to units of all men as they recovered. The movements of all men on sick leave could then have been under complete control.

A great many of the patients transferred to a convalescent depot would normally receive further treatment there. Many would be posted directly back to their units. Others would be given leave by the CO Convalescent Depot according to his discretion before returning to their units, and unit commanders would, of course, be duly notified.

When convalescent depots were in use individual soldiers were quick to see that there would be restrictions on the over-liberal leave conditions hitherto obtaining, and some spoke unjustifiably of unsatisfactory treatment in the depots in order that these units might be short-circuited and the individuals gain more leave through doctors at the civil hospitals. The existing system had operated for so long that the convalescent depots, expensive units to establish, were never used to the full.

Some indication of the extent of sick leave and the possibility of

reducing it if a convalescent depot were available was given by the ADMS 4 Division, Lieutenant-Colonel Shirer, in a report to the DGMS on 4 August 1942, when he stated: 'Co-operation with hospitals and Areas remains good; but sick leave has become a primary factor associated closely with morale of troops .... A Convalescent Depot is one of the urgent needs, as is some hospital and hut accommodation. The Division has steadily over 600 on sick leave; probably 50 per cent or more of these would be much better in a Depot.... With a few camp hospitals and a convalescent depot much could be done to maintain efficiency and morale, and end the present "sick leave" racket.'

Other ADsMS also spoke of the abuse of sick leave.

Apart from the belated provision of convalescent depots in New Zealand, which could have hastened the return of many men to their units, the Army Medical Service found itself divorced from any control of sick soldiers once they went to public hospital. The DGMS made repeated attempts to get the system changed, but it was not until 1943 that he was partially successful in doing this. In the meantime, and even afterwards, many thousands of pounds were paid out to men who stayed at home on unnecessarily extended sick leave, or waited for some minor operation that would not have improved their medical grading, when they might well have been returned to civilian occupations and served their country in that capacity. The fault was not that of the medical services, but of those who failed to see the importance of professional medical opinion and the need for central medical co-ordination.

Administration of matters connected with army sick was handled by the existing staffs of district and area offices for the first year of the war. The DGMS made representations about securing a central control enabling medical officers at Army Headquarters to fulfil their function and duty in these matters. The decision was made to seek authority for special staff to deal with sick and wounded returning from overseas, as well as sick from New Zealand camps. On 14 August 1940 War Cabinet approved the appointment of special staff 'to deal with matters relating to sick and wounded personnel from mobilisation camps, mobilised units

and territorial units undergoing intensive training'. An officer was appointed to the staff of the Adjutant-General and an officer and NCO at each district headquarters, and an NCO at each of the remaining three areas in each district. From this modest beginning the staff of Sick and Wounded Branch (as it came to be known) grew to a total of 22 officers and 263 other ranks in 1944. When the officer-in-charge of the Sick and Wounded Branch was appointed on 9 September 1940 the DGMS understood that the branch would be under his general direction, and the officer was for a time accommodated in the office of Medical Headquarters. In 1941 the officer and his staff moved within the office of the Adjutant-General, and the DGMS reported that from that time there was a progressive falling-off in the co-operation between the Sick and Wounded Branch and the Army Medical Service, and that the former took over more and more of the duties which were the real prerogative of the Army Medical Service.

The title of 'sick and wounded branch' became a misnomer, from the medical viewpoint anyway, as the branch concentrated on record, or 2 Echelon work, and then to it was added transport arrangements, which were rather Q duties than A duties. Then was added the details of administration of all soldiers due for release from the service, those from furlough drafts as well as those medically boarded. As the system developed the onus was placed on nonmedical officers and NCOs, or laymen, to make medical decisions or interpret medical recommendations to the best of their ability. Action on the findings of medical boards was taken by the Sick and Wounded Branch, which had no medical officer. The branch itself recognised its limitations, but the Adjutant-General did not see fit to improve the system. The peculiar position arose whereby the officer-in-charge got help from a doctor of the Health Department (a Regional Deputy) for hours in the evenings at Army Headquarters to advise him on army medical files. Only a proportion of the files could be thus dealt with, and from 1942 the Health Department officer was not able to give this evening assistance. Yet there was a medical staff at Army Headquaters and there could easily have been a DADMS, Sick and Wounded.

In November 1941 the DGMS recommended the appointment of a medical officer to be in charge of Sick and Wounded Branch to improve the general medical organisation and resolve difficulties in the complex problem of the administration of sick and wounded soldiers, whose care fell to the Health Department as well as to the Army. He was to co-ordinate the control of all sick and wounded soldiers, whether in-patients or out-patients of public hospitals, and provide the needed liaison between the Army, the Health Department, the public hospitals and the Sick and Wounded Branch. But no such appointment was agreed to.

The position continued unchanged and the DGMS again took up the matter with the Adjutant-General on 28 May 1943, recommending that the Sick and Wounded Branch should come under the DGMS, and that a senior and experienced medical officer be appointed to direct and advise the Sick and Wounded Branch on all technical matters. These renewed representations were backed by examples of cases where important medical functions had been usurped, with a liability of dangerous consequences, and by the opinions of the DADMS, Remedial Treatment (Surgical), and Officer in Charge of Treatment, War Pensions Department.

Eventually, on 3 September 1943, it was agreed that the DGMS should appoint a senior medical officer for duty with Sick and Wounded Branch, Army Headquarters. An appointment was made forthwith. This officer had the powers of a Regional Deputy and was to review proceedings of all medical boards. He was also to decide all medical questions arising in connection with the administration of the Sick and Wounded Branch, but it took some time for the branch to develop the habit of referring such questions to him.

Medical boards composed of civilian practitioners of varying degrees of experience could recommend surgical or other treatment and the local Area Sick and Wounded officer take action. The part-time regional deputies usually co-operated with local Area Officers but could not

exercise complete oversight. Thus personnel could be referred to hospital for operations obviously not of any benefit to the Army in men who would in any case be discharged Grade III. Men taken in Grade III with disabilities were operated upon for them and discharged on pension for 'aggravation'. Others were kept on army pay for months waiting admission to hospital for minor operations when they could have been rehabilitated back to civilian life or, if otherwise Grade I, possibly returned to duty and told to forget about the operation. Again urgent action recommended by a camp senior medical officer was sometimes not taken, or the wrong course taken, because of lack of understanding by local officers of the Sick and Wounded organisation.

As long as the control of the Sick and Wounded Branch was vested in non-medical officers under the control of the Adjutant-General, medical matters tended to be inefficiently handled. Patients referred to civilian hospitals were treated too much from the civilian viewpoint without sufficient regard for the army aspect.

Following the appointment of an SMO Sick and Wounded, many weaknesses were discovered. For instance, it was found that soldiers due for discharge, but with very minor disabilities, were retained on full pay, although in most instances the men had resumed civilian employment. They occasionally reported to the out-patients' department of the local hospital and a progress report was filled in indicating that they were still under treatment. On this evidence their pay was still continued. In this category came such common conditions as minor skin ailments, e.g., tinea of the feet; old chronic cases of otitis media with occasional suppuration; and soldiers awaiting admission to hospital for months for non-urgent operations such as tonsillectomy, sub-mucous resection and herniotomy.

When the SMO Sick and Wounded pointed out the long-standing anomalies in relation to the retention of a soldier on army pay to the Officer-in-charge Sick and Wounded, the latter became very co-operative in amending the situation, although there were difficulties because the Act laid down that soldiers receiving treatment should receive full pay

until their treatment was completed or until they became a Pensions Department responsibility.

As SMO Sick and Wounded, Colonel Tennent made several trips around New Zealand in order to meet the Regional Deputies and medical boards and acquaint them with the Army's requirements in the disposal of soldiers who came in the category of 'sick and wounded'. When the difficulties of the soldier's disposal due to faulty or incomplete medical boards were explained to them they co-operated well, and little difficulty subsequently arose in this connection. Thus the solution was simple enough and vindicated the DGMS's long struggle to get some medical control of important medical matters.

It should have been possible for medical papers to have been referred directly to the Medical Branch, where they could have been examined and appropriate decisions made, and then for A Branch, or Q Branch, to have made the necessary record and transport arrangements. Adequate liaison and integration could surely have been established at Army Headquarters and also at District and Area offices. The medical supervision of troops should never be divorced from medical officers, and administrative organisation should be adapted to conform to this. A Branch, through Sick and Wounded, usurped control in medical matters to itself and rejected medical assistance as long as possible. Had there even been a senior medical officer with authority in the Sick and Wounded Branch all the time, many difficulties would have been avoided, and similar medical representation at Area offices would probably have been of added benefit to efficient administration. If the DGMS could have instructed whole-time medical officers in Area offices regarding army policy as to surgery in Grade II and III personnel, it is likely that the pressure on hospitals could have been reduced, and men otherwise fit could have performed military duties while waiting some minor remedial surgery and while on army pay.

The whole of the medical content of the work of Sick and Wounded Branch should have been under the control of the DGMS, who could

have delegated responsibility to a DADMS, Sick and Wounded. After medical decision all routine army action could have been undertaken by the appropriate army branch. As the Deputy Adjutant-General said before the appointment of an SMO Sick and Wounded: 'In general all administrative action required to be taken by Sick and Wounded Branch depends on a medical decision and it should be possible to state clearly in a set of instructions precisely what action is to be taken when a medical decision has been given'. If the medical decision was given by a civilian doctor then it should have been subject to check and follow up by the Army Medical Service. In general, however, the work of the Sick and Wounded Branch was very efficiently carried out – it fulfilled an essential function in the administration. It was only in the medical aspect that criticism is warranted.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VIII: CONVALESCENT DEPOTS

VIII: Convalescent Depots

In July 1941 War Cabinet decided to establish convalescent depots, each of 300 beds, in the vicinity of the three main mobilisation camps – Papakura, Trentham and Burnham. These depots were to cater for:

(*a*) Sick and wounded soldiers requiring a period of convalescence after illness.

(*b*) Those men who broke down during their initial period in camp and who could be made Grade I by special graduated training.

(*c*) Soldiers evacuated from overseas who were likely to be made Grade I by suitable training and exercises.

(*Note:* These convalescent depots are not to be confused with the convalescent hospitals at Hanmer and Rotorua, which were under the control of the Department of Health, and in which special medical or surgical treatment was given.)

During 1942 the buildings for the convalescent depots on the sites at Raventhorpe, Silverstream, and Burnham were completed. The depots in the Northern and Southern Military Districts proceeded to function as originally planned, but the Silverstream buildings were handed over to the United States Forces and became 6 US Naval Mobile Hospital. The question of providing a convalescent depot for Central Military District on another site was given consideration, but it was eventually decided that the demand for it was less urgent and no alternative depot was established.

The convalescent depot to serve Papakura Camp was sited at Raventhorpe on the northern side of Bombay Hill, some 26 miles south of Auckland. This location was decided upon because G Branch indicated that tactical considerations necessitated the removal of the unit well south of Auckland, and south also of the bottleneck where the Manukau and Waitemata harbours are separated by a distance of only about two

miles. The aspect was sunny and a good water supply was available. Construction was prolonged and it was not until December 1942 that Raventhorpe was opened for patients. The depot consisted of an administration block and ten wooden hutments, each holding thirty patients. Many labour-saving devices were installed, and a large cold chamber ensured no waste of food from deterioration. Abundant facilities for recreation were provided. There was a large assembly hall with a platform, a cinema, a sports room, a library, a football ground and a small course for clock golf. A team of well-trained physical and drill instructors was selected as part of the staff, and classes, suitably graded, were held to establish physical fitness. For this work there was an excellently equipped gymnasium and well-laid-out drill ground. Route marching was graduated in easy stages. A physiotherapy department was added later. A depot band was available both for training and for entertainment. No military training in the accepted meaning of the term was attempted at Raventhorpe. The depot continued to function until after the war ended and was then taken over by the Mental Hygiene Division of the Health Department.

IX: REMEDIAL TRAINING CAMP, ROTORUA

IX: Remedial Training Camp, Rotorua

The institution of remedial training for those deemed unfit to stand up to the ordinary course of military training was first instituted in New Zealand about October 1941 at Papakura Camp. Men were chosen from the Grade II class, especially those with minor foot disabilities and general physical under-development, and given a special course of graduated training. This proved successful and 25 per cent were graded I.

As a result of the success at Papakura a special remedial training camp was set up at Rotorua, the first men being admitted at the beginning of January 1942. The staff consisted of a medical officer in charge and physical instructors, some with knowledge of remedial treatment, to carry out the special treatment; combatant officers and NCOs were in charge of companies and platoons, the whole administration being on a battalion basis.

The men referred for training were selected from base depots, divisional and district units, and were doubtful Grade I and II. The types chosen as suitable were men of inferior physique; underdeveloped men; men with foot and leg disabilities of minor degree; men with certain nervous disabilities, again of minor degree; and those who had undergone certain types of remedial treatment and who required graduated training.

It was particularly stressed that men of a highly neurasthenic type, men mentally unwilling to serve in the Army and incorrigibles were not to be selected.

A report of the work done in the camp in fourteen months was furnished at the end of February 1943. A total of 2643 men had been

admitted, the peak state being 842. The percentage becoming Grade I had steadily increased until it had reached 35 per cent. Of the cases in camp at one time, the disabilities were: Flat feet, 159; other foot conditions, 112; poor physique and debility, 121; injured knee joints, 63; nervous, 48; back troubles, 20; and 61 others. The types most suitable were the under-developed youth and the soft, untrained sedentary worker. The trier always did well, even though he only passed Grade II. The antagonistic type proved unsatisfactory and such men were discharged to civilian employment.

A later report showed that 37 per cent were marched out Grade I, 57 per cent marched out Grade II, and 6 per cent were boarded out of the Army. It also showed that a large number of men were being retained over three months and a considerable number over six months.

As was to be expected a proportion of the entrants were unsuitable. There was a tendency to keep the men too long and to be over sanguine with regard to the results. There was also an insufficiency of trained physical instructors both in the Rotorua camp and generally throughout the Army.

Eventually, from April 1943, as the demands for men in the Army lessened, only Grade I men were called up, the others being reserved for civilian work, and the camp was no longer required. It closed and some of its functions were undertaken by the new Linton Camp. It had done good work, but in retrospect it would appear that satisfactory results were obtained only in the better class of entrant with very minor disabilities, and in the case of the majority of the men employment in a lower grade in the Army or discharge to civilian employment would have been the better course to pursue. The majority were not worth the time and trouble devoted to them – and they could have been more profitably employed in civilian work.

The right psychological outlook of the trainees is the essential factor in any success in a remedial training camp. ‘With the right attitude of mind a surgeon can practice rehabilitation in a barn, without it he will

fail in the most lavishly equipped gymnasium.’

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

X: DENTAL SERVICES

X: Dental Services

For some years prior to 1939 the Director of Dental Services (Army) was directly under the Adjutant-General. After protracted negotiations it was decided by the Adjutant-General on the recommendations of the Director of Medical Services that the Dental Service, as a specialised surgical unit, should once more become part of the New Zealand Medical Corps, under the Director-General of Medical Services, although still retaining its previous organisation. This arrangement was in line with what obtained in Great Britain and Australia. The position, however, was such that the DDS still had approach to the Adjutant-General, to the extent even of being able to arrange for changes in his organisation without prior consultation with, or the approval of, the DGMS. However, the Dental Corps was very efficient in its working in spite of the disagreement in command. The best method of control would seem to be that of placing the Dental Corps under the command of the DGMS but allowing it freedom in its own corps arrangements, as evolved in 2 NZEF in the Middle East.

Prior to the war the Dental Corps consisted of a Director of Dental Services, three assistant directors and six dental officers attached to field ambulances. When war began the DDS (Army and Air), and later an ADDS (Army), were employed on a whole-time basis at Army Headquarters, Wellington, together with an ADDS for each of the Northern and Southern Military Districts, the two latter being part-time officers. The appointments of ADDS in the districts were later abolished.

All dental treatment of recruits was carried out at the expense of the State and in most cases was done after the recruit entered camp. Dental hospitals were established in each of the three main mobilisation camps. Dental sections were attached to various other units.

All camp dental hospitals and dental sections were fully equipped with modern equipment, some of which was manufactured in New Zealand. An Army Dental Store maintained the supplies of expendable stores.

With the First Echelon 4 officers and 12 other ranks of the Dental Corps proceeded overseas, with the Second Echelon 7 officers and 9 other ranks, and with the Third Echelon 12 officers and 30 other ranks. Reinforcements for the Dental Corps proceeded overseas regularly along with reinforcements for other branches of 2 NZEF.

XI: OPTICIAN SERVICE

XI: Optician Service

Following a War Cabinet decision of 25 October 1940, a limited refraction service for, and the supply of Mark III spectacles to, troops of the expeditionary force located in mobilisation camps was introduced. In this scheme selected and registered members of the Institute of Opticians of New Zealand were employed in a civilian capacity. They provided their own equipment. This scheme operated from November 1940 to November 1941.

Early in 1942 representations were made to the Adjutant-General and the DGMS by the central executive of the Institute of Opticians pointing out the need for a full-time optical service, especially with the mobilisation of Grade II men. The services provided under the civilian scheme had improved the visual efficiency of the forces.

A scheme was placed before the Minister of Defence for the appointment of seven registered opticians with commissioned rank (one as Officer in Charge at Medical HQ) to provide a full refraction service to the forces. Equipment was to be purchased by the Army. The lens and mechanical work was to be carried out by wholesale optical firms under contract. The Army was to supply the unglazed Mark III frames.

This scheme was approved by War Cabinet on 14 July 1942. Nominations for the appointments were asked for from the Institute of Opticians and the first appointment was made on 17 August. All the opticians appointed held high qualifications, the majority having had several years of English post-graduate study. Three were drawn from other army positions (one commissioned and two non-commissioned officers) and the remaining four from private practice. The orderlies had had some optical experience as mechanics or assistants.

Optician Units

The Army Optician Service commenced operation in New Zealand with the formation of six optician units. The personnel of each unit comprised one commissioned officer (a registered optician) and one orderly. Three of the units were mobile and were mounted on long-wheel-base, cab-over-engine chassis.

With the despatch of New Zealand forces to the Pacific, three additional units were formed and posted to 3 Division, to Fiji, and to No. 1 Islands Group, RNZAF. These overseas units were enlarged by the addition of a sergeant mechanic and a small workshop plant complete with stocks of uncut Toric lenses. A War Cabinet decision of 28 August 1943 extended the optician service to Navy and Air Force personnel and further units were formed. A complete mobile unit was despatched to 2 NZEF in Italy in January 1944.

In general, the optician service worked in close co-operation with medical officers, supplying reports on visual gradings, carrying out investigations in cases of ocular and visual discomfort, and supplying spectacles where the comfort or military efficiency of servicemen could thereby be improved.

The supply of equipment for the optician units was difficult. At first nearly all the equipment was lent by members of the Institute of Opticians. However, the problem was surmounted by imports, by scouring the local market, and by the manufacture of some equipment locally. War Cabinet authority was for the expenditure of about £300 a unit, and it was stated that in equipment and instruments the units compared very favourably with the average consulting room in the country.

In view of the large number of camps scattered throughout New Zealand in 1942–43, the unsuitability of the standard camp accommodation and the impracticability of building special hutments in all camps, it was arranged that mobile vans be constructed. These were

built in Wellington on 158-inch wheelbase, cab-over-engine chassis. The body consisted of a consulting room 12 ft by 7 ft 6 in and an office and stock room 5 ft by 7 ft 6 in. By 31 March 1943 two vans were in operation.

For the larger camps a special set of rooms had previously been built at Papakura and Burnham, and additional permanent accommodation especially designed for the purpose was included in the plans for the new hospital buildings at Trentham and Linton.

So far as was known New Zealand was the first Allied country to establish an optician service for refractive duties with officers holding commissioned rank, and when one unit went with 3 Division to the Pacific was stated to be certainly the first country to send such a unit overseas. The formation of the service was closely followed by Australia, which established a like organisation. It was understood that the American and British units were limited to purely mechanical duties.

Up to 30 May 1945 the optician service had performed 30,000 full visual examinations, in addition to many thousand surveillance and boarding visual checks, and the work performed by this branch of the medical service fully justified its inception.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XII: MEDICAL ARRANGEMENTS FOR HOME DEFENCE FORCES

XII: Medical Arrangements for Home Defence Forces

During 1940 and 1941 measures were taken to strengthen home defence. The Territorial Force was expanded, reorganised and put on a war footing. With this expansion of the Territorial and home defence programme the following additional medical units were formed: 8 Field Ambulance (Army Reserve), three cavalry field ambulance companies, four motor ambulance convoys, four hygiene sections, and three field ambulance companies for fortress troops, formed from men of the National Military Reserve. In the formation of these every consideration was given to the matter of mobility.

All Territorial units underwent intensive training. The field hygiene sections attended a practical and theoretical course at Trentham, where officers of the Health Department assisted in their tuition. Many busy medical practitioners gave up their annual holidays and entered camp with the Territorials for a period. Several house surgeons from public hospitals were given intensive training so that they could be sent overseas at short notice when they were released for service with 2 NZEF. (Considerable difficulty was being encountered at this stage in obtaining a sufficiency of medical officers for both overseas and Territorial service.)

Preparations for Active Operations in New Zealand

Beginning in December 1941, when New Zealand was threatened with invasion by the Japanese forces, extensive mobilisation of troops was carried out for home defence. Early in 1942 a division was mobilised in each military district – northern, central and southern. These divisions were on 25 May 1942 called 1, 4 and 5 respectively. (Second New Zealand Division was in the Middle East and 3 NZ Division in the Pacific.) An ADMS was appointed to each division in control of the field

ambulances, of which there was one for each brigade, and the regimental medical officers.

In addition, a considerable number of fortress troops were posted to each of the four main ports, and these likewise had the services of a field ambulance. Altogether twelve field ambulances (1, 2, 3, 8, 9, 10, 11, 12, 13, 14, 15 and 16), four field hygiene sections (1, 2, 3 and 5) and four motor ambulance convoy sections (1, 2, 3 and 4) were mobilised.

The field ambulances were stationed as follows:

1 Division (HQ Whangarei)	1 Fd Amb, Warkworth.
	9 Fd Amb, Kaikohe.
Northern Mil. Dist. (Fortress Troops)	12 Fd Amb, Auckland.
4 Division (HQ Palmerston North)	2 Fd Amb, Palmerston North.
	8 Fd Amb, Masterton.
	10 Fd Amb, Greytown.
Army Headquarters	21 Lt Fd Amb, Waiouru.
Central Mil. Dist. (Fortress Troops)	13 Fd Amb, Wellington (Johnsonville).
5 Division (HQ Riccarton)	3 Fd Amb, Rakaia.
	11 Fd Amb, Blenheim (partly OUMC).
	15 Fd Amb, Ashburton (partly OUMC).
Southern Mil. Dist. (Forttress Troops)	14 Fd Amb, Christchurch.
	16 Fd Amb (OUMC), Dunedin.

A representative conference of senior medical officers held in Wellington on 9 December 1941 considered the question of the redistribution of personnel, transport and equipment to enable each mechanised field ambulance to function in nine self-contained sections.

It was decided that each of the three sections into which each company was divided should be self-contained and similar as regards equipment and number of personnel. This was also to apply to the field ambulance headquarters section, unless the latter was used as a mobile

transfusion section. At the same time it was recommended that field ambulance commanders should be allowed to use their judgment according to the tactical situation as to the exact size of any particular section they might detach for special duty. Provision was to be made in each field ambulance for an adjutant who was not a medical practitioner (appointments were made in 1942).

The standard of medical equipment of any section was to be not less than that of a light field ambulance section. The main alteration was the adding of a regimental medical pannier and a medical companion to No. 2 and No. 3 Sections. One transfusion pannier and seven transfusion companions were to be issued to each field ambulance, the pannier being held by Headquarters and one companion by each section. A tarpaulin 20 ft by 30 ft was issued to each section.

Each section was provided with means of water testing and sterilisation. It was recommended that the number of motor-cycles should be increased so that one could be provided for each section, and also that a wireless set for each section should be obtained if possible. Additional petrol cookers and primuses were to be provided.

The conference also brought to the notice of the Adjutant-General the following points:

(a) **That there was a shortage of NZMC and ASC personnel in all field ambulances;**

(b) **That NZMC personnel were being transferred from field ambulances to other arms of the Territorial services; and**

(c) **That the posting of conscientious objectors and non-combatants to field medical units was destroying the morale of these units. It was stated in regard to this class of recruit that 'they should be used for camp fatigues and sanitary squads, and only those with religious objections to the shedding of blood should go into the NZMC.'**

Policy of Evacuation

The policy of evacuation during active operations in New Zealand was planned so that all serious cases would be admitted to civilian

hospitals. This was set out in a statement at the time as follows:

The casualties will pass back from the Regiments in the Field through the Advanced Dressing Station of a Field Ambulance to its Main Dressing Station, this being carried out by the transport of the Field Ambulance itself. From the Main Dressing Station of the Field Ambulance, the Motor Ambulance Convoy, which is an Army Medical Unit, will convey the patients to the nearest Public Hospital, or possibly to an Ambulance Train which has been arranged to receive them. The Ambulance Train will be under the control of the Health Department.

The Health Department has classified all Hospitals into No. 1, No. 2 and No. 3.

The No. 1 Hospitals are the Base Hospitals which are capable of carrying out all types of Medical and Surgical treatment. Such Hospitals are Auckland, Wellington, Christchurch, Dunedin, also Waikato, Palmerston North, Wanganui, Napier, New Plymouth, Timaru and Invercargill.

The No. 2 Hospitals are buildings such as schools, halls, etc., which during an emergency could be converted into Hospitals which would supplement the No. 1 Hospitals.

No. 3 Hospitals are the numerous small hospitals such as Oamaru, Balclutha, Ashburton, etc., which could also receive sick and wounded.

When either a No. 1 or No. 3 Hospital comes into the region of active hostilities, the civilian patients would be evacuated. Those fit to go home would be sent there: others not requiring major surgical measures to No. 2 Hospitals, and the remainder requiring such surgical attention, to a No. 1 Hospital further back. The Advance Hospital would thus be ready to receive war casualties. If, as the result of an enemy advance, this Advance Hospital becomes unsuitable for the purpose of holding Army casualties for any length of time, the next Civilian Hospital in the rear would be the one to which wounded would be delivered by the MAC,

and the Main Dressing Station of a Field Ambulance would probably take over the Advance Hospital from the Health Department. Possibly the Main Dressing Station would use part of the buildings and the Health Department still retain control of the operating theatre for the treatment of urgent abdominal cases. Therefore it is envisaged that the Main Dressing Station of a Field Ambulance may take over one of the smaller Hospitals which is close to the area of hostilities. During an advance this Hospital would again come under the control of the Health Department and be used to receive patients from the Main Dressing Station of the Field Ambulance which has moved forward.

A conference was held on 7 August 1941 by heads of the Army and Health Departments to plan the policy, and decisions were reached as follows:

DEFINITION OF HOSPITAL DOOR DURING ACTUAL HOSTILITIES IN THE WAR ZONE

The Hospital door to be that of a fully equipped and staffed hospital within a reasonable distance of the firing line outside the zone of actual hostilities. All transport of patients behind this hospital will be the responsibility of the Department of Health, while in front it will be the responsibility of the Army, e.g., MAC.

In accordance with modern procedure the Main Dressing Station may be required to act not only for reception, recording, resuscitation and evacuation, but under certain circumstances it may be necessary for it to act as a surgical centre for urgent surgical disabilities which cannot be evacuated to the civilian hospital within the maximum safety interval of four hours. For this reason it may be necessary for the MDS to take over temporarily one of the No. 3 Grade Hospitals and so avail itself of the operating theatre and other facilities.

THE HOSPITAL TRAIN

Will normally be staffed and run by the Department of Health, and

consequently the term 'Railhead' has been cancelled. The Hospital Train will be used for the evacuation of soldier, or if necessary, civilian patients from the civilian hospitals, receiving the wounded, and, in exceptional cases where it may be found necessary to hold and operate on severely wounded at the MDS, the Hospital Train may be sent forward to collect patients from the MDS.

LIAISON OFFICER

There will be a Liaison Officer of the Department of Health attached to ADMS Field Force, who will nominate the Hospital to which the wounded may be evacuated, and will make changes from time to time as required by the exigencies of the position. For instance, if the Field Force should be retiring it may be necessary to completely evacuate the Hospital to one further in the rear: or in an advance enlarge with staff and equipment one of the smaller hospitals....

AMBULANCE RAILWAY CARRIAGES

These are the property of the Army and the Army has priority in their use for manoeuvres and the conveying of sick soldiers from Camp Hospital to Public Hospital where the distance is long, e.g., Waiouru to Wanganui. Equipment belonging to the Health Department will be taken and stored by the Health Dept. when carriage is not being used. Equipment belonging to the Army will be taken over by the Q.M. when not in use. All equipment, however, will be available for either the Army Medical Service or the Department of Health, though the Department using it will be responsible for any shortages afterwards.

Accommodation

In 1942 thousands of recruits, raw, young and inexperienced (the age had been reduced to 18), were mobilised for home defence divisions during the autumn and winter and before the widely-disposed new camps were ready to receive them, so that inevitably there was overcrowding. The loss by enemy action of some thousands of tents in transit from

India increased the danger and discomfort. Something had to be done and done at once. The Fletcher Construction Company and other large firms began mass production of hundreds of huts of various sizes – 2-man, 4-man, 8-man. The last – the result of lessons learned in the early stages – was a great success and by far the best hut from every point of view. Major Cowdrey had attended the preliminary conferences and full approval of the design was given by the DGMS. It was, however, agreed that as soon as possible accommodation would be reduced to six, or even five, to each hut.

It was unfortunate that the Department of Health, apparently not aware of the true position and its urgency, condemned the eight-man hut without reference to Army Medical Headquarters. Fortunately, after representation had been made by the DGMS, through the QMG, War Cabinet agreed to the adoption of these huts. The confidence reposed by War Cabinet was justified, as the eight-man hut was easily the most popular with the troops, especially when accommodation was reduced to six men to each hut.

Surgeon Lieutenant C. A. Pittar on HMS *Achilles* during the *Graf Spee* action, December 1939

Crowds at the Naval Base during Navy Week. HMNZS *Philomel*, September 1944

Crowds at the Naval Base during Navy Week, HMNZS *Philomel*, September 1944

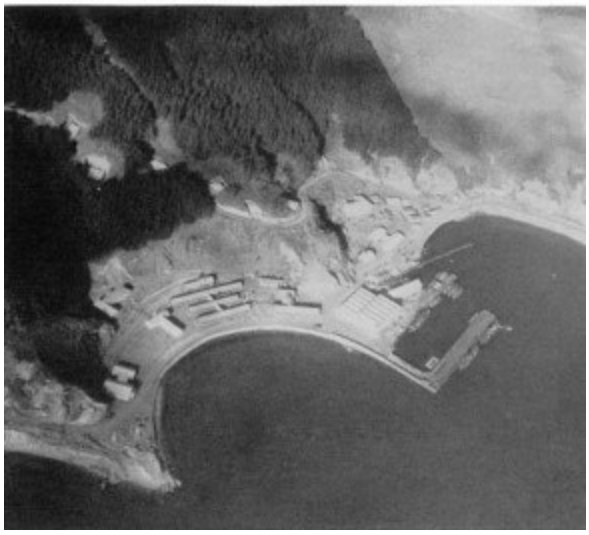
An aerial view of HMNZS *Tamaki*, Motuihi Island

An aerial view of HMNZS *Tamaki*, Motuihi Island

Surgeon Lieutenant-Commander I. B. Ewart (left) and Surgeon Lieutenant S. A. Struthers on HMS *Leander*, Alexandria, July 1941

Surgeon Lieutenant-Commander I. B. Ewart (left) and Surgeon Lieutenant S. A. Struthers on HMS *Leander*, Alexandria, July 1941

An aerial view of the base at HMNZS *Cook*, Shelly Bay, July 1944



An aerial view of the base at HMNZS *Cook*, Shelly Bay, July 1944

Captain W. E. Parry of the *Achilles* dresses his leg wounds during the *Graf Spee* action

Captain W. E. Parry of the *Achilles* dresses his leg wounds during the *Graf Spee* action

Surgeon Captain H. K. Corkill, OBE, VR
Director of Naval Medical Services

Surgeon Captain H. K. Corkill, OBE, VRD. Director of Naval Medical Services

Flight Lieutenant L. A. Scrivin and LAC C. A. Littlewood attend to patients in the Los Negros hospital

Flight Lieutenant L. A. Scrivin and LAC C. A. Littlewood attend to patients in the Los Negros hospital

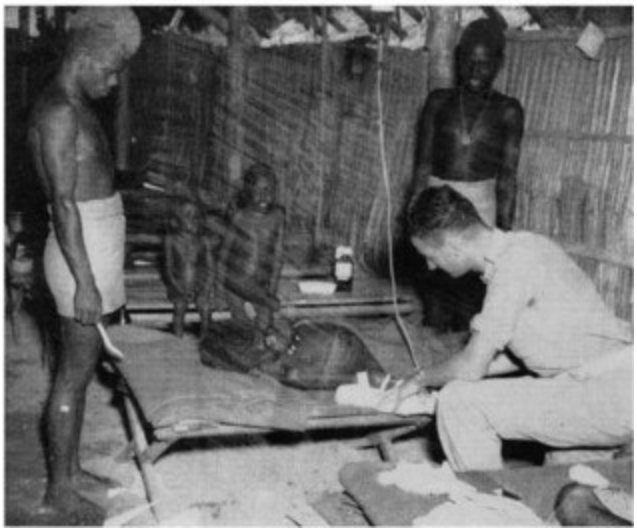
Squadron Leader G. de L. Fenwick (second from right) with medical sergeant and orderlies outside the medical section tent at Espiritu Santo

Squadron Leader G. de L. Fenwick (second from right) with medical sergeant and orderlies outside the medical section tent at Espiritu Santo

RNZAF medical section, Bougainville

RNZAF medical section, Bougainville

A blood transfusion at Angan native hospital, Bougainville

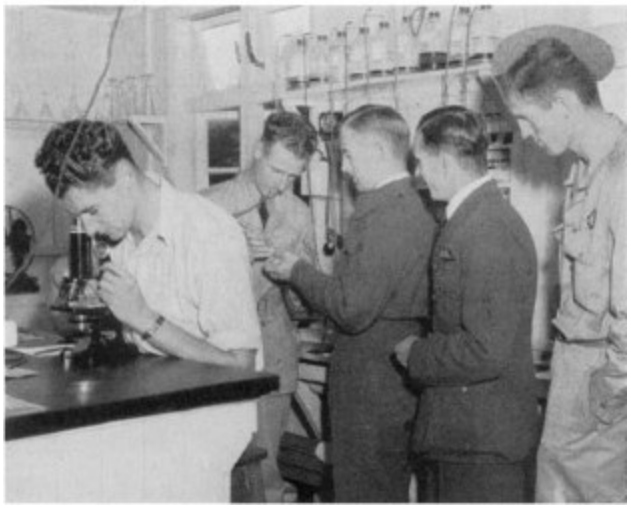


A blood transfusion at Angan native hospital, Bougainville

RNZAF medical section ward at Guadalcanal

RNZAF medical section ward at Guadalcanal

No. 1 Squadron aircrew being medically examined at the Personnel Reception Depot, Mangere, after arriving from the Solomon Islands



No. 1 Squadron aricrew being medically examined at the Personnel Reception Depot, Mangere, after arriving from the Solomon Islands

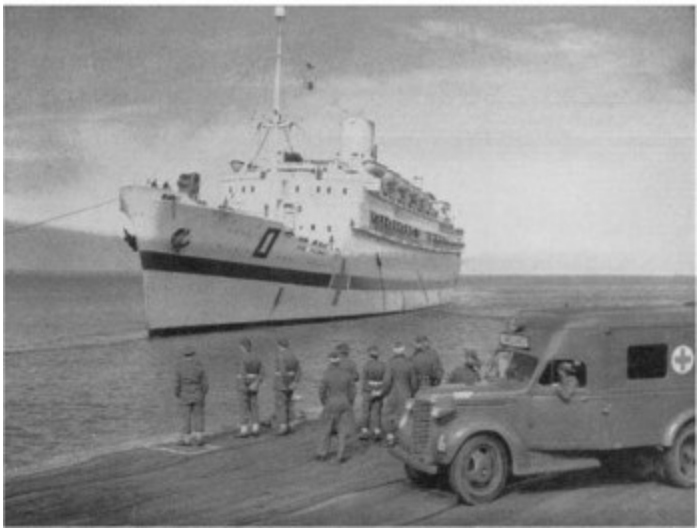
NZHS *Maunganui*

NZHS *Maunganui*

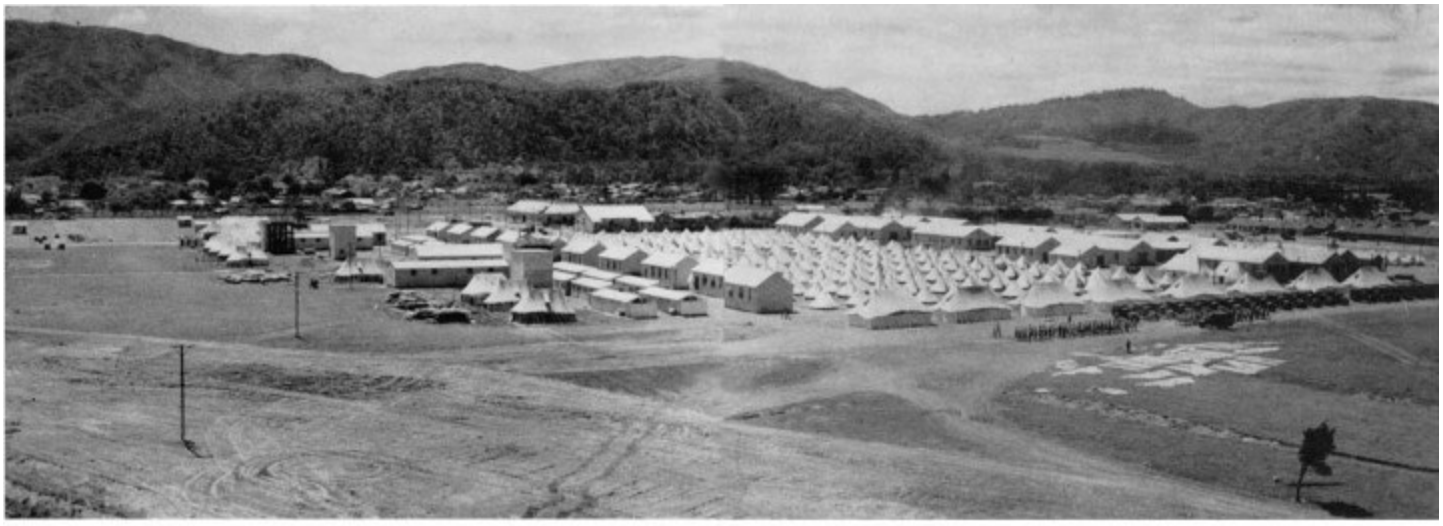
A ward in NZHS *Maunganui*

A ward in NZHS *Maunganui*

NMHS *Oranje*



NMHS *Oranje*



TrenthamCamp

Trentham Camp

A First Echelon recruit is medically examined at Wellington
Left to right: Dr E. M. Litchfield, unidentified recruit, Sir Fred Bowerbank and Sir Donald McGavin

A First Echelon recruit is medically examined at Wellington *left to right:* Dr E. M. Litchfield, unidentified recruit, Sir Fred Bowerbank and Sir Donald McGavin

Lieutenant G. Blake Palmer (right) making blood tests at Papakura Camp

Lieutenant G. Blake Palmer (right) making blood tests at Papakura Camp

Inside one of the sleeping huts, Trentham Camp

Inside one of the sleeping huts, Trentham Camp

A demonstration by 4 NZ Field Ambulance of the use of a regimental water cart, Burnham Camp, November 1939. Maj A. A. Tennent is on the left

A demonstration by 4 NZ Field Ambulance of the use of a regimental water cart, Burnham Camp, November 1939. Maj A. A. Tennent is on the left

Members of 1 NZGH take part in the Second Echelon farewell parade, Wellington
Left to right: Capt D. G. Radcliffe (with glasses), Capt D. T. Stewart and Capt J. M. Clarke

Members of 1 NZGH take part in the Second Echelon farewell parade, Wellington *Left to right:* Capt D. G. Radclifle (with glasses), Capt D. T. Stewart and Capt. J. M. Clarke

2 NZGH marches past Brigadier Bowerbank, Director-General of Medical Services, at Trentham

2 NZGH marches past Brigadier Bowerbank, Director-General of Medical Services, at Trentham

The Main Dressing Station at the foot of the Kaimai Hills during a 3 Division exercise, October 1942

The Main Dressing Station at the foot of the Kaimai Hills during a 3 Division exercise, October 1942

Military exercises in the Kaimai Hills. Stretcher-bearers carry out a casualty

Military exercises in the Kaimai Hills. Stretcher-bearers carry out a casualty

One of the wards at Raventhorpe Convalescent Depot

One of the wards at Raventhorpe Convalescent Depot

Raventhorpe Convalescent Depot

Raventhorpe Convalescent Depot

Hospital ship patients arrive at Casualty Clearing Station, Aotea Quay

Hospital ship patients arrive at Casualty Clearing Station, Aotea Quay

Third Field Ambulance exercises, Christchurch

Third Field Ambulance exercises, Christchurch

The hutted camps were provided with sanitation facilities. (There was some medical criticism of the design and material used.) Good work was often done by the units themselves on construction and maintenance and the field hygiene sections were active in supplementing and improving sanitation arrangements and supervising hygiene.

Medical Arrangements

The field ambulances were kept busy attending to sickness cases. Some units had a large area to serve. For instance, 9 Field Ambulance under Lieutenant-Colonel Pettit [1] at Kaikohe handled all evacuations for the very scattered 12 Brigade in the far north. Evacuation to civilian hospital was by railcar to Whangarei, 67 miles away.

In the divisional areas camp hospitals were established. For example, 4 Division in June 1942 had them at Wanganui (10 beds), Feilding (10 beds), Linton (10 beds), Awatapu (12 beds), Awapuni (32 beds), Masterton (24 beds) and Greytown (24 beds); and PA huts were functioning at all these places. The average number of beds occupied in camp hospitals that month in the Division was 56, and in public hospitals 206. It became the custom to keep patients in the camp hospitals longer than the prescribed forty-eight hours, the reason given by some field

ambulances being that their staffs could look after the patients better than the local hospitals.

Shortage of Medical Officers

The medical officers for units of the home defence divisions were to some extent a paper strength only, though in the event of active operations it was likely that additional medical officers would have been found from those in civilian practice. In the period of 'standing to' the demands of 2 NZEF and the civilian population were so strong that medical manpower could not be diverted to give complete home defence postings where the scope for service was not so great. At 14 July 1942 the establishments of New Zealand units provided for 201 medical officers, including Army Headquarters, mobilisation camps, etc., but the posted strength was only 107, of whom 28 were part-time. Not all units had RMOs, but the greatest deficiencies were in the field ambulances, which had only 34 officers when the establishments provided for 103. Of the medical officers on whole-time duty with the Army and Air Force, a large number were Grade II or III and many were middle-aged or old men. Of the 90, 48 were Grade I, 27 were Grade II, 12 were Grade III, and three were temporarily unfit. Twenty-six were aged between 40 and 50, 17 between 50 and 60 and eleven over 60. (The last were not in field units.) This group served 64,000 men, and those solely concerned with attending to sick in units numbered 44. There was a demand, partly built up by the social security free medical service, for more doctors to be released for civilian practice, but the reply of the DGMS (Army and Air) was: '... should New Zealand be attacked and full mobilisation occur, involving the calling up of an additional 107,000 men who are at present not mobilised, the position regarding medical service would be tragic.'

During the state of emergency field ambulance staffs were kept at a bare minimum, and wherever possible trained non-medical officers, medical orderlies and part-time medical officers were made use of for duties that normally would have been those of full-time medical officers.

Also, where possible field ambulance medical officers acted as RMOs for units in their neighbourhood. In the WAAC camps nursing sisters were appointed and did the work of medical officers.

In late 1942 the other ranks of the medical units were reduced in strength as men were withdrawn to essential industries and others sent later to 3 NZ Division. There were also shortages of vehicles that would have created difficulties in an emergency. In the middle of 1942 medical officers with experience in 2 NZEF campaigns in the Middle East criticised the efficiency and training of some of the medical units – they tended to 'dig themselves in' and gather surplus equipment and not train for larger numbers of casualties that might have to be treated in a mobile role with reduced equipment. Some of the officers without basic military training acted rather as doctors than as medical officers with a positive responsibility for the health of units and individuals. Hygiene sections had been pressed into engineering functions instead of being advisers and supervisors of health. The experience of the medical officers from overseas enabled reforms to be effected. By the time the medical services were reasonably well organised the invasion threat had passed and organisation of 3 Division then became first priority.

'Non-medical' (stretcher-bearer) Officers

The conference of senior medical officers in Wellington on 9 December 1941 recommended that an adjutant who was not a registered medical practitioner be appointed to each field ambulance. The grave shortage of NZMC officers in 1942 led to authority being granted in January for the promotion of suitable NCOs to commissioned rank, one to act as adjutant and instructor to each field ambulance. In April 1942 each field ambulance became entitled to three non-medical officers, including the quartermaster. By 1943 the number had been increased to four – an adjutant and an officer for each company.

In August 1942 twenty NCOs after training at OCTU, Trentham, were commissioned and posted to field ambulances in New Zealand. Further courses were arranged for prospective non-medical officers (by September

1942 known as stretcher-bearer officers to avoid confusion). The courses were made more extensive to include ordinary OCTU training with other officer cadets as well as more specialised training, such as instruction at casualty departments and MI rooms and in medical stores. When reorganised the course lasted fifteen weeks; earlier courses were much shorter.

In June 1943 there were twenty-six stretcher-bearer officers in the field ambulances and nine in other units (MACs and field hygiene sections), besides nine quartermasters. Other stretcher-bearer officers were serving in the Pacific force at that time.

With the reorganisation of field medical units in New Zealand in July 1943 and their reduction to maintenance and training staffs only, a number of the stretcher-bearer officers had to relinquish appointments, and a proportion of these officers reverted in rank in order to proceed overseas with the 10th Reinforcements.

Reduction of Home Defence Forces

Early in 1943, with the passing of the most dangerous phase of Japanese operations in the Pacific, reductions were made in the forces mobilised for home defence, transfers being made to the Air Force and to industry. By the end of the year there had been a general reorganisation and considerable reduction in the number and size of medical units. All field ambulances were reduced to cadres, with the exception of the fortress field ambulances (12, 13 and 14) which retained an operational role. The other ambulances then retained only maintenance staffs. No medical officers were then required on the strengths of these units. Field hygiene sections and motor ambulance convoys were continued with nominal maintenance staffs.

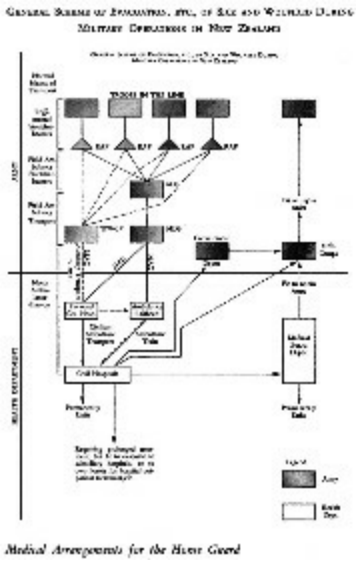
Army in New Zealand – Medical Officers at 14 July 1942

Army Headquarters	*Establishment*	*Posted Strength*
Administrative	3	3
Trentham Mob. Camp	6	6

Medical Training Depot	**1**	**1**
Waiouru Mob. Camp	**4**	**4**
Field Ambulances (8, 10 and 21)	**28**	**11**
RMOs	**8**	**6**
MAC	**1**	
	51	**31**
Northern Military District		
Administrative	**1**	**1**
Field Ambulance (12)	**4**	**2**
RMOs	**5**	**3**
Narrow Neck Camp	**4**	**4**
Ngaruawahia Camp	**1**	**1**
Papakura Mob. Camp	**3**	**3**
Convalescent Depot	**1**	
Remedial camp, Rotorua	**2**	**2**
MAC	**1**	
	22	**16**
1 *Division*		
Administrative	**1**	**1**
Field Ambulances (1 and 9)	**18**	**8**
RMOs	**9**	**7**
	28	**16**
Central Military District		
Administrative	**1**	**1**
Field Ambulance (13)	**4**	**2**
RMOs	**5**	**5**
Fort Dorset	**3**	**2**
Convalescent Depot	**1**	**1**
MAC	**1**	
	15	**11**
4 *Division*		
Administrative	**1**	**1**
Field Ambulance (2)	**9**	**4**

RMOs	**6**	**6**
	16	**11**
Southern Military District		
Administrative	**1**	**1**
Field Ambulances (14 and 16)	**13**	**1**
RMOs	**10**	**3**
Burnham Mob. Camp	**3**	**3**
Convalescent Depot	**1**	
MAC	**1**	
	29	**8**
5 *Division*		
Administrative	**1**	**1**
Field Ambulances (3, 15 and 11)	**27**	**6**
RMOs	**12**	**7**
	40	**14**
Grand total	**201**	**107**

Number of doctors serving as part-time medical officers: 28. (Not included: Four hygiene sections (1,2,3 and 5) with non-medical officers.)



Medical Arrangements for the Home Guard

GENERAL SCHEME OF EVACUATION, ETC., OF SICK AND WOUNDED DURING MILITARY OPERATIONS IN NEW ZEALAND

Medical Arrangements for the Home Guard

The Home Guard was formed in August 1940 on a voluntary basis and men in civilian life undertook training in the evenings and at weekends. After Japan's entry into the war registration for Home Guard service was, in 1942, made compulsory for men of military age not already in the Army and for men aged 46 to 50 years. By May 1943 the Home Guard was 124,000 strong, equipped with uniforms, rifles, machine guns and tommy guns. There were skeleton staffs only on whole-time service.

In December 1943 the war situation had improved sufficiently for the Home Guard to be placed on the Army Reserve.

Medical arrangements for the Home Guard were drawn up by the Director-General of Medical Services in March 1942 and formed the basis of the official instructions on the medical organisation for the evacuation of casualties issued on 25 May 1942.

Home Guard Medical Treatment

There was no general medical examination of all Home Guard personnel. The standard of fitness required for recruits to the Home Guard was not as high as that for Territorial service (Grade II). Generally speaking, a man able to follow his normal occupation was considered fit for Home Guard service. As Home Guard units were not on full-time duty, there was not the need for constant medical supervision as there was in the case of Territorial units. In any case, the acute shortage of medical men, both for civilian and army duties, prevented qualified medical officers being attached to Home Guard battalions. In cases of injury or sickness, Home Guardsmen were attended by a medical officer if an army unit was in home service nearby, or by the nearest medical practitioner.

As the Defence Emergency Regulations 1941, Amendment No. 1, brought the Home Guard into the defence forces of the Dominion, the statutory right to claim under the War Pensions Extension Act 1940 was thereby conferred on Home Guardsmen and their dependants in those

cases where disability was due to service in the Home Guard or where disability was aggravated by such service.

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[1] **Col T. H. Pettit; Auckland; born Nelson, 1 Aug 1889; medical practitioner; CO 9 Fd Amb Jan 1942–Nov 1943.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XIII: MEDICAL ARRANGEMENTS FOR UNITED STATES FORCES IN NEW ZEALAND

XIII: Medical Arrangements for United States Forces in New Zealand

In June 1942 there came to New Zealand United States troops of 37 Division, United States Army, and 1 Marine Division, United States Marine Corps. In the anxious days of 1942 the Dominion became a base for operations in the South-west Pacific. Thousands of green-uniformed Marines were in camps in the North Island and with them came huge quantities of American war equipment.

The units of 37 Division disembarked at Auckland and went to camps in the area south of Auckland at Manurewa, Papakura, Karaka, Opaheke and Pukekohe. First Marine Division disembarked at Wellington and occupied camps north of Wellington at Kaiwharawhara, Porirua, Titahi Bay, Judgeford, Pauatahanui, Paekakariki and Paraparaumu.

Complete co-ordination was established between the United States Forces and the New Zealand Army from the time of disembarkation onwards. Considerable liaison was carried out by the medical staff of Army Headquarters with the administrative medical officers of the American division, with a view to assisting them in the organisation of their medical arrangements. The United States medical units agreed to assist in the supply of much-needed drugs and other medical requirements.

Jurisdiction over camp areas with regard to the allotment of accommodation and camp organisation belonged exclusively to the American divisions.

The American units were fairly independent. For instance, they had their own medical units within their camps to service them, and in addition established their own hospitals in buildings made available to

them. At Silverstream the buildings nearing completion for a convalescent depot were handed over to them for 6 US Naval Mobile Hospital, while at Hobson Park, Auckland, 4 US Naval Mobile Hospital of 1000 beds was established. Also, 39 General Hospital of the US Army established a 1000-bed hospital at Green Lane, Auckland, and construction was begun on a building for a naval hospital to accommodate 2000 patients at Middlemore, Auckland.

The hospitals were used for the reception of invalids from the South Pacific as well as for cases of sickness from the local American forces.

The policy of the New Zealand Army Medical Service was to co-operate with and assist the United States Medical Services wherever possible. Thus 12 Field Ambulance supplied motor ambulance transport in the Auckland area and 13 Field Ambulance acted similarly in the Wellington area.

For its part the US Navy made itself responsible for the whole of the transport of New Zealand personnel and equipment between New Zealand and the South Pacific bases.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XIV: MILITARY HOSPITAL, PRISONER-OF-WAR CAMP, FEATHERSTON

XIV: Military Hospital, Prisoner-of-war Camp, Featherston

For the Japanese prisoners of war confined to the Featherston camp there was established a fully equipped military general hospital for the diagnosis, treatment and retention of all major and minor medical and surgical cases, whether sick or battle casualties. It was a 40-bed hospital and replaced the camp hospital, where treatment was limited to short-term illnesses. Its equipment and staffing enabled all invalids from the camp to be admitted there, and ended the previous practice of admitting serious cases to the Wellington and Masterton hospitals and to the Anzac Hall, Featherston. The 40-bed hospital was ample for the 800 prisoners held. Provision was made for expansion if the number of prisoners increased.

The hospital admitted its first patients on 18 August 1943. A senior medical officer, on a part-time basis, was in charge. In addition, there was a junior medical officer and thirty-one NCOs and other ranks. There were no members of the NZANS or NZWAAC on the staff. A few prisoners who had been in the Japanese medical corps were selected for work as ward orderlies. Specialists from Wellington visited the hospital.

The camp was under the Officer Commanding, Central Military District. Medical arrangements were therefore under the ADMS, Central Military District. No prisoners of war were repatriated during the war on account of sickness or in exchange for our own prisoners of war, but all except the few who died in New Zealand were repatriated after the armistice.

The treatment accorded to the prisoners of war was in striking contrast to that received by many Allied prisoners at Japanese hands. In the camp the Japanese were accommodated in eight-men huts with slat beds similar to those in which the camp staff lived. Food was always

adequate and the prisoners were always well clothed. Sanitation was of the same standard as that provided in all New Zealand camps and was completely satisfactory. Water was laid on to all washing places and showers were provided in each of the compounds. Special facilities were provided for washing and drying clothes. All prisoners were trained in useful handicrafts, such as carpentry, cabinet-making and concrete block making, and were able to engage freely in games.

Apart from mild epidemics of colds and scabies, it was found that the Japanese suffered from malaria, hookworm, pulmonary tuberculosis and syphilis, with which diseases a number were afflicted before being brought to New Zealand. All prisoners were medically examined upon arrival at the camp and subsequently once a fortnight.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XV: EX-PRISONERS OF WAR FROM FAR EAST – HOSPITAL AND CONVALESCENT TREATMENT IN NEW ZEALAND

XV: Ex-prisoners of War from Far East – Hospital and Convalescent Treatment in New Zealand

In September 1945 the Commander-in-Chief of the British Pacific Fleet requested the New Zealand Government to assist with the provision of hospital facilities for sick prisoners of war and civilian internees from Hong Kong and China and other territories which had been occupied by the Japanese. The Government agreed to receive 400 hospital cases and 500 convalescents. It was arranged that the Health Department through the hospital boards should provide treatment for the hospital cases and that the Army Medical Service should provide accommodation for the convalescents. For the hospital cases Auckland Hospital provided 200 beds, Waikato Hospital 50 beds, Palmerston North Hospital 50 beds, and Hutt Hospital 100 beds. For the convalescent cases the convalescent depots at Raventhorpe and Burnham provided 200 beds each, and the camp hospitals at Papakura and Trentham 150 and 75 respectively.

Records of medical examination and treatment for all service personnel, whether attached to British or Allied forces, were the responsibility of the Army Department, and those for all civilians that of the Social Security Department.

Early in October the Hospital Ship *Tjitjalengka* brought over 300 ex-prisoners of war and internees to Auckland, and the Hospital Ship *Maunganui* brought 362 to Wellington and the South Island. These persons were admitted to hospitals and convalescent depots as arranged, in all cases the actual admissions being proportionately less than originally provided for owing to the lesser number of patients concerned. Of the army medical units, Raventhorpe Convalescent Depot admitted 162 patients, Papakura Camp Hospital 87, Trentham Camp Hospital 25,

and Burnham Convalescent Depot 172. These patients remained in New Zealand from six weeks to four months before moving on to their home countries.

Most of the ex-prisoners of war and internees had been in Japanese prison camps for over three years under very trying conditions, with a diet lacking most of the essential vitamins, and without Red Cross parcels or any mail. The period spent on hospital ships after their release and prior to their arrival in New Zealand had enabled them to put on weight so that their emaciation was less marked. In this connection the *Maunganui* patients were touchingly grateful for what had been done for them.

Most of them on arrival in New Zealand, however, were debilitated and suffering from avitaminosis, chiefly of the beri-beri type. In general the severity of this condition varied inversely with the ability of the prisoners to secure fresh food at their various prison camps. Other symptoms associated with avitaminosis were oedema, neuritis, dyspepsia, gall-bladder disease, anaemia and impaired vision. Appropriate diet to supply vitamin deficiencies and enable the prisoners to regain the capacity to eat a fair meal without discomfort were important features of their convalescence.

Their mental condition was in some ways the greatest rehabilitation problem of these ex-prisoners. They were in a hyper-emotional state and at first restless and aimless in their demeanour. With freedom from irksome regulations they gradually reverted to normal and their behaviour was exemplary.

When they left New Zealand's shores most had recovered from beri-beri, and all were heavier, stronger, more physically fit and healthier in mental outlook and very thankful for the care and attention they had received.

XVI: HOSPITAL SHIPS

XVI: Hospital Ships

After the departure of troops overseas there naturally arose the question of the return of the sick and wounded from the overseas force, the number likely to be returned and the means of transporting them back to New Zealand. In April 1940 the DGMS (Army and Air), Colonel Bowerbank, set out in an appreciation the arrangements to be made for the return of casualties and gave an estimate of their numbers. He advocated the provision of a hospital ship rather than hospital carriers or ambulance transports, and suggested to the Adjutant-General, Colonel Mead, [1] that RMS *Maunganui* would be very suitable for conversion to a hospital ship; he also stated that in the latter half of 1941 two hospital ships would be required. Army Headquarters deferred any definite action until more was known of the location of 2 NZEF and the intensity of the operations in which it was likely to be involved. The GOC 2 NZEF and the DDMS were asked, if possible, to give a forecast of the numbers to be evacuated, and in the meantime inquiries were made from the Australian authorities whether it would be possible to arrange for New Zealanders to be returned in one of their hospital ships. The Australians, who were converting the *Manunda* into a hospital ship at the time, offered their co-operation.

In September 1940 Colonel Bowerbank again emphasised that consideration should be given to the provision of a hospital ship, and difficulties experienced in evacuating invalids from Egypt reinforced the argument.

A draft of ninety-three invalids sent by Indian hospital ship under War Office arrangements left Egypt in August, but after disembarking in India did not reach Wellington until 2 December 1940. The invalids included four tuberculosis and six mental cases. When it was learnt in October that most of these invalids were still in India, a conducting

party from 2 NZEF of a medical officer, a nursing sister and five medical orderlies was sent from Egypt to India in November to be in readiness to proceed to New Zealand with this draft when conditions permitted. The DDMS 2 NZEF was of the opinion that, if this rather unsatisfactory arrangement for evacuation persisted, it would be desirable to send one of the general hospitals or a smaller unit to India.

After this experience proposals for the transhipment of even minor sick at Bombay were not entertained, and slight cases were sent back direct to New Zealand on returning transports throughout the war.

In August 1940 HQ 2 NZEF cabled Army Headquarters that a New Zealand hospital ship would be required by December. In September 2 NZEF was able to arrange with the AIF for invalids to be evacuated on the Australian hospital ship *Manunda*, expected to arrive in the Middle East in October, and stated that a New Zealand hospital ship would not be necessary until February 1941 unless there were heavy casualties before the end of 1940. Action by Army Headquarters was limited to inquiring from the Australian authorities what their arrangements were and whether provision could be made by them for New Zealand casualties. In a cable of 21 October the Prime Minister of Australia told the Prime Minister of New Zealand that plans involved the use of the *Manunda* for severe cases and returning transports for slight cases, and that Australia was prepared to provide for New Zealand casualties as far as Sydney. It was, however, pointed out that while these arrangements might be adequate under existing conditions, an increase in strength of the AIF and its participation in battle might render the provision of a hospital ship by New Zealand highly desirable.

Inquiries were then made from the War Office whether a hospital ship was available for purchase or charter. The War Office indicated in November that it was having difficulty in meeting its own requirements and suggested that New Zealand should provide two hospital ships of 350 beds, or one of 700 beds, to cater for its estimated peak monthly totals of 355 casualties requiring evacuation by hospital ship. The Secretary of

State for Dominion Affairs then suggested that the *Maunganui* appeared suitable for conversion to a hospital ship, and that possibly another suitable ship might be found on the Indian register. The New Zealand Government did not want to take the *Maunganui* off the New Zealand-Australia run for conversion if a suitable ship could be obtained elsewhere, but by the end of the year no substitute could be found. Agreement could not be reached on proposals to take over the *Awatea* or the *Aorangi*.

On 3 January 1941 Brigadier Bowerbank reported to the Prime Minister that the *Maunganui* would be suitable as a hospital ship, and was in fact the only ship available, and that conversion should be proceeded with as a matter of great urgency. The decision was made by the Government, and on 10 January the first of a series of conferences between senior representatives of the Army and other Government departments arranged with officials of the Union Steam Ship Company the details of the conversion, which was put in hand forthwith.

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[1] **Maj-Gen O. H. Mead, CBE, DSO, m.i.d.; born Dunedin, 24 Jan 1892; Regular soldier; 1 NZEF 1914–20 (commanded 1 Bn and 3 (Res) Bn); Commander, Southern Military District, Oct 1940–Feb 1942; GOC Pacific Section, 2 NZEF, Feb–Jul 1942; lost at sea in aircraft accident, 25 Jul 1942.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

PART VI — HOSPITAL SHIPS — HOSPITAL SHIPS

PART VI
HOSPITAL SHIPS

Hospital Ships

I: Hospital Ship Maunganui

THE *Maunganui* was an oil burner 30 years old with a speed of 15 to 16 knots. Her gross register was 7527 tons, her displacement 11,340 tons, her length 430 feet and breadth 55.6 feet. She was larger than both the *Maheno* and *Marama* which were the New Zealand hospital ships of the First World War. Plans were made for some 390 patients to be accommodated in 100 swinging cots, 100 single fixed cots and 95 double (two-tier) fixed cots. (The number of cots ultimately provided was 365 – 22 fracture cots, 84 single cots and the rest two-tier cots.) The conversion involved a good deal of reconstruction, which was carried out by the Wellington Patent Slip Company at a cost of about £50,000. In addition much special equipment was installed. Plans were developed at a series of conferences between DGMS, other officers of Army Headquarters and of other Government departments, and the Union Steam Ship Company, while the Prime Minister, the Rt. Hon. P. Fraser, took a personal interest in the ship. The accommodation in the ship was completely stripped and redesigned in the most serviceable manner.

A complete emergency system of lighting was installed, as well as electric lifts large enough to convey two stretchers from deck to deck, also with emergency power. A huge tank holding 700 tons of fresh water was built in to ensure adequate water supply between ports.

On B Deck was the operating block. This wing contained everything necessary for the equivalent department in a modern hospital. Operating theatre and rooms for sterilising, massage, X-ray, diathermy, and incidental purposes occupied the space where once was the music room, and nearby was a fully-equipped dental surgery.

Further aft on the same deck were recreation rooms for officers, for men and for nurses, while near the stern the plant was installed for a complete laundry, with modern drying rooms attached. C Deck was devoted mainly to wards.

The theatre block consisted of two main units: a plaster room and the theatre proper. Both were exceptionally well appointed when compared with civilian general hospital standards and were equal to the many demands that the *Maunganui*'s varied roles made upon this important section of the surgical side. Not the least of these advantages was the proximity of the X-ray department, which greatly facilitated any procedures requiring the assistance of X-ray screening and radiography. In this connection especially, the orthopaedic work benefited greatly.

The plaster room was fully equipped for the purpose – Hawley table, metal sinks and benches for the making of plaster slabs, X-ray viewing boxes, plaster bandage machine and ample cupboard and shelf space. The room was of generous proportions, enabling it to be used as an emergency theatre.

The operating theatre proper was even larger. A modern operating table with complete accessories and a powerful theatre lamp on an overhead rail, which prevented the lamp swinging to the ship's movement, were notable features of this important section. Adequately sized sterilisers provided hot and cold sterile water. There was even an artificial lung. Numerous extras such as 'angle-poise' lamps were in evidence and a large glass-fronted cupboard provided ample storage for instruments. Properly equipped washbasins were installed. The theatre and the plaster room were finished in a pleasing and restful shade of blue.

Anaesthetic equipment again was more than ample. In addition to the usual bottles and masks for general inhalation anaesthesia, the theatre unit also had a fully equipped McKesson gas machine and an Oxford vaporiser. Three large side rooms opened off the main theatre and plaster room, while adjacent to both was the theatre store-room and a surgeons' change-room equipped with shower and toilet, together with locker facilities. All essential lighting was duplicated on emergency circuits and the whole theatre block was ideally situated forward under the bridge on the promenade deck. The theatre was readily accessible to

the main surgical wards owing to its central position and its proximity to the cot-lift.

One feature in which the *Maunganui* differed from conventional British hospital ship layout was in the siting of the autoclave. This equipment is usually placed in the theatre block, but in the *Maunganui* it was sited some distance aft on the same deck. This was undoubtedly a tremendous advantage in the tropics and prevented overheating of the theatre. The various specialist departments were all grouped together: theatre, laboratory, X-ray, dispensary and physiotherapy. In addition, all the main cot wards with one exception opened off this central area. This centralisation greatly aided the working of the hospital side of the ship, thus saving time and space. The *Maunganui* could embark patients, both walking and cot, rapidly.

The main dining-room was the main ward. Each of the eight wards had a different colour scheme, and where the lighting arrangements were changed, diffused lighting was installed over the beds.

At the extreme stern of the ship and on the open deck was the isolation ward, complete in itself and entirely separate from the remainder.

Not only was the deck space utilised economically in the provision of wards and incidental accommodation, but the holds which once carried cargo and luggage were also converted into quarters of various kinds. Where No. 4 hold used to be, the NCOs and orderlies had their accommodation, while another hold became a messroom for the men.

While the power unit of the vessel itself was not changed, a complete emergency system of lighting was fitted and special conveyors were arranged for the transfer of food from the commissariat to various parts of the ship.

Events in Greece hastened the completion of the conversion of the *Maunganui* to a hospital ship. The Prime Minister urged the supervising committee to day-and-night efforts to expedite her departure, and the

DGMS was given a free hand to purchase all the medical and surgical equipment necessary without having to await the approval of the Purchasing Board. The estimated date for completion had been 15 May, but the ship was got ready by 21 April 1941. This was made possible only by expeditious work in the conversion of the ship and the fortunate procurement of equipment, some of which was not available in New Zealand. In the meantime the British hospital ship *Somersetshire* had transported invalids to New Zealand from the Middle East in March 1941.

The *Maunganui* under the terms of her requisition, was manned and operated by the Union Steam Ship Company of New Zealand Ltd., the deck, engine and providore departments being staffed by the company's officers and the ratings being drawn from the New Zealand maritime unions. The medical personnel were selected by the Director-General of Medical Services and the sisters were appointed from the New Zealand Army Nursing Service by the Matron-in-Chief.

The staff of 104 medical officers, nursing sisters, and orderlies had been assembled at Trentham Military Camp. On 18 and 21 April they embarked and on 22 April 1 NZ HS *Manganui* left Wellington for Suez, with Colonel Murray [1] as OC Troops, Miss Lewis [2] as Matron and Captain Whitfield, Master. The *Maunganui* was not a unit of 2 NZEF and the staffing and equipping of the ship remained a New Zealand Army Medical Headquarters' responsibility throughout the war.

The arrival of the *Maunganui* at Suez on 22 May 1941 was welcomed in 2 NZEF. The DDMS 2 NZEF made the following comment:

The immediate impression on the inspection of the ship was a very pleasing one. My personal expectations, knowing the difficulty of securing fittings in New Zealand, were far exceeded. It has been the unanimous opinion of all officers of the 2 NZEF, from the G.O.C. down, that New Zealand has every reason to be proud of its Hospital Ship.

Evidence of this was obvious from the remarks of a Commander of a

British hospital ship then lying at Suez, who stated that he had commanded three hospital ships in the present war, had visited every hospital ship that had arrived in the Middle East, and that he was definitely of the opinion that the *Maunganui* was the best fitted and finest hospital ship he had seen.

The *Maunganui* was held at Suez until 10 June 1941 in order to take casualties from Greece and Crete. Invalids embarked for the voyage to New Zealand numbered 338. An allocation of forty beds was made to the AIF, in view of the fact that on each voyage of the Australian hospital ship some beds were reserved for New Zealanders. Thus on her first voyage the *Maunganui* took back a full load of patients, including many of the casualties from the Division's first major actions. On the succeeding fourteen voyages she was always a full ship on her homeward run. On her outward trips, too, it was customary to pick up British invalids at Colombo and Bombay and take them to Egypt, where they were transferred to a British hospital ship. Apart from about six weeks in 1942 when she was laid up for overhaul, and a period in 1943 when, because of an accident to one of her propellers, she was taken from North Africa to the United Kingdom for repairs, the *Maunganui* was always on service.

The *Maunganui* alone, however, was not sufficient to bring back to New Zealand all the invalids from the Middle East, especially after campaigns where casualties were heavy. Valuable assistance was rendered by the Australian hospital ship *Wanganella*, which carried many hundreds of New Zealanders, and by the Netherlands hospital ship *Oranje*.

HS *Maunganui* spent much of 1945 with the British Pacific Fleet. On her fifteenth voyage, beginning on 17 March 1945, the ship was diverted at Melbourne from the Middle East to the Pacific, and she went on to Sydney, to Manus Island, to Leyte Island, where the ship functioned as a general hospital under Lieutenant-Colonel F. O. Bennett, with Miss G. L. Thwaites as Matron, from 13 April to 21 May before returning to Wellington. Leaving Wellington on 28 June, the ship again

headed for the Pacific and was the medical centre for the British Pacific Fleet at Manus Island from 7 July to 18 August before moving on to Hong Kong and Formosa with the American Task Force 111 to pick up patients from among the prisoners of war released from the Japanese. Most of these patients were brought back to New Zealand on her return on 8 October.

While at Leyte in the Philippine Islands on the fifteenth voyage the ship admitted 342 patients, most of them from other ships in the Fleet Train which was anchored around the *Maunganui*. The ship was used as a naval auxiliary hospital, half of the fleet being allotted to it and the other half to HS *Oxfordshire*. Patients were discharged to their own ship or, if this had sailed, to a ship which acted as a pool depot. Some serious cases were transferred to ships going to Sydney, and patients were also brought back to Sydney in the hospital ship when she returned.

At Manus on the sixteenth voyage the ship admitted and discharged 242 patients before sailing to Hong Kong, where 111 patients were embarked. Then 108 patients were embarked at Kiirun, Formosa, and later another 156 at Manila on the voyage south again. A few were discharged at Hong Kong, Formosa and Manila, but 362 were brought back to New Zealand where, except for some Australians immediately transferred to a United States hospital ship to go to Sydney, they received hospital and convalescent treatment before being finally repatriated to their own countries, most of them to the United Kingdom by the *Maunganui* on 23 November. The patients embarked at Hong Kong included civilians as well as service patients, and many of those embarked at Formosa were British service personnel who had been taken prisoner at the fall of Singapore; those embarked at Manila included many Australians from a United States hospital and a prisoner-of-war reception depot there. They all speedily put on weight and improved in health on the hospital ship, whose staff was kept busily occupied in their treatment. The *Maunganui* took the ex-prisoners of war to the United Kingdom on her final voyage beginning on 23 November 1945 and ending on 20 March 1946, when she brought back to New Zealand the

last of 2 NZEF invalids from Italy and Egypt. By this time the number of patients carried numbered 5677.

Lessons from Experience

The most important matter in the administration of a hospital ship was stated to be harmony between the Army and the Merchant Navy. This centred on the careful choice of the Master and the OC Troops. On the *Maunganui* successive OsC Troops worked in the utmost harmony with the Master, who showed the army medical staff every consideration. The person next in importance to OC Troops was deemed to be the Adjutant, who also needed to be specially chosen for the position. With a strong Matron, nursing sisters and a small number of voluntary aids were favoured. It was thought, however, that a preponderance of the nursing orderlies should be males, as they have numerous duties other than nursing to carry out – to supply guards, deal with fractious patients, make up stretcher and baggage parties, and assist in emergency precautions aboard ship, including closing the watertight doors, evacuating patients from wards and manning lifeboats. The male establishment of the *Maunganui* (72) was held to be too small for all these purposes, especially as work was frequently heavy and exacting, particularly in tropical waters. The *Maunganui* had more nursing sisters than most British hospital ships and was thought to be the better for it. Even then some officers thought that thirty rather than twenty sisters was desirable, and that there should be two dietitians, three physiotherapists and an occupational therapist. It was agreed that any future decisions on establishments for hospital ships would depend on the size of ship, length of voyage, type of patient and adaptability of staff.

As regards the ship and fittings, it was felt that the *Maunganui* was very suitable for the purpose – she had adequate speed (averaging some 14 knots), stability in heavy seas, interior hospital arrangements well planned, and equipment of a high standard. One standing criticism was the lack of air conditioning, especially in a ship having to go through

the tropics. Owing to a variation in requirements with every voyage it was recommended that a hospital ship should have six or more small rooms whose special purpose could be determined during each voyage, e.g., for plaster room, laboratory, special patients. It was felt that a reasonable amount of deck space for recreation was always necessary, as also was ample dining space for convalescent patients, and swinging cots and a reasonable number of wide fracture beds.

Other points submitted for consideration arising from the *Maunganui*'s experience were: a proper landing stage at least eight feet long at the foot of the gangway for stretcher cases; facilities for landing stretcher cases by winch; adequate laundry facilities; no wards between watertight doors or below the water line; companion-ways as wide as possible; and provision of the best type of life-jacket.

II: 1 Netherlands Military Hospital Ship Oranje

In 1941 the Netherlands Government offered to the Governments of Australia and New Zealand the MV *Oranje*, a ship of 22,000 tons, for use as a hospital ship to convey Australian and New Zealand sick and wounded from the Middle East. This offer was gladly accepted by the two governments.

The ship, which had been completed in Amsterdam only in 1939, was partially converted in Batavia to its new purpose and sailed to Sydney to be fully equipped and completed as a hospital ship. In April 1941 the New Zealand War Cabinet sent the DGMS (Army and Air) and the DQMG to inspect the *Oranje* and discuss the staffing and equipment with Australian officers.

A conference of representatives of the Australian and New Zealand Military Forces, the Minister of the Army for Australia, and the Consul-General of the Netherlands Government was held at Sydney in April 1941.

According to the offer, the Netherlands Government was to be

responsible for the whole of the cost of conversion, including all material, surgical equipment and medical stores, and for the whole of the upkeep whilst the *Oranje* was engaged as a hospital ship. The ship's staff comprised officers and crew of the Netherlands Mercantile Marine, and the medical establishment consisted of medical officers, nurses and other ranks of the Netherlands medical service, and a small supplementary staff of thirty, made up of Australian and New Zealand medical personnel. The Officer Commanding Troops (principal medical officer) and the officer in charge of the medical and surgical divisions were to be Dutch medical men specially selected by the Netherlands Government. It was agreed that the OC Troops would be in complete charge of all medical personnel and responsible for the general conduct, care and treatment of all sick and wounded soldiers from the time of their embarkation on the ship until their disembarkation. The Dutch matron was to be in charge of all female nursing and voluntary aid staff, and responsible to the OC Troops for their conduct and discipline.

Two senior medical officers, one Australian and one a New Zealander, were appointed to the staff by the respective Directors-General of Medical Services to be in charge of the administration and discipline of the members of the staff from their own countries. One was a surgeon and the other a physician, and they were available for consultation and advice on all matters affecting Australian and New Zealand sick and wounded.

The *Oranje* became the world's largest and fastest hospital ship and was able to carry over 600 patients. She left Sydney for Suez on her first voyage as a hospital ship on 2 July 1941 and called at Batavia, where the Netherlands staff embarked. Notification had been made through Stockholm to the German Government that the *Oranje* had sailed, and the Germans had acknowledged receipt of the communication, but word had not been received by the Netherlands Government that the German Government agreed to the use of the *Oranje* as a hospital ship. Consequently there was considerable delay at Aden, but finally authority was granted for the *Oranje* to proceed to Suez, where New Zealand and

Australian sick and wounded were embarked on 6 August. New Zealand invalids carried on this voyage totalled 193, and Wellington was reached on 1 September.

At the outset it was realised that with three different nationalities constituting the staff of the hospital ship there were incipient difficulties of multiple control. Differences in temperament and language added to the problems of administration, as also did differences in procedure and disciplinary control.

At the conclusion of the first voyage, however, the Director-General of Medical Services reported that in all respects the voyage had been a complete success. After the second voyage most of the Dutch medical staff was withdrawn for service in the East Indies as Japan had entered the war, but the Dutch OC Troops and matron remained in control of the medical staff, which comprised mainly Australians and New Zealanders in almost equal proportions and only a few Dutch.

In 1942 the titles of the Australian and New Zealand OsC Troops were changed to liaison officers, which was the original intention. Both these officers then noticed a definite deterioration in their status and authority in the tripartite control. The standing orders of HS *Oranje* had made the liaison officers responsible for the discipline and control of their respective troops, but the OC Troops now showed a tendency to interfere.

In 1943 the Australian Forces were returned from the Middle East to Australia and the Australian medical staff was then withdrawn from the ship, the New Zealand staff increased, and a British medical staff later embarked. The medical staff was then made up of 12 from the Netherlands, 44 from the United Kingdom and 76 from New Zealand.

When the Australian medical staff was withdrawn for service in the Pacific theatre and was replaced by a British staff from the United Kingdom, there were added difficulties in having two disciplinary organisations in the one unit. The British wing was jealous of its

individuality and maintained its company administration as a close corporation. Some of the British were regulars and were jealous of the New Zealanders who held key positions in so many departments of the hospital.

It was realised, even during the New Zealand-Australian regime, that tripartite control was cumbrous and undesirable, leading to jealousies and indecision, and was uneconomical in personnel. When the situation deteriorated under the New Zealand- United Kingdom regime, it was realised that it could not continue indefinitely. New Zealand desired to remove its staff but, at the urgent request of the War Office, consented to allow it to remain, partly in the hope of the ship being made available when required for New Zealand use, and partly because of the shortage of British staff.

Early in 1945 the United Kingdom withdrew the officer in charge of the United Kingdom troops and thereafter the British troops came under the disciplinary control of the New Zealand Army Liaison Officer. This removed one cause of disharmony and greatly improved the internal working of the unit.

Early in 1944 the *Oranje* underwent alterations at Durban whereby her bed accommodation was considerably increased to enable her to take as many as 870 patients. During 1944 and most of 1945 the ship was considered as being completely within the British pool of hospital ships, and operated under the direction of the War Office. Her speed and her versatility of accommodation rendered her a most valuable unit in the pool. On one voyage there might be a preponderance of severe surgical cases, and yet at short notice she could on the next voyage receive a load containing a large proportion of pulmonary tuberculosis or psychiatric cases. During this period she was running mostly between the Mediterrancan ports and the United Kingdom, with an occasional trip down the east coast of Africa to Mombasa and Durban. On the latter trips she carried sick and wounded both ways, repatriating South Africans, often coloured, and returning with British sick who had been evacuated to South Africa during the period the Mediterranean was

closed.

The *Oranje's* speed was a great asset. At cruising speed Gibraltar could be reached in two days from Avonmouth, Naples in four, Port Said in six, and Durban in only sixteen. Very long voyages could be made without calling for fuel or water, as her fuel capacity was large, and all fresh water was made on board by condensation of sea water distilled by the heat of the exhaust gases.

The very speed of the *Oranje*, useful though it was for the evacuation of sick, provided quite a problem for the staff on short voyages. For example, the *Oranje* was sometimes engaged on the Naples-Liverpool run for weeks on end. The voyage took four days, and in that time the orderly room had to work day and night to prepare a complete nominal roll under all the various headings required for disembarkation. Then on arrival disembarkation had to start immediately in groups whose composition was not known to the staff until after the Embarkation Medical Officer came up the gangway. Disembarkation complete, the ship usually turned round for Naples within twenty-four hours, leaving four days for the staff to clean the ship, get the laundry done and prepare for another large load.

The New Zealand Medical Corps staff completed its duty in the *Oranje* on 26 November 1945. In all, the *Oranje* brought back from the Middle East 2542 New Zealand sick and wounded and carried over 15,000 sick and wounded altogether. The hospital ship rendered a sterling service.

In 1945 assistance in the return of invalids to New Zealand was given by several British hospital ships, which had also during the course of the war carried New Zealand battle casualties on the lines of communication on the North African and Palestine coasts and across the Mediterranean from Italy. Altogether, with the *Maunganui* as the mainstay and with the help of the *Oranje* and *Wanganella* and other Allied hospital ships, a creditable record was maintained in the evacuation of sick and wounded from 2 NZEF throughout the war.

[1] **Col D. N. W. Murray, CMG, DSO, m.i.d.; born Auckland, 28 Aug 1876; medical practitioner; South African War, Corporal, RAMC, 1900; 1 NZEF 1914–19: CO Mounted Fd Amb; CO 2 Fd Amb; President, Travelling Medical Board, Anzac Corps, France; ADMS NZ Div, Germany; Commandant, Second Army Medical School, France; CO Military Hospital, Auckland, 1919; OC Tps HS *Maunganui* Apr 1941–Feb 1942; died Auckland, 4 Sep 1945.**

[2] **Matron Miss E. M. Lewis, RRC, m.i.d.; (now Mrs Rudd); born England, 14 Feb 1882; Matron, Blenheim Hospital; served First World War Dec 1915–Jan 1920; Trentham Hosp 1920–21; Matron HS *Maunganui* Apr 1941–Feb 1942, Aug 1942–Nov 1944; Trentham Camp Hosp, 1944–45.**

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: HOSPITAL SHIP MAUNGANUI

I: Hospital Ship Maunganui

THE *Maunganui* was an oil burner 30 years old with a speed of 15 to 16 knots. Her gross register was 7527 tons, her displacement 11,340 tons, her length 430 feet and breadth 55.6 feet. She was larger than both the *Maheno* and *Marama* which were the New Zealand hospital ships of the First World War. Plans were made for some 390 patients to be accommodated in 100 swinging cots, 100 single fixed cots and 95 double (two-tier) fixed cots. (The number of cots ultimately provided was 365 – 22 fracture cots, 84 single cots and the rest two-tier cots.) The conversion involved a good deal of reconstruction, which was carried out by the Wellington Patent Slip Company at a cost of about £50,000. In addition much special equipment was installed. Plans were developed at a series of conferences between DGMS, other officers of Army Headquarters and of other Government departments, and the Union Steam Ship Company, while the Prime Minister, the Rt. Hon. P. Fraser, took a personal interest in the ship. The accommodation in the ship was completely stripped and redesigned in the most serviceable manner.

A complete emergency system of lighting was installed, as well as electric lifts large enough to convey two stretchers from deck to deck, also with emergency power. A huge tank holding 700 tons of fresh water was built in to ensure adequate water supply between ports.

On B Deck was the operating block. This wing contained everything necessary for the equivalent department in a modern hospital. Operating theatre and rooms for sterilising, massage, X-ray, diathermy, and incidental purposes occupied the space where once was the music room, and nearby was a fully-equipped dental surgery.

Further aft on the same deck were recreation rooms for officers, for men and for nurses, while near the stern the plant was installed for a

complete laundry, with modern drying rooms attached. C Deck was devoted mainly to wards.

The theatre block consisted of two main units: a plaster room and the theatre proper. Both were exceptionally well appointed when compared with civilian general hospital standards and were equal to the many demands that the *Maunganui*'s varied roles made upon this important section of the surgical side. Not the least of these advantages was the proximity of the X-ray department, which greatly facilitated any procedures requiring the assistance of X-ray screening and radiography. In this connection especially, the orthopaedic work benefited greatly.

The plaster room was fully equipped for the purpose – Hawley table, metal sinks and benches for the making of plaster slabs, X-ray viewing boxes, plaster bandage machine and ample cupboard and shelf space. The room was of generous proportions, enabling it to be used as an emergency theatre.

The operating theatre proper was even larger. A modern operating table with complete accessories and a powerful theatre lamp on an overhead rail, which prevented the lamp swinging to the ship's movement, were notable features of this important section. Adequately sized sterilisers provided hot and cold sterile water. There was even an artificial lung. Numerous extras such as 'angle-poise' lamps were in evidence and a large glass-fronted cupboard provided ample storage for instruments. Properly equipped washbasins were installed. The theatre and the plaster room were finished in a pleasing and restful shade of blue.

Anaesthetic equipment again was more than ample. In addition to the usual bottles and masks for general inhalation anaesthesia, the theatre unit also had a fully equipped McKesson gas machine and an Oxford vaporiser. Three large side rooms opened off the main theatre and plaster room, while adjacent to both was the theatre store-room and a surgeons' change-room equipped with shower and toilet, together with locker facilities. All essential lighting was duplicated on emergency

circuits and the whole theatre block was ideally situated forward under the bridge on the promenade deck. The theatre was readily accessible to the main surgical wards owing to its central position and its proximity to the cot-lift.

One feature in which the *Maunganui* differed from conventional British hospital ship layout was in the siting of the autoclave. This equipment is usually placed in the theatre block, but in the *Maunganui* it was sited some distance aft on the same deck. This was undoubtedly a tremendous advantage in the tropics and prevented overheating of the theatre. The various specialist departments were all grouped together: theatre, laboratory, X-ray, dispensary and physiotherapy. In addition, all the main cot wards with one exception opened off this central area. This centralisation greatly aided the working of the hospital side of the ship, thus saving time and space. The *Maunganui* could embark patients, both walking and cot, rapidly.

The main dining-room was the main ward. Each of the eight wards had a different colour scheme, and where the lighting arrangements were changed, diffused lighting was installed over the beds.

At the extreme stern of the ship and on the open deck was the isolation ward, complete in itself and entirely separate from the remainder.

Not only was the deck space utilised economically in the provision of wards and incidental accommodation, but the holds which once carried cargo and luggage were also converted into quarters of various kinds. Where No. 4 hold used to be, the NCOs and orderlies had their accommodation, while another hold became a messroom for the men.

While the power unit of the vessel itself was not changed, a complete emergency system of lighting was fitted and special conveyors were arranged for the transfer of food from the commissariat to various parts of the ship.

Events in Greece hastened the completion of the conversion of the

Maunganui to a hospital ship. The Prime Minister urged the supervising committee to day-and-night efforts to expedite her departure, and the DGMS was given a free hand to purchase all the medical and surgical equipment necessary without having to await the approval of the Purchasing Board. The estimated date for completion had been 15 May, but the ship was got ready by 21 April 1941. This was made possible only by expeditious work in the conversion of the ship and the fortunate procurement of equipment, some of which was not available in New Zealand. In the meantime the British hospital ship *Somersetshire* had transported invalids to New Zealand from the Middle East in March 1941.

The *Maunganui* under the terms of her requisition, was manned and operated by the Union Steam Ship Company of New Zealand Ltd., the deck, engine and providore departments being staffed by the company's officers and the ratings being drawn from the New Zealand maritime unions. The medical personnel were selected by the Director-General of Medical Services and the sisters were appointed from the New Zealand Army Nursing Service by the Matron-in-Chief.

The staff of 104 medical officers, nursing sisters, and orderlies had been assembled at Trentham Military Camp. On 18 and 21 April they embarked and on 22 April 1 NZ HS *Manganui* left Wellington for Suez, with Colonel Murray [1] as OC Troops, Miss Lewis [2] as Matron and Captain Whitfield, Master. The *Maunganui* was not a unit of 2 NZEF and the staffing and equipping of the ship remained a New Zealand Army Medical Headquarters' responsibility throughout the war.

The arrival of the *Maunganui* at Suez on 22 May 1941 was welcomed in 2 NZEF. The DDMS 2 NZEF made the following comment:

The immediate impression on the inspection of the ship was a very pleasing one. My personal expectations, knowing the difficulty of securing fittings in New Zealand, were far exceeded. It has been the unanimous opinion of all officers of the 2 NZEF, from the G.O.C. down, that New Zealand has every reason to be proud of its Hospital Ship.

Evidence of this was obvious from the remarks of a Commander of a British hospital ship then lying at Suez, who stated that he had commanded three hospital ships in the present war, had visited every hospital ship that had arrived in the Middle East, and that he was definitely of the opinion that the *Maunganui* was the best fitted and finest hospital ship he had seen.

The *Maunganui* was held at Suez until 10 June 1941 in order to take casualties from Greece and Crete. Invalids embarked for the voyage to New Zealand numbered 338. An allocation of forty beds was made to the AIF, in view of the fact that on each voyage of the Australian hospital ship some beds were reserved for New Zealanders. Thus on her first voyage the *Maunganui* took back a full load of patients, including many of the casualties from the Division's first major actions. On the succeeding fourteen voyages she was always a full ship on her homeward run. On her outward trips, too, it was customary to pick up British invalids at Colombo and Bombay and take them to Egypt, where they were transferred to a British hospital ship. Apart from about six weeks in 1942 when she was laid up for overhaul, and a period in 1943 when, because of an accident to one of her propellers, she was taken from North Africa to the United Kingdom for repairs, the *Maunganui* was always on service.

The *Maunganui* alone, however, was not sufficient to bring back to New Zealand all the invalids from the Middle East, especially after campaigns where casualties were heavy. Valuable assistance was rendered by the Australian hospital ship *Wanganella*, which carried many hundreds of New Zealanders, and by the Netherlands hospital ship *Oranje*.

HS *Maunganui* spent much of 1945 with the British Pacific Fleet. On her fifteenth voyage, beginning on 17 March 1945, the ship was diverted at Melbourne from the Middle East to the Pacific, and she went on to Sydney, to Manus Island, to Leyte Island, where the ship functioned as a general hospital under Lieutenant-Colonel F. O. Bennett,

with Miss G. L. Thwaites as Matron, from 13 April to 21 May before returning to Wellington. Leaving Wellington on 28 June, the ship again headed for the Pacific and was the medical centre for the British Pacific Fleet at Manus Island from 7 July to 18 August before moving on to Hong Kong and Formosa with the American Task Force 111 to pick up patients from among the prisoners of war released from the Japanese. Most of these patients were brought back to New Zealand on her return on 8 October.

While at Leyte in the Philippine Islands on the fifteenth voyage the ship admitted 342 patients, most of them from other ships in the Fleet Train which was anchored around the *Maunganui*. The ship was used as a naval auxiliary hospital, half of the fleet being allotted to it and the other half to HS *Oxfordshire*. Patients were discharged to their own ship or, if this had sailed, to a ship which acted as a pool depot. Some serious cases were transferred to ships going to Sydney, and patients were also brought back to Sydney in the hospital ship when she returned.

At Manus on the sixteenth voyage the ship admitted and discharged 242 patients before sailing to Hong Kong, where 111 patients were embarked. Then 108 patients were embarked at Kiirun, Formosa, and later another 156 at Manila on the voyage south again. A few were discharged at Hong Kong, Formosa and Manila, but 362 were brought back to New Zealand where, except for some Australians immediately transferred to a United States hospital ship to go to Sydney, they received hospital and convalescent treatment before being finally repatriated to their own countries, most of them to the United Kingdom by the *Maunganui* on 23 November. The patients embarked at Hong Kong included civilians as well as service patients, and many of those embarked at Formosa were British service personnel who had been taken prisoner at the fall of Singapore; those embarked at Manila included many Australians from a United States hospital and a prisoner-of-war reception depot there. They all speedily put on weight and improved in health on the hospital ship, whose staff was kept busily occupied in their treatment. The *Maunganui* took the ex-prisoners of war to the United

Kingdom on her final voyage beginning on 23 November 1945 and ending on 20 March 1946, when she brought back to New Zealand the last of 2 NZEF invalids from Italy and Egypt. By this time the number of patients carried numbered 5677.

Lessons from Experience

The most important matter in the administration of a hospital ship was stated to be harmony between the Army and the Merchant Navy. This centred on the careful choice of the Master and the OC Troops. On the *Maunganui* successive OsC Troops worked in the utmost harmony with the Master, who showed the army medical staff every consideration. The person next in importance to OC Troops was deemed to be the Adjutant, who also needed to be specially chosen for the position. With a strong Matron, nursing sisters and a small number of voluntary aids were favoured. It was thought, however, that a preponderance of the nursing orderlies should be males, as they have numerous duties other than nursing to carry out – to supply guards, deal with fractious patients, make up stretcher and baggage parties, and assist in emergency precautions aboard ship, including closing the watertight doors, evacuating patients from wards and manning lifeboats. The male establishment of the *Maunganui* (72) was held to be too small for all these purposes, especially as work was frequently heavy and exacting, particularly in tropical waters. The *Maunganui* had more nursing sisters than most British hospital ships and was thought to be the better for it. Even then some officers thought that thirty rather than twenty sisters was desirable, and that there should be two dietitians, three physiotherapists and an occupational therapist. It was agreed that any future decisions on establishments for hospital ships would depend on the size of ship, length of voyage, type of patient and adaptability of staff.

As regards the ship and fittings, it was felt that the *Maunganui* was very suitable for the purpose – she had adequate speed (averaging some 14 knots), stability in heavy seas, interior hospital arrangements well

planned, and equipment of a high standard. One standing criticism was the lack of air conditioning, especially in a ship having to go through the tropics. Owing to a variation in requirements with every voyage it was recommended that a hospital ship should have six or more small rooms whose special purpose could be determined during each voyage, e.g., for plaster room, laboratory, special patients. It was felt that a reasonable amount of deck space for recreation was always necessary, as also was ample dining space for convalescent patients, and swinging cots and a reasonable number of wide fracture beds.

Other points submitted for consideration arising from the *Maunganui*'s experience were: a proper landing stage at least eight feet long at the foot of the gangway for stretcher cases; facilities for landing stretcher cases by winch; adequate laundry facilities; no wards between watertight doors or below the water line; companion-ways as wide as possible; and provision of the best type of life-jacket.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

II: 1 NETHERLANDS MILITARY HOSPITAL SHIP ORANJE

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In 1941 the Netherlands Government offered to the Governments of Australia and New Zealand the MV *Oranje*, a ship of 22,000 tons, for use as a hospital ship to convey Australian and New Zealand sick and wounded from the Middle East. This offer was gladly accepted by the two governments.

The ship, which had been completed in Amsterdam only in 1939, was partially converted in Batavia to its new purpose and sailed to Sydney to be fully equipped and completed as a hospital ship. In April 1941 the New Zealand War Cabinet sent the DGMS (Army and Air) and the DQMG to inspect the *Oranje* and discuss the staffing and equipment with Australian officers.

A conference of representatives of the Australian and New Zealand Military Forces, the Minister of the Army for Australia, and the Consul-General of the Netherlands Government was held at Sydney in April 1941.

According to the offer, the Netherlands Government was to be responsible for the whole of the cost of conversion, including all material, surgical equipment and medical stores, and for the whole of the upkeep whilst the *Oranje* was engaged as a hospital ship. The ship's staff comprised officers and crew of the Netherlands Mercantile Marine, and the medical establishment consisted of medical officers, nurses and other ranks of the Netherlands medical service, and a small supplementary staff of thirty, made up of Australian and New Zealand medical personnel. The Officer Commanding Troops (principal medical officer) and the officer in charge of the medical and surgical divisions were to be Dutch medical men specially selected by the Netherlands Government. It was agreed that the OC Troops would be in complete

charge of all medical personnel and responsible for the general conduct, care and treatment of all sick and wounded soldiers from the time of their embarkation on the ship until their disembarkation. The Dutch matron was to be in charge of all female nursing and voluntary aid staff, and responsible to the OC Troops for their conduct and discipline.

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The *Oranje* became the world's largest and fastest hospital ship and was able to carry over 600 patients. She left Sydney for Suez on her first voyage as a hospital ship on 2 July 1941 and called at Batavia, where the Netherlands staff embarked. Notification had been made through Stockholm to the German Government that the *Oranje* had sailed, and the Germans had acknowledged receipt of the communication, but word had not been received by the Netherlands Government that the German Government agreed to the use of the *Oranje* as a hospital ship. Consequently there was considerable delay at Aden, but finally authority was granted for the *Oranje* to proceed to Suez, where New Zealand and Australian sick and wounded were embarked on 6 August. New Zealand invalids carried on this voyage totalled 193, and Wellington was reached on 1 September.

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

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CIVIL ADMINISTRATION IN NEW ZEALAND

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

I: NATIONAL MEDICAL COMMITTEE

I: National Medical Committee

THE National Medical Committee came into being as a subcommittee of the Organisation for National Security. The New Zealand Committee of Imperial Defence, formed to ensure the co-ordination of all preparations for any future war, held its first conference in Wellington on 15 November 1933. Besides the armed services, most of the Government departments were represented, as the planning involved a wide range of the State's activities. The name of this committee was in August 1936 changed to the Organisation for National Security.

Among the committees set up by the Committee for Imperial Defence was the Manpower Committee to deal with the problem of manpower in war. Its first meeting was held on 13 June 1934. One of the problems to which this committee turned its attention was the standardisation of medical examinations so that men could be properly classified prior to their utilisation in the armed services. In 1936 the Medical Sub-committee was set up to consider this and other medical matters associated with a possible national emergency. The chairman was the Director-General of Health (Dr M. H. Watt). Other members of the Medical Committee were a representative of the British Medical Association (Sir Donald McGavin), the Director of Army Medical Services and Principal Medical Officer, Air Force (Colonel F. T. Bowerbank – later Major-General), and an inspecting officer of the Department of Health (Mr F. J. Fenton). The first secretary was Captain (later Brigadier) Clifton. [1] With the exception of the secretary, who was succeeded by Major (later Major-General) Stevens [2] and later by Mr Fenton, the personnel remained unchanged from the first meeting in 1936 until the last, held at the end of the war against Japan.

The representation on the committee was wide enough to ensure that all interests directly concerned were represented, but its balance

was spoilt by the presence of a member of the Health Department

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[1] Brig G. H. Clifton, DSO and 2 bars, MC, m.i.d.; Porangahau; born Greenmeadows, 18 Sep 1898; Regular soldier; served North-west Frontier 1919–21 (MC, Waziristan); BM 5 Bde 1940; CRE NZ Div 1940–41; Chief Engineer, 30 Corps, 1941–42; comd 6 Bde Feb-Sep 1942; p.w. 4 Sep 1942; escaped Germany, Mar 1945; Commander, Northern Military District, Mar 1952–Sep 1953.

[2] Maj-Gen W. G. Stevens, CB, CBE; England; AA & QMG, NZ Div, 1940; Officer-in-charge Administration, 2 NZEF, 1940–45; GOC 2 NZEF, Nov 1945–Jul 1946.

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additional to the chairman. The only explanation to account for the additional representative of the Health Department seems to be that he was the medical representative on the Manpower Committee at the time of the appointment of the Medical Sub-committee.

In 1935 the Manpower Committee had obtained Cabinet approval of a report by it on national service, in which was included a recommendation for the setting up throughout the country of civilian medical boards to deal with the medical grading of the male population as a necessary preliminary to national service. The Manpower Committee had also suggested that as this work was on a national scale, responsibility for administering the system should rest with the Department of Health. With the establishment of the Medical Sub-committee the Manpower Committee now drew up terms of reference, which it placed before the Medical Committee, asking it to work along the lines suggested and to prepare a report.

The terms of reference fell under three main headings. The Medical Committee was required, first, to draw up the detailed organisation and composition of the civilian medical boards, second, to draw up a 'Code of Instructions' for members of the boards and also the necessary examination form, and third, to consider the means by which sick and wounded of the fighting forces could be treated in New Zealand

hospitals.

Medical Examinations

The proposal for the use of civilian medical boards at mobilisation was a departure from the old system (included in the 1935 Mobilisation Regulations) which required preliminary examination by a local doctor followed by a second examination after arrival in camp. This cumbersome dual system was promptly abandoned by the Medical Committee at its first meeting and a resolution was passed endorsing the principle of civilian boards for all national medical examinations in time of war, including the voluntary enlistment period, which it was assumed would come before the institution of compulsory national service.

The committee then considered the composition of the boards and decided that each should consist of three members – two general practitioners, an eye, ear, nose and throat specialist where practicable and, in his absence, a third general practitioner – with provision for consultation with specialists, including dentists, in exceptional cases. At a later meeting this was altered and every board included a dentist, who was to examine only those men graded I or II. All members of boards were to sign their full names on the examination record. (*Note:* The appointment of an EENT specialist was not practicable as there were so few in New Zealand, but later an optician was added to each board. The boards eventually comprised only two practitioners and the board papers for recruits were confirmed by the Regional Deputy.)

The question arose of disagreement among members of a board as to grading, and it was agreed that in each of the larger centres a suitable civilian doctor should be appointed to give a final opinion in doubtful cases. The chairman had already been authorised by the committee to choose in each area a senior practitioner to whom he would confide the proposed plan and whose advice he would ask in appointing members of the local boards, so now it was decided that the same senior doctors would naturally make good adjudicators. This was the beginning of the

use of Regional Deputies, who held the key positions in the system of civilian medical boards in its final and working form. Several well-known doctors in the North Island were approached first and, after they had shown their willingness to co-operate, three or four doctors were contacted in the South Island. It was explained to them that officers on the reserve or retired list of the New Zealand Medical Corps should be chosen for boards wherever possible, and that in making their arrangements the needs of the civilian population must always be considered. They then chose personnel for their various boards, names were submitted to the committee and within a short time the lists were finalised.

In the same way dental board members were chosen after Colonel Saunders (Director of Dental Services, Health Department) had asked the advice of leading dentists in different parts of the country.

The medical practitioners who had been approached by the chairman were called Regional Deputies. New Zealand was divided, according partly to distribution of population, partly to geographical factors, and partly to army areas, into twenty-five districts. Districts were then grouped into eleven regions, [1] each under its Regional Deputy, who was responsible for the organisation and general administration of boards in his region. For the time being they were to be left as chairmen of individual boards, although it was realised that once war broke out they would be fully occupied in supervising and co-ordinating the work in their areas. At this stage it was not decided what remuneration should be recommended for the Regional Deputies, but it was agreed that on principle they should not be asked to suffer because they undertook this national work. (The rate eventually recommended to Cabinet and approved by that body in September 1939 was £6 per day for Regional Deputies while acting in that capacity during the first rush of mobilisation, the

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[1] There were ultimately twelve Regional Deputies – at Auckland, Hamilton, Napier, New Plymouth, Wanganui,

Palmerston North, Wellington, Nelson, Christchurch, Timaru, Dunedin and Invercargill. Whangarei also functioned in many ways as an independent area.

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matter to be reviewed after four weeks. The rates of payment for medical board members, including supervisors, was £1 for the first hour or part thereof and 15s. per hour after the first hour of each session. For Regional Deputies a change was made in December 1939 to a salary basis ranging from £250 to £400 per annum, depending on the number of recruits medically examined in each region. The salaries were later increased, the maximum being £600.) The work of the Regional Deputies was held in high regard, and in many cases outstanding work was performed by leading members of the profession, some with long service in the First World War.

Code of Instructions for Medical Boards

While organising the executive side of the boarding system the committee had also been working at the technical side, drawing up a medical examination record form and a code of instructions to be issued to Regional Deputies and members of boards. At the first meeting it was decided to base both of those on the Hill Report, with modifications to suit New Zealand conditions. The Hill Report had been prepared in 1924 and revised in 1933 by a committee of doctors in Great Britain attached to the Committee of Imperial Defence. It was a comprehensive survey of all medical aspects of National Service, written in the light of the experience of 1914–18.

Among other points, it stressed the need for a thorough and well-recorded initial examination on enlistment, so as to save the State the tremendous cost in pensions that would be the result of an inefficient boarding system. The Medical Committee in New Zealand fully realised the vital importance of this and included in the examination record the warning that: 'The greatest care must be taken to enter any defects and/or ailments discovered by the Board whether affecting grading or

not, on the Medical Examination Record. It is essential that an accurate description be recorded in order that if a man is enlisted in the fighting Services any difference on demobilisation may be noted.'

Grade I was at first accepted as laid down in the Hill Report, but was subdivided later to make provision for the temporarily unfit. The definition of Grade I was 'men who attain the full normal standard of health and strength and are capable of enduring physical exertion suitable to their age'; Grade IA was defined 'as for Grade I, but subject to such minor disabilities as can be remedied or adequately compensated by artificial means.'

To avoid any misunderstandings as to the object of boarding it was laid down in the Code of Instructions that this was 'to enable practitioners to classify a man on purely medical grounds, so that the Posting Board can determine the type of National Service for which he is most fitted.' In other words, the board when examining a man was not to take into account the branch of the service for which the man was destined, nor whether he was to be sent overseas or employed on home defence. The Code of Instructions and the examination form were sent in draft form to Regional Deputies for their comments before being finally considered and approved by the committee.

In June 1937 the committee submitted a report to the Manpower Committee on the steps taken to organise the civilian medical boarding system. Copies of the medical examination form and the *Code of Instructions for Members of Medical Boards* were attached, with a strong recommendation for the code to be printed, then circulated by the Department of Health. It was also suggested that in an emergency the existing Medical Sub-committee of the Organisation for National Security should be a National Medical Board, with executive control of the proposed organisation and working through the eleven Regional Deputies.

The report was approved by Cabinet in February 1938. Its acceptance meant that although the plan was still regarded as

precautionary only and the Regional Deputies had been consulted confidentially, in essentials the boarding system was complete and ready to function at the shortest notice. The Code of Instructions was printed as a booklet by the Organisation for National Security in 1938. [1]

Hospitalisation of Sick and Wounded

The third of the main headings of the terms of reference – the question of the hospitalisation of sick and wounded – was dealt with separately. The committee had, in 1936, decided to recommend that, in principle, civil hospital facilities should be used and adapted where necessary for the treatment of the sick and wounded of the fighting forces in war. Details were to be arranged later. The recommendations under this heading were included in a report to Cabinet, which gave its approval on 7 February 1938, at the same time as it approved the civilian medical boarding scheme.

The Medical Committee's section of the report stated:

(*a*) All medical examinations, whether under voluntary enlistment or under national service will, in general, be carried out under arrangements made by the Medical Committee, the executive control resting with the Health Dept.

(b) Treatment of sick and wounded in New Zealand and sick and wounded returned from overseas.

To prevent overlapping the following principles will apply:

(i) All treatment will be arranged by the Health Dept., which is most favourably situated to review the facilities for medical treatment generally, to provide extensions to existing institutions, and to organise specialist treatment on a proper basis.

(ii) Where possible the man will be treated in the institution nearest his home.

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[1] **Further details are included in the section on medical boarding.**

(iii) Until classified by medical boards, and if classified as 'probably fit for further service', men will be retained under defence control. This may necessitate military wings being established in large hospitals, and will, in any case, necessitate some form of military discipline being maintained.

(iv) Men who are classified as 'unfit for further service' will be discharged from the Defence Forces, and again come under the control of the Department of National Service, which will be responsible for further medical treatment ... [and for referring cases for consideration by the Pensions Department].

Nursing Council

At a meeting of the Medical Committee on 15 June 1938 a Nursing Council was formed to advise the committee on all matters pertaining to army and civilian nursing in time of war, and to link up the activities of the Red Cross Society of New Zealand and the Order of St. John as far as the training of Voluntary Aid Detachments, both male and female, was concerned. The council was composed of the Director, Division of Nursing, Health Department (Miss M. I. Lambie), the Matron-in-Chief NZ Army Nursing Service (Miss I. G. Willis) and a representative of matrons of public hospitals (Miss L. M. Banks of Palmerston North).

The Nursing Council first met on 31 August 1938 and drafted a scheme covering the enrolment and organisation of the registered nurses of the Dominion in the event of a national emergency. This scheme was based on the assumption that the public hospital system of New Zealand would be the nucleus for all arrangements. The report was forwarded to the National Medical Committee, amended in some details and adopted and passed on to the Organisation for National Security. The latter body referred the draft scheme to the Army Department, which proceeded to revise the establishment of, and appointments to, the active list of the NZANS.

On the outbreak of war the Nursing Council submitted, on 5 September 1939, a report on the recruitment of nurses for the NZANS. This received ministerial approval a few days later, and this authority

provided the basis for the reorganisation, recruitment and development of the NZANS during the war. [1]

Voluntary Aid Council

Subsidiary to the Nursing Council was the Voluntary Aid Council, to which the Red Cross Society and Order of St. John each nominated

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[1] For fuller details see section on recruitment of NZANS.

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a representative to meet members of the Nursing Council on matters relating to the organisation and training of female voluntary aids. From women trained under the Voluntary Aid Council scheme, as approved by the National Medical Committee in April 1939, were drawn the recruits for the New Zealand Women's War Service Auxiliary, or Women's Army Auxiliary Corps (Medical Division), as it was later called.

For the Voluntary Aid Detachments (male) a representative from the Red Cross Society and another from the Order of St. John, both doctors, were appointed co-opted members of the Medical Committee, and attended by invitation when the committee met to discuss matters concerning male Voluntary Aid Detachments. A joint report was submitted by these co-opted members (Dr A. Gillies of the Red Cross Society and Dr J. K. Elliott of the Order of St. John) and a general discussion was held by the committee on 17 July 1939 regarding the use of male voluntary aids in emergency. It was agreed that if the voluntary societies trained men as urine testers at medical examinations, as clerks to medical boards and in ambulance transport duties (other than Army), they would be rendering a valuable service.

Medical Appreciation for Mobilisation

The Director of Medical Services, Army Department, produced on 31 March 1939 a comprehensive appreciation of what would be required of the medical services on mobilisation, both for home defence forces and

an overseas force. This appreciation was examined by the Medical Committee in April and May 1939 and a number of minor amendments were made. These were mainly concerned with adjusting the medical appreciation to the policy decided on in regard to the use of civilian medical boards and civilian hospitals.

Emergency Hospital Scheme

The emergency hospital organisation for the reception and treatment of sick and wounded to meet the demands of the Army and other forces on home defence was further considered on 17 July 1939. Previously the main consideration had been given to arrangements for the treatment of sick and wounded from overseas, where it was expected that numbers would not be such that their distribution to a number of hospitals would entail any great disorganisation in public hospitals, and therefore no extensive special measures had been considered necessary.

Based on 'Standing Orders for Mobilisation, 1939', a scheme was drawn up for emergency hospital organisation and this was approved by the Medical Committee on 17 July 1939. On its basis a report was made to the Organisation for National Security recommending that negotiations should be commenced with hospital boards so that detailed arrangements could be made in relation to the scheme. [1]

Completion of Original Duties

The Prime Minister asked in July 1939 that the committee should complete its work by 31 July, and at the last meeting before the war, on 17 July, action under the terms of reference originally submitted to the committee was completed. What the committee planned in peacetime was of immense value and was speedily put into effect upon the outbreak of war. War also made imperative the continuance of the functioning of the Medical Committee.

Wartime Functions

On 7 September 1939 the Ministers of Health and Defence gave their approval to control being assumed by the Medical Committee in the matters in which it had been acting in a planning capacity prior to the war, and the committee became in effect the adviser to the Government on all medical matters in connection with the war, apart from those directly under the control of the armed services. No members of the medical profession, other than those then under obligation to the Army, Navy or Air Force, whether in hospitals or private practice, could be accepted for the three services until their respective cases had been reviewed and approval given by the Medical Committee.

At its meeting on 26 September 1939 the Medical Committee expressed its opinion that, in addition to the functions already assumed, it should be given further powers to enable it to be the recommending authority direct to the Minister of Health for utilisation of all medical, nursing and semi-professional personnel, whether civil or institutional, connected with the health of the community. This included doctors, nurses, dentists, radiologists, pathologists, pharmacists and masseurs.

The matter had been raised when the Manpower Committee of the Organisation for National Security was preparing to assume control regarding the issue of permits to nurses desiring to leave New Zealand for service abroad. It was felt that a committee of laymen would be unable to decide an issue relating to professional matters, and in addition the Medical Committee could by making a recommendation direct to the Minister of Health achieve a more prompt decision. The point of these representations was conceded.

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[1] See section on Hospital Administration and Treatment.

In October 1939 a Dental Sub-committee and the Masseurs Advisory Committee were formed. No control was instituted in regard to the enlistment of chemists, but in March 1940 when the Director of Pharmacy pointed out the numbers of pharmacists who had enlisted and

had been called up for military service, sometimes with combatant units, the Medical Committee recommended to the Director of National Service that no further pharmacists be called up unless required as dispensers in the Army Medical Corps.

The Medical Committee's activities came under the National Service Emergency Regulations 1940 (dated 15 June 1940), which provided for a Minister of National Service and a Director of National Service, with the right of delegation of their powers. Under the heading 'Medical Examination and Treatment', Regulation 34 stated:

In the exercise of his functions under these regulations the Minister of Health shall have regard to the recommendations of the National Medical Committee appointed to advise the Government in relation to medical matters arising out of the present war.

Regulations 35 to 41 covered medical examination and treatment. The method of appointment and functioning of the Medical Boards was also covered, provision being made for appointment of chairmen of the boards and for any disputed cases to be referred to the Regional Deputy.

The Medical Committee thus became in name the National Medical Committee with a continuance of its functions as previously.

Matters dealt with During War

The principal matters dealt with during the war by the committee were:

(*a*) Measures for the orderly recruitment of doctors, dentists, masseurs, pharmacists, opticians, technicians, etc., so as to maintain a reasonable balance between the needs of the armed forces and the civilian community.

(*b*) Arrangements for interchange of service between medical practitioners and medical officers serving with the forces.

(*c*) Applications for return of medical officers to civilian practice.

(Control of practising locations of medical practitioners.

(d)

(e) Utilisation of services of medical students in connection with the war effort.

(f) Organisation of medical boarding and revision of the Code of Instructions.

(g) Advice in connection with the provision of hospitals and convalescent hospitals for the reception of sick and wounded members of the armed forces.

(h) Advice in connection with the remedial treatment of servicemen.

(i) Advice to the Internal Affairs Department in connection with applications from doctors and nurses for permits to leave New Zealand.

(j) Consideration of rehabilitation and post-graduate courses for medical officers on demobilisation.

Most of these matters are dealt with in detail in succeeding sections. The National Medical Committee held regular meetings throughout the war until 21 September 1945, when the final meeting (the 78th) was held. On that date the National Medical Committee, and its sub-committees, was dissolved. Any remaining functions in connection with continuing demobilisation were then administered by the Health Department.

When the committee disbanded the Prime Minister placed on record the Government's appreciation of the excellent service given by it. He stated that the Government realised that the task allotted to the National Medical Committee was not easy and that, as the war advanced and the country's commitments became greater, it became a task of no small magnitude to see that the medical needs of the civilian population, on the one hand, and those of the armed forces, on the other, were both adequately met. The committee's members were individually thanked for the able part they had played in its work.

Review

In reviewing the work of the National Medical Committee it is rather remarkable that a body so loosely constituted and theoretically without

any executive power was able to accomplish so much, especially as regards the control of medical practitioners and the release of medical officers to the forces. In this latter matter the committee in effect acted almost with executive power, subject to approval by the Minister of Health, although the matter was not within the original terms of reference of the committee. The approval of the Minister of Health on 14 September 1939 to a proposal of the Director-General of Health was interpreted as 'giving power to the Medical Committee that no medical men other than those under military obligation at the above date are to be accepted for service until their case is reviewed.' [1] The joint approval of the

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[1] Memorandum by Director-General of Health to Secretary, Organisation for National Security, 14 March 1940.

Ministers of Health and Defence on 7 September 1939 to certain proposals 'whereby control was to be assumed by the Medical Committee set up to advise the Government on all medical matters in connection with war' seems to have been the working basis for the evolution of its wartime functions.

The only statutory authority for the committee seems to have been in the National Service Emergency Regulations, whereby the Minister of Health was required under the section 'Medical Examination and Treatment' to 'have regard to the recommendations of the National Medical Committee appointed to advise the Government in relation to medical matters arising out of the present war'. The members of the committee themselves were not clear at first on their lack of power. On 12 December 1940 the Director-General of Medical Services wrote: 'The Director-General of Health, when replying to a letter from Sir Donald McGavin, stated that the National Medical Committee was wholly advisory and had no powers whatsoever: that all powers were vested in the Minister of Health and that as his representative and to prevent future misunderstanding he, the Director-General of Health, would sign

all decisions or recommendations considered by the National Medical Committee, not as Chairman of that Committee but as Director-General of Health.' Continuing, the Director-General of Medical Services pointed out that the requirements of the armed forces in war had to take precedence over civilian needs, but that progressive difficulty was being experienced in obtaining suitable medical officers for whole-time service with the forces.

The Medical Committee had first operated under the manpower committee of the Organisation for National Security. The functions of the latter body were largely taken over by the National Service Department under the National Service Emergency Regulations 1940. The Regional Deputies who were in charge of medical examinations should logically have come under the National Service Department, and the National Medical Committee should have had some executive or advisory function to the National Service Department. The Medical Committee visualised such a position when it suggested in its report in 1937 that in a national emergency it would function as a National Medical Board having executive control of the organisation of medical boards, directed by the Department of National Service and working through the Regional Deputies. The committee considered questions that came within the provinces of the Minister of Defence, the Minister of Health and the Minister of National Service, but in the normal course the result of their deliberations was made known to the Minister of Health only. Cabinet approval seems to have been confined to the approval on 7 February 1938 of the constitution of the membership of the committee and the report under its terms of reference.

Sir Donald McGavin stated after the committee had concluded its valuable functions that questions on which members differed were referred to the Health or Army Departments (whichever the particular question involved) by the Director-General of Health or the Director-General of Medical Services respectively, and added: 'it is clear that when a debatable question is submitted to the Minister of a Department by an officer of that Department a less balanced view will be taken than

when all sides of the question are represented to an impartial body by the whole committee. I suggest that it would have been much better if the whole committee had met the Ministers concerned (or the Cabinet if the question be of sufficient importance) and members put their individual views before them. I am sure that a few questions would have been more wisely decided had that been done.' [1]

The representation on the National Medical Committee was wide enough to ensure that all interests directly concerned were represented and that experienced advice was available to the Government. The Department of Health had the major representation and the committee functioned as an advisory body to the Minister of Health. Although the committee had little statutory backing it was consulted very freely by the Government and its recommendations were very seldom rejected or departed from. The Director-General of Health considered that the committee proved very flexible and dealt with a multiplicity of matters with a minimum of 'red tape' and delay. Its strength lay in its small size and the simplicity of its organisation.

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[1] It is interesting to note that under the Military Training Act 1949 a Medical Committee was appointed to advise the Minister of Defence in relation to medical examinations, the appointment of regional medical officers and appointment of medical boards. The committee consists of the Directors of Medical Services of the Navy, Army and Air Force, a representative of the British Medical Association, the Director-General of Health or a deputy recommended by the Minister of Health, and the Director of Employment.

II: MEDICAL BOARDING

II: Medical Boarding

In the 1914–18 War medical examination of recruits was first carried out by the Army Territorial Forces through RMOs of the four military districts. New Zealand Medical Corps officers on the active or reserve list were selected as examiners in the main centres, but in the outlying districts civilian practitioners were utilised, and conditions there were not so satisfactory. When the men entered camp the medical staff there revised the classification and rejected normally from 1 to 2 per cent of the recruits. This naturally caused trouble and distress, and at one time the standards were lowered, with the natural result that complaints came from overseas and the standard had to be raised again.

Later, full-time recruiting medical boards were formed in each military district, with certain special medical travelling boards to deal with appeals against the decision of the ordinary boards. The rejection rate in the latter part of the war was nearly 60 per cent.

In February 1938 Cabinet approved a report by the Manpower Committee of the Organisation for National Security in which was included the following: 'All medical examinations, whether under voluntary enlistment or under national service will, in general, be carried out under arrangements made by the Medical Committee, the executive control resting with the Health Department.'

Thus the Medical Committee was given full authority to proceed with the work of medical boarding when the need arose. One thousand copies of the Code of Instructions for members of civilian medical boards were printed in 1938. The code covered most of the technicalities that would be involved.

The submission by the Director of Medical Services (Army) to the

Medical Committee on 31 March 1939 of a comprehensive medical appreciation of problems associated with mobilisation enabled further details of the organisation for medical boarding to be finalised. Thus, by 31 July 1939 the machinery was ready to swing into action at short notice.

As described in the preceding section, the Medical Committee's organisation consisted of eleven Regional Deputies, outstanding civilian medical practitioners who were responsible directly to the Medical Committee for medical boarding in their regions. There were 253 medical boards, each comprising two doctors and one dentist, chosen to meet the requirements and places of mobilisation of the Army. (In 1940 the dental member was omitted and men were graded without reference to their gums or teeth.) With the number of boards arranged and sessions of four hours each, it was expected to complete the examinations in four days for the *39,900* men the Army proposed to mobilise for home defence. (*Note:* In actual experience it was found that army mobilisation did not achieve any such intensity as mooted in pre-war proposals. Up to 9 December 1939 nine of the eleven regions had been called upon to examine only 15,796 recruits. Figures were not available for the other two regions but they probably did not exceed 1000 each.)

The respective spheres of control between the Health Department and the Army Department were denned as follows:

Health Department Responsibility

(*a*) On request to provide all the necessary Boards and supervisors to medically examine recruits and/or existing personnel of the Army in accordance primarily with Code of Instructions for Medical Boards and any Army instructions relevant thereto.

(*b*) To ensure that Regional Deputies co-operate (i) with the requirements of the officer commanding the Army district as regards arrangements made and (ii) in the closest co-ordination with the Assistant Directors of Medical and Dental Services and Area officers, excepting that the Army recognise the Medical Committee of the Organisation of

National Security and the Regional Deputies as solely responsible for the control of medical boards, the actual medical examination and the compilation of Army Form 355 (Record of Medical Board) and Army Form 360 (Record of Dental Examination) for each person examined.

(*c*) To provide each Board member with a copy of O.N.S. 92 (Code of Instructions for Medical Boards) and Appendix 24 to Army Standing Orders for Mobilisation.

(*d*) To arrange that in the event of disagreement regarding boarding and grading the Regional Deputy shall decide the position.

(*e*) To ensure that if practicable no Board shall be expected to be present at more than two sessions daily.

(*f*) Where a specialist examination is required in addition to the initial examination the Regional Deputy will make such arrangements as may be necessary.

(*g*) To arrange Medical Boards for examination of Army personnel passing through convalescent depots.

Army Department's Responsibility

(*a*) Assistant Directors of Medical and Dental Services and Area Officers to co-operate closely with Regional Deputies in their respective districts regarding the application of Appendix 24 of Standing Orders for Mobilisation (Instructions for Conduct of Medical Examinations).

(*b*) To be responsible for the selection of examination buildings, the fitting of same, and the supply of all necessary equipment therefor as described in the Medical Appreciation dated 31 March 1939.

(*c*) To provide all clerical staff, urine testers, dental records staff, examination forms and stationery.

(*d*) If called upon and considered necessary by the Regional Deputy to provide him with some proportion of Medical Officers on the Active List of the Army for Medical Board purposes.

Specialists

Each medical board had a system adapted to its own conditions for obtaining consultant advice. Specialists could be engaged to attend at the board room at times arranged in consultation with the chairman, and men whose cases required further investigation would assemble at those times. The shortage of specialists throughout New Zealand led to

much delay in finalising the grading of doubtful cases. Even when consultants could attend there was a lack of properly equipped rooms for their use. In Auckland there was, owing to local conditions, the only complete boarding unit with specialists regularly available. In regard to visual examination, eye specialists were sometimes included on medical boards, or else the system was adopted of referring doubtful cases for specialist opinion to the eye departments of public hospitals. Regional Deputies had the authority to obtain the services of an optician to assist with medical boards if they thought fit. (On 20 November 1940 the National Medical Committee agreed that opticians be attached to all medical boards and this change became effective in 1941.)

Functioning at Commencement of War

At the meeting of the Medical Committee on 24 September 1939 it was stated that reports received and inspections made indicated that the organisation for medical boarding was carried into effect immediately and efficiently following the outbreak of war. The Regional Deputies, who were part-time officers, were asked at that stage to report in regard to the Code of Instructions, the forms in use, and whether there was need to improve the literature or the organisation. The reports were generally satisfactory as regards accommodation and staff, but a number of suggestions were made for the improvement of the Code of Instructions, the Army Instructions for conduct of medical examinations, and Army Form 355 (Record of Medical Board). When the suggested improvements were approved, amendments to instructions were made accordingly. The Code of Instructions was subject to repeated amendments, which led to a revised edition being printed in February 1942.

The introduction of compulsory military service under the National Service Emergency Regulations 1940 (dated 18 June 1940) brought about certain alterations in official policy and imposed additional responsibilities on Regional Deputies and medical boards. It was therefore necessary to supplement the original instructions, prepared as

they were primarily for initial examinations under a system of voluntary recruitment.

Under the National Service Emergency Regulations 1940, Regulation *35 et seq*, the responsibility for medical boarding was transferred from the National Medical Committee to the Minister of Health. The Regional Deputies were therefore, in fact, deputies for the Minister of Health, to whom the National Medical Committee was, strictly speaking, only an advisory body. In effect, there was little alteration in the administrative control that had previously been exercised.

Medical Grading

In the Code of Instructions for Medical Boards four grades were laid down under which men were to be classified according to their physical and mental condition. These were later (on 2 December 1940) co-ordinated with the Army Department's classification of recruits according to fitness for the various types of military service, as follows:

Grade I: **Men who attain the full normal standard of health and strength and are capable of enduring physical exertion suitable to their age.**

Classification: **Fit for active service in any part of the world.**

Grade IA: **Men suitable for Grade I, but who have been degraded for minor disabilities easily and quickly remedied.**

Grade II: **Those who, while suffering from disabilities disqualifying them for Grade I, do not suffer from progressive organic disease, have fair hearing and vision, are of moderate muscular development, and are able to undergo a considerable amount of physical exertion not involving severe strain.**

Classification: **Fit for active service in New Zealand.**

Grade III: **Those who present such marked physical disabilities or**

evidence of past disease that they are not fit for the amount of exertion required for Grade II; those who suffer from any of the diseases or disabilities specifically mentioned in the detailed instructions as indications for classification in Grade III.

Classification: **Fit only for clerical work or other sedentary military occupations in New Zealand.**

Grade IV: **Those who suffer from progressive organic disease or are for other reasons permanently incapable of the kind or degree of exertion required for Grade III.**

Classification: **Permanently unfit for any military service whatever.**

Note: **In the revised Code of Instructions published in 1942 slight amendments were made in the classifications, more particularly relating to ability to serve in New Zealand in a state of emergency. In June 1943 2 NZEF in the Middle East found it necessary to alter the terminology for medical grading, as what was originally drawn up for men being received into the Army in New Zealand could not be practically applied to an Expeditionary Force overseas.**

Tuberculosis: X-Ray Examinations of Chest

In September 1939 the Director-General of Health and the Director-General of Medical Services (Army and Air), after representations by the latter, took steps towards the elimination of mentally unfit recruits and those suffering from active tuberculosis. In regard to the latter condition, Cabinet approved an X-ray examination of all military recruits and authorised an X-ray unit to be purchased and installed and staffed in each of the three principal military camps.

The X-ray apparatus could not be purchased and set up in the three mobilisation camps in time to make chest X-rays of the First Echelon, and only a few of the Second Echelon were X-rayed before going overseas. Fortunately the men of the Maori Battalion were given chest X-rays at Palmerston North before they left with the Second Echelon,

and a number of recruits were rejected, thus eliminating many foci of infection. As a survey by Dr D. Macdonald Wilson has shown, the incidence of pulmonary tuberculosis in the First and Second Echelons later was considerably higher than the average for the Army overseas.

It became obvious that it was desirable that recruits should be X-rayed before they left home, sold up businesses, etc., and entered camp, only perhaps to be rejected at that stage. It was accepted that the X-ray of the chest was really part of the initial medical examination, and a responsibility of the Health Department under the civilian medical board system, which was in fact acknowledged by the stipulation of the Department in December 1939 that the reading and interpretation of the X-ray films be undertaken by the radiologists of the Auckland, Wellington and Christchurch Hospitals.

In April 1940, therefore, it was decided that all recruits should undergo X-ray examination of the chest before they were despatched to camp. Arrangements were made by the Department of Health with the hospital boards concerned, for the X-ray examinations to be carried out at thirty-four hospitals and the interpretation of the films to be made at the eleven largest hospitals. Thenceforth an X-ray examination of the chest was regarded as a routine for all recruits classified fit for active service. Army area officers made the best possible arrangements with the medical superintendents of hospitals for the X-raying, and every endeavour was made to have men who had to travel some distance for medical examination X-rayed immediately after the medical examination, so as to avoid a second journey with consequent expense and loss of time. Shortage of radiologists competent to read X-ray plates was a difficulty, apart from general administrative problems of check and control. Also the centralisation which caused all communications to pass through the Health Department to the hospital boards was an aggravating factor.

If any abnormality was found which the radiologist considered required further examination, the recruit was examined by a specialist

chest board comprising a chest specialist and radiologist. In some larger centres the radiologist and chest specialist were too busy to act together. In the circumstances the Regional Deputies had to do the best they could.

Regional Deputies were driven to use on specialist chest boards medical practitioners who were not tuberculosis specialists. It was agreed that Grade I men from outlying districts where X-ray was impossible would be X-rayed on entry into camp. Especially in the peak mobilisation period of 1942–43, these totalled many hundreds and there was often delay in arranging X-rays, or on occasions they were overlooked altogether.

A return compiled by the Director-General of Medical Services for the period January 1941 to 31 October 1942 showed the numbers X-rayed in camp were 2223 at Papakura, 1941 at Waiouru, 2090 at Trentham and 1835 at Burnham. For those who were discovered to be suffering from tuberculosis it was found that the time between the recruit's arrival in camp and his discharge from the forces after X-ray, specialist, and civilian medical board examination had been carried out varied from one month to three months.

A number of men who were in camp for only a few months became eligible for war pensions for 'pulmonary tuberculosis aggravated by service'. An obvious conclusion is that in any circumstances all men should be X-rayed before going into camp. In any future emergency the hospitals would be much more able to cope with the demands, as hospitals everywhere now have adequate apparatus for chest X-ray, with trained technicians and, in many cases, tuberculosis officers.

With the object of preventing the enlistment of men known to have tuberculosis, the army authorities arranged that lists of all enlistments for 2 NZEF be supplied to the Health Department. The names were then checked against the tuberculosis registers kept by the Health Department, and appropriate action taken to exclude from service any who were medically unfit on account of this disease. Throughout the war

Medical Officers of Health checked lists of recruits to detect the names of those who were, or had been, on tuberculosis registers. Such recruits were specially examined.

It was the practice to forward to Medical Officers of Health the names of recruits rejected on account of pulmonary tuberculosis, and of the men who were discharged from mobilisation camps for this disability, in order that contact might be kept with them and, where necessary, treatment arranged.

The Elimination of the Mentally Unfit

Although the Director-General of Mental Hospitals had drawn attention to the need in a letter dated 7 September 1939, it was not until some months later that arrangements were made to furnish the Mental Hospitals Department with rolls of those called up for service so that checks could be made for any known mental defectives. By that time some known defectives had gone overseas, and even after that occasional cases continued to be accepted by the Army. Some defectives, of course, had never been in any mental hospital and were therefore not known to the Department. Psychiatrists were not employed in the selection of recruits in New Zealand. They functioned only in the treatment of cases referred to them from the Army and in the medical boarding of psychotic and psychoneurotic cases arriving in New Zealand from overseas.

During the war repeated observations were made in 2 NZEF on the relatively large numbers of men breaking down overseas, some shortly after their arrival in the Middle East. It was realised that the cause lay in the inherent constitutional instability of the individual and not in any battle strain thrown upon him. The large majority of the cases showed symptoms at the Base with no divisional service at all. The problem is a difficult one and opinions differ as to the best ways of dealing with it. In Great Britain the members of medical boards were required to ask every man a few simple questions designed to bring to light any past or present symptoms of nervous instability. Intelligence

tests were also introduced. Psychiatrists were employed in the officers' selection boards but were used to examine only the subnormal group of the ordinary recruits, partly because the large numbers made it impossible for the psychiatrists to examine all recruits.

The utilisation of psychiatrists for the examination of all recruits in New Zealand has been suggested by some, but others have held that this would be a dangerous procedure and might bring in its own train greater evils than we had under the system adopted. The wartime Director-General of Mental Hospitals was against the examination of all recruits by a psychiatrist, stating that this would be wasteful and unnecessary and would tend to make the recruits psychiatry conscious, with undesirable results. Many army medical officers were afraid that if psychiatrists were turned loose amongst the recruits they might decimate the Army. The Director-General of Mental Hospitals considered that academic psychiatry had to be tempered with common sense and experience.

All were agreed that psychiatrists should be readily available for consultation by the medical boards, that the members of the boards should be familiar with psychiatric and psychoneurotic conditions, and that they should pay particular attention to the elimination of the mentally unfit. Perhaps the adoption of the Pulheems system of classification, with special stress on personality weaknesses, might prove to be the best method of selection. Inquiries as to the school and occupational history of the recruit, if carried out intelligently at the time of his medical examination, would be of great assistance.

Special Medical Board

At the meeting of the National Medical Committee on 21 October 1940 the chairman reported that by arrangement with the Director of National Service, and pursuant to Regulation 39 (3) of the National Service Emergency Regulations 1940, a Special Medical Board had been set up by the Minister of Health in Wellington to review the cases of

voluntary recruits rejected on initial medical examination, and of volunteers subsequently discharged from the forces as permanently unfit for service prior to the coming into force of the National Service Emergency Regulations.

It was necessary that these cases should be reviewed, and their grading confirmed or amended by a medical board constituted under the National Service Emergency Regulations, before the Director of National Service could transfer the registration cards of permanently unfit men to the Third Division (civil) and exclude their names from subsequent ballots.

This Special Medical Board of three members also dealt with cases of reservists drawn in the ballots who were suffering from, or who were known to have suffered from, pulmonary tuberculosis or mental disease, in order to have their names excluded, where necessary, from subsequent ballots.

Standard of Vision

The visual examinations of recruits for the Army in the early days of the war were in many cases unsatisfactory. This was due to a variety of causes. The taking and recording of visual acuity requires special training and experience not generally possessed by the average general practitioner. Standard test types and a standard illumination of such test types are necessary to ensure that visual standards are the same in all parts of the country. Some medical boards co-opted the services of an optician or oculist, but most carried out the tests themselves. In the great majority of cases recruiting medical officers were overworked, and in some cases the testing of visual acuity was left to medical orderlies. It was doubtful whether there were sufficient opticians to serve all medical boards at the outset had it been decided to use them throughout the country.

In these circumstances it would have been desirable for the Army to carry out its own visual examination once a recruit had entered camp.

This was done for those who used or required glasses and had to be supplied with army spectacles, but there was no general rule for the testing of all recruits. As a result of the initial wrong recording of visual acuity a number of men were sent overseas in the wrong grading as far as their visual acuity was concerned.

Following an offer from the Institute of Opticians of New Zealand to make available the service of its members to medical boards for the purpose of assisting in the determination of the visual condition of recruits, the National Medical Committee on 26 November 1940 approved a scheme whereby opticians were attached to medical boards to make more complete visual examinations. This system became effective in February 1941 except as regards certain country districts. The advent of the Army Optician Service in 1942 resulted in a greater check on visual examinations being made in camps.

In actual experience, it was found overseas that men with slightly defective vision could be usefully employed when graded, and it is likely that many cases with vision sufficiently defective to change their grading were never discovered and that such men were not hampered in the course of their normal duty. In any case, eyes could be tested overseas and spectacles supplied for those whose vision was correctable.

Unfit Men Reporting to Mobilisation Camps

As early as October 1939 the Army Department reported cases of men found unfit on admission to camp. The Medical Committee resolved that Regional Deputies in the districts in which the unfit men were examined should be informed that the committee viewed the matter seriously and was perturbed that men with such a degree of unfitness could get into camp. The Regional Deputies were asked to bring the individual cases to the notice of board members concerned and ask for an explanation, if any, and a report.

The problem of unfit men reaching mobilisation camps, and even proceeding overseas, was a perennial one, and, in spite of special

measures adopted, was never wholly overcome. At the end of 1940 the DDMS 2 NZEF made a survey of 273 men who had been classified as unfit for service in the field. At the same time a report was received from the Second Echelon in the United Kingdom that between eighty and ninety men had been found unfit for front-line service, mostly because of pre-enlistment disabilities. These reports caused some concern at Army Headquarters in New Zealand. It was realised that the prevention of these men going overseas was largely in the hands of the civilian medical boards that examined and graded them; but medical officers in mobilisation camps were enjoined to make close personal observations and co-ordinate with company and platoon officers to strive to eliminate some of those soldiers likely to break down on active service.

Complaints from overseas still continued to occur, however, as it was repeatedly found that among reinforcements there were a number who fairly obviously should not have been allowed to go overseas, and a proportion of these were sent back to New Zealand by the first available ship. This was in spite of a measure of elimination in New Zealand, as available figures show that 714 men had been reboarded in mobilisation camps at 30 April 1940, the total reaching 4853 at January 1942.

There was a case for better liaison between camp medical officers, the Army Department, Health Department, and civilian medical boards regarding the types of disabilities so often the cause of rejection. Reports from overseas, however, were widely circulated and had an immediate effect.

It is interesting to note that Australia and Canada had to face the same problem, and the principal causes for rejection of sample groups of 839 men from the Canadian Expeditionary Force, of 900 men from the Australian Imperial Force, and of 1000 men from the New Zealand Expeditionary Force showed a remarkable similarity.

Reboarding of Unfit Enlisted Men

Although it was at first decided (in October 1939) that the boarding

of unfit men in mobilisation camps was the responsibility of the Army, a change was made by the Medical Committee on 3 November 1939, at the request of the Army Department. It was agreed that such medical examinations would be carried out by civilian medical boards, which had been responsible for passing them in the first place. The procedure adopted was that when such boards were considered necessary the Senior Medical Officer of the camp notified the Director-General of Medical Services, who in turn sent all relevant papers to the Department of Health, together with a nominal roll showing names of board members responsible for the first boarding. The boards were then constituted by the Health Department and action taken with regard to the final notification to the Army Department. The unfit men were sent from the camps to the medical board centres for examination.

In March 1942 it was decided that, owing to the state of emergency in New Zealand and the demands on the services of medical practitioners by the civilian population and for medical boards, in future all medical boarding of soldiers in camps would be carried out wherever possible by army medical officers. The findings of the army medical boards were subject to the approval of civilian Regional Deputies until July 1942. In the meantime it was pointed out that procedure could be further speeded up by appointing senior army medical officers as Regional Deputies. In July 1942 the Minister of Health approved the appointment as Regional Deputies of the DGMS (Army and Air) and his three chief assistants at Army Headquarters, the ADMS (Air) and his deputy, and the ADsMS of military districts and divisions.

Specific notes were issued by the DGMS for the guidance of NZMC medical boards, which functioned satisfactorily. This amended system could well have operated from the start of the war, there being no particular advantage in medical boarding being conducted purely through civilian medical boards when the Army Department had a staff of medical officers of standing well able to undertake these responsibilities.

The Employment of Graded Men

The problem of the utilisation of men rejected from the services on account of low physical grading was one of considerable magnitude when it is realised that, in the 355,000 men medically examined during the war for service with the forces, there were approximately 150,000 who were not immediately fit for classification as Grade I.

Remedial treatment was a means of making a small percentage fit for active service, and a proportion of men in Grades II and III were used in home defence and Pacific island garrison duty. Those who remained in civilian life were subject to a measure of manpower direction through which, in spite of their disabilities, they contributed less directly to the war effort. Nevertheless there were many who, because of minor specific disabilities, were exempted from service in the forces, when in actual fact their all-round fitness was undisputably higher than that of many of the less vigorous who were accepted for service.

The liability of the State for pensions payments for aggravation of disabilities in men who were not perfectly fit had doubtless an important influence in the matter. To some extent this was justifiable, but it is felt that with a thorough medical examination of men before attestation, and the ability of the armed forces, especially within New Zealand, to employ efficiently men with specific minor disabilities, a more selective procedure of grading and posting would enable manpower to be utilised to its full strength and provide a greater equality of sacrifice.

In 1943 the National Service Department made a survey of the results of the medical examinations of 105,311 men, aged 18 to 45 years, who constituted the great majority of all men so examined during that period. Of the total number examined, 42,022 were rejected for active overseas service and placed in Grades II, III or IV. The figures showed a marked increase of unfitness with increasing age, especially as regards disorders of the bones and organs of locomotion and cardio-vascular disease. The causes of rejection were analysed according to

particular disabilities as set out in the table in Appendix A. [1]

In the British Army a system of categorisation was introduced in 1940 in order that the manpower of the Army might be utilised to the best advantage. Army Council Instructions on the subject were issued in April and November 1940 and again in 1943. The 'category' differed from the 'grade' in that it was based on the army standard as regards physique and capabilities and the locality in which men would normally be employed. For instance a Category B2 man who had defects of locomotion and only a moderate degree of disability was acceptable for lines of communication, base or garrison service at home or overseas.

To conserve manpower for the armed forces the Director-General of Medical Services suggested in February 1941 that all men in Grades II and III be re-examined and placed in the appropriate category, but this was not carried out. Again in July 1943 he recommended that medical classification by category be adopted. For this purpose he had modified some sections of the British scheme to conform to New Zealand requirements and regulations and simplified it to some extent. The matter was given consideration by the Adjutant-General who, in March 1945, asked for a recommendation as to the Pulheems system (British modification) and the system of medical categories for other ranks as issued by the War Office in 1943. It was recommended that the more suitable would be a modified and simpler form of the latter system. However, nothing was done before the end of the war.

The following is a list of disabilities which, under the system of grading operative in New Zealand, placed men in Grades II and III, but which under a system of categorisation would not have precluded them from overseas service: Practically all visual defects; symptom-less flat feet; minor foot disabilities; minor degrees of varicose veins and haemorrhoids; minor hearing defects; minor deformities or disabilities of arms and legs; minor degrees of hernia; post-thyroidectomy cases of a non-toxic nature; minor degrees of nasal obstruction; certain minor skin diseases; and cases of sub-standard general physique.

It was estimated in March 1945 from statistics supplied by the National Service Department that possibly 50 per cent of men then in Grades II and III would, under a categorisation system, become available for overseas service. (Particular care would have been necessary in classifying these men, as was proved by experience in the Pacific islands garrison troops.)

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[1] See pp. 346– 7.

On the same basis, many more less-fit men who were not mobilised could well have been employed in New Zealand in military occupations which were in keeping with their civilian occupation or capacity.

Remedial Treatment

In 1940 it was arranged that remedial treatment would be provided at the expense of the Army for recruits who were likely to be classed fit for active service in any part of the world at the termination of such period of treatment. Only disabilities which could be corrected and would allow the recruit to enter camp within one month after his operation were initially considered. Arrangements were made for such treatment to be carried out at public hospitals, in-patient treatment usually being required.

Types suitable for remedial treatment were set out as follows: Enlarged tonsils; circumcision; minor toe operations (hammer toe and overlapping toe); undescended testicle; varicocele of severe degree; hydrocele; minor degree of varicose veins (not above the knee), where only one, or at the most two, treatments were required for cure.

This provision did not include such conditions as hernia or surgical disabilities requiring a long period of convalescence. Recommendations for remedial treatment were made by the medical boards, but had to be approved by the Regional Deputy.

At first the treatment was restricted to volunteers for overseas service. When compulsory service was adopted the treatment was extended to men called up in the ballot both for the Territorials and for overseas service. The treatment was made compulsory and those refusing treatment were prosecuted and penalties inflicted. Later, compulsion was dropped and no penalties were inflicted, partly because the rules of the hospitals precluded compulsion and required the consent of the patient. In the case of inoculation and vaccination the treatment was compulsory and could be given in spite of refusal, this point being covered in the National Service Emergency Regulations 1940. The regulation read:

Regulation 41 - Medical Treatment of Members of Armed Forces

(1) Every member of any armed force shall be guilty of an offence punish able as if it were an offence against Article 1417 of the King's Regulations and Admiralty Instructions, section 18 of the Army Act, or section 18 of the Air Force Act (Imperial), as the case may require, who, whether in New Zealand or elsewhere,–

(*a*) Refuses to allow himself to be vaccinated or inoculated for the purpose of rendering him immune from any disease or fit for service with that force on being required to do so by any officer having authority over him; or

(*b*) Refuses to submit himself to treatment by a medical or dental practitioner on being required so to do by any officer having authority over him, if that treatment is deemed necessary for the purpose of rendering him fit for service with that force.

(2) It shall be lawful for any medical practitioner authorised in that behalf by the Officer Commanding any armed force or any unit of an armed force, whether in New Zealand or elsewhere, to vaccinate or inoculate any member of any armed force, whether with or without the consent of that member, for the purpose of rendering him immune from any disease or fit for service with that force.

(3) This regulation shall apply to all members of any armed force, whether they are members thereof by voluntary enlistment or otherwise, and whether they are members of that force at the date of the commencement of these regulations or become members after that date.

In August 1941 the liability of hospital boards with regard to

remedial treatment became of importance after two unfortunate deaths, one from tetanus, following injections for treatment of varicose veins. Legal action was taken in one case against the hospital. The Auckland Hospital refused operation unless consent had been obtained and other hospitals adopted the same attitude. The question of compulsion arose, and after referring the matter to legal advisers it was finally determined that compulsion could not be enforced, but penalties were inflicted in the case of refusal.

In August 1942 Army Headquarters advised that in future if a man refused to submit to remedial treatment he was not to be prosecuted or charged, nor were any proceedings or other steps to be taken to require him to submit, or to punish him for not submitting. Recommendations were made to place the man in suitable army employment and, if possible, to retain him in the service.

The period of one month laid down as the maximum for remedial treatment was found to be too rigid and Regional Deputies were allowed to use their discretion in some cases in which men would definitely become Grade I, but in the case of varicose veins it was laid down by the DGMS that more than two injections could be given only if the period of four weeks was not exceeded. It had been pointed out that surgeons had been giving more radical treatment, including Trendelenberg's operation.

The question of treating hernia cases arose, but the DGMS expressed strong opinions against treatment being given, asserting that four months' convalescence was necessary and that recurrences might occur if duty was resumed too early.

At the end of August 1941 there were 978 cases on the waiting list for admission to hospital for remedial treatment, 281 of them being in Invercargill. In January 1942 the number had been reduced to 432, only 50 at Invercargill. Because of the delay, suggestions were made that treatment could be carried out in the camps or in the smaller country hospitals. The DGMS would not agree to treatment in camps, but agreed to the cases being dealt with in the smaller hospitals. Certain smaller

hospitals, because of lack of accommodation and staff, objected to treating cases belonging to their district but which were referred to them from military camps outside the district.

In February 1942 reports were furnished from both Auckland and Christchurch giving the results of treatment carried out there. The Regional Deputy in Auckland was unhappy with regard to the treatment of cases of varicose veins and considered that, in general, too much surgery was being carried out.

In October 1942 there was still difficulty at Auckland in getting airmen dealt with. In March 1943 the Regional Deputy at Auckland considered that too much surgery was being done, often with resultant aggravation of the disability and pension liability, and suggested the appointment of a Senior Superintending Medical Officer to supervise and give consent to all surgical procedures suggested. The Director-General of Health referred the matter to the Adjutant-General, who replied that the appointment might lead to friction with the members of the hospital staff, but he advised that the medical boards and the Regional Deputies should adopt a conservative attitude with regard to the recommendation of surgical remedial procedures, both as regards recruits and serving soldiers. All Regional Deputies were circularised to that effect by the Director-General of Health.

Thus it can be seen that results did not realise expectations, though there is a case for remedial treatment for certain conditions, provided there is selection and control by an experienced surgeon.

It would appear in retrospect that too much emphasis was put on the time factor in the treatment, and too little on the efficiency of the surgical treatment. From overseas experience, if any treatment is to be given for varicose veins it should be mainly surgical, and, if surgery is not required, then as a rule no treatment is necessary and is often meddlesome and dangerous. With regard to varicocele no surgical treatment is desirable. The treatment of undescended testis without the inclusion of hernia is illogical both from the point of view of the

common association of the two conditions, and also because efficient treatment of an undescended testis is just as prolonged as the treatment of hernia.

There also seems to have been an over-accentuation of ENT procedures where surgery can so easily be overdone.

The results of treatment in the younger group of soldiers has shown that the operative treatment of hernia in this group would have been more than justified, especially as a long-term policy. Generally there seems to be no evidence that senior experienced surgical opinion was available in determining the policy adopted. Nevertheless, the adoption of remedial treatment did provide many more Grade I men for the Army, though there is much doubt whether the time and trouble given to the cases was warranted.

Territorial Force and National Military Reserve

In May 1940 instructions were issued from Army Headquarters on the medical standard for members of the Territorial Force, which the Government had recently decided to call up for intensive training, and for members of certain units of the National Military Reserve which were being organised and trained.

It was necessary for all ranks to be medically examined. For new recruits the medical examination was in all respects the same as for recruits for 2 NZEF and the standard of fitness was Grade II. For existing members of units the standard was lower. The reason for the two different standards was the desire to retain as many of the serving members of units as possible. It was feared that if the 2 NZEF standard were applied to these men, there would be a risk of units losing too large a number of trained men.

Home Guard

In July 1941 instructions were likewise issued for the medical

examination of Home Guard personnel. The conduct of the examinations was in accordance with the regulations for the medical examination of recruits for 2 NZEF and the Territorial Force. The standard of fitness was Grade II. For both the Home Guard and National Military Reserve X-ray examinations of the chest were undertaken only in those cases in which the medical board specially recommended that it was necessary.

Consideration of Full-time Medical Boards

As the war advanced and a stage of mass mobilisation in New Zealand was reached there were indications that the standard of examinations of recruits was deteriorating. To answer this problem the Director-General of Medical Services propounded a system of permanent full-time medical boards. This recommendation of July 1943 was discussed at length by the National Medical Committee on 6 September and 13 October 1943. The desirability of appointing full-time medical boards in place of the established system under Regional Deputy control was open to question and a decision on the matter was postponed. In the meantime the pressure of medical boarding eased considerably. Thus the suggestion was not put into effect, and it is a moot point whether such permanent boards would have been practicable because of the rush of recruits and the shortage of medical practitioners.

Medical Boarding on Demobilisation

Each serviceman was medically boarded after his return to New Zealand, usually in a centre near his home. The boarding was carried out by the Health Department, acting through Regional Deputies. Arrangements similar to those for the boarding of recruits were made, the boards being identical. Two medical practitioners constituted a board, and in the main centres a senior practitioner approved the findings of the boards on behalf of the Regional Deputy.

The boards were asked to determine:

1. Whether the serviceman was fit to resume his civil occupation with no disability arising during service.
2. Whether he had a disability necessitating hospital treatment either as an in-patient or out-patient.
3. Whether he had a disability arising during service not requiring treatment but entitling him to a pension, and if so, to decide the percentage of disability and recommend the period of pension. (The period for which a pension was first granted was generally three to six months, sufficient to enable the War Pensions Branch to arrange for a specialist examination and reconsideration by the Pensions Board.)

The personnel of the medical boards varied considerably in different areas and at different periods. There were available some older semi-retired practitioners with long experience, often in the Army, who were well suited to the work. But at times many young house surgeons at the hospitals without the experience or judgment necessary for this work had to be utilised.

The organisation of the boarding was carried out by the Army, which provided the accommodation, the staff and the machinery for calling up the men for all the examinations and making arrangements for any treatment advised by the board, and attended to all the other requirements such as leave and pay. The Sick and Wounded Branch under the Adjutant-General was then responsible for all personnel whilst undergoing treatment before final demobilisation or transfer to the War Pensions Branch of the Social Security Department.

Generally whilst undergoing medical treatment the serviceman was retained in the Army on full pay, but when treatment was prolonged, especially when a permanent disability was present, he was demobilised, a pension granted, and he came under the control of the War Pensions Branch.

Servicemen were treated liberally with regard to the provision of medical treatment, the main difficulty being delay due to the inability of the hospitals to provide accommodation. Treatment was provided for any disability present at demobilisation which had arisen during service overseas, whether attributable to service or not, and also for disabilities

which had been aggravated by service.

As regards service in New Zealand, treatment was granted for disabilities attributable to or aggravated by service. In every case the serviceman was given the benefit of the doubt.

There was an inevitable tendency for some servicemen to prolong treatment, especially in minor cases, when full pay was being provided. Abuses occurred at times; men even resumed civil employment whilst still on full army pay and attending hospital as out-patients. When a medical officer was attached to the Sick and Wounded Branch he was able to check up on these cases and minimise the abuses.

A dental examination on demobilisation was carried out and provision was made for treatment by private dentists so as to render the man dentally fit. The Army paid the dentists' fees.

An X-ray examination of the chest was carried out for all servicemen, generally by miniature radiography; in cases of doubt a specialist examination and report was arranged for. Assessments of the degree of disability of the ex-servicemen, when present, were made by tuberculosis officers for the consideration of the War Pensions Board in its determination of the amount of pension payable. The Pensions Board adopted a very liberal policy, recognising the disease as possibly connected with service life if its onset took place within two years of an individual's discharge. Not always, however, was a discharge X-ray form attached to the soldier's file and this created an added problem for the War Pensions Boards in their assessments of the source of this serious disease.

In the demobilisation medical boarding there were some special problems, generally psychological in nature. There was a tendency in some cases for the serviceman to wish to hurry the process so as to throw off the trammels of service and enter civilian life, and so to ignore some disability not at the time causing any great inconvenience. On the other hand, many servicemen drew attention to trivial matters so as to

have evidence or record in case of any subsequent troubles, and also to get the Army's assistance to rectify some condition not really causing any disability. This was undoubtedly aggravated by the well-intentioned advice given to servicemen by leading politicians. It caused needless trouble and was psychologically harmful.

Invalids from Overseas

Invalids from overseas were brought by hospital ship to Wellington where, except for South Island cot cases, they were disembarked for medical boarding at the Casualty Clearing Hospital, Aotea Quay. Psychotic and pulmonary tuberculosis patients (unless for the South Island) were taken from the ship direct to Wellington Hospital and their subsequent disposal was made on the recommendation of the specialists concerned. The psychotics were seen by doctors from the Porirua Mental Hospital. In the early stages the Superintendent of the Clearing Hospital, Dr D. Macdonald Wilson, picked out the heavy surgical cases and sent them direct from the ship to Wellington Hospital, but this was soon found unnecessary as all the cot cases could usually be accommodated in one of the six wards of the Clearing Hospital. Likewise, all amputees were admitted to one ward where they would be seen by an orthopaedic surgeon and the Supervisor of Artificial Limbs. Anxiety neurosis cases were usually gathered in one ward also.

Medical boarding, X-ray and dental examinations were all done at the Clearing Hospital. X-ray technicians were supplied by the Wellington Hospital, six civilian dentists were employed, and civilian doctors made up the necessary number of medical boards. The invalids were boarded in groups so that they could connect with rail or bus services for their home destinations. On the second day the South Island cases were boarded so that they could be taken to Lyttelton that night by the hospital ship, and by the fourth day after the hospital ship's arrival all medical boarding was completed. Most patients went to their home towns but care was taken that no man left Wellington until he was fit to travel. Instructions were issued to ensure that a man requiring specialist

treatment would go in due course to a hospital where such treatment was available. A posting committee consisting of an officer of the Sick and Wounded Branch and a senior civilian medical practitioner appointed by the Regional Deputy reviewed all medical boardings before men left the Clearing Hospital. The medical officer checked to see that grading was in accordance with instructions in the Organisation for National Security booklet, and that recommendations regarding treatment were sound and according to policy; and especially to see that no orthopaedic case went to other than the large hospitals in the four main centres where there were orthopaedic units. The Sick and Wounded Branch had the oversight of the patients until their final boarding and discharge from the Army.

Work Accomplished by Medical Boards

There can be no doubt that the civilian medical boards under the Regional Deputies carried out a vast amount of work, and most of it very creditably. Detailed figures are not available of the number of medical examinations made by them but the figures for Area 1, Auckland, the biggest of the twelve areas, indicate the magnitude of the task. In six years the medical boards in this area carried out over 140,000 separate medical examinations. (See table below.)

The work of the boards continued throughout the war, and after, until demobilisation had been completed. In fact, one of their busiest phases occurred during 1945 and early 1946, when large numbers of troops returned from overseas and had to be medically examined before resuming civilian life. In cases where there was any degree of unfitness due to war service the pension aspect assumed a particular importance, although the final question of attributability or aggravation was settled by the Pensions Board.

Number of Medical Examinations, Area 1, , 1939–46

——	*Enlistments* NZ355	*Chest Board*	*Off-duty List, Discharges,* NZ733	*Ex Middle East*	*Ex Pacific* NZ164	*Discharges Air Force* NZ164	*Ex Japanese Internees*	*Tot*

			Sick and Wounded, on Pay NZ164	NZ164				
3 Sep–9 Dec 39	2,592							2,5
Dec 39–Mar 40	Not Known							
Mar–Dec 1940	21,748	900						22,
1941	14,842	1,476	1,785	160	213			18,
1942	28,542	2,247	4,907	430	1,407			37,
1943	11,873	2,000	6,096	1,174	1,716			22,
1944	3,707	969	5,230	974	3,885			14,
1945	2,450	598	6,456	4,380	746	1,365	195	16,
1 Jan–31 Mar 46	1,019	161	1,396	2,933	19	523		6,0
Total	86,773	8,351	25,870	10,051	7,986	1,888	195	141

Manpower examinations December 1942 to December 1945 = 5959

Review of Medical Boarding

No medical boarding system can hope to be perfect, and therefore medical boarding is always bound to give rise to some criticism. It was so in the First World War, and Sir William Macpherson in the British Official Medical History, [1] Colonel A. G. Butler in the

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[1] **Vol. 1, General, p. 128.**

Official History of the Australian Army Medical Services and Lieutenant-Colonel A. D. Carbery in his volume, *The New Zealand Medical Services in The Great War*, all point out the nature of the criticism. Macpherson and Butler both make the point that 'medicine is not an exact science' in spite of popular conception, that impossible results were expected from medical examinations, and that medical boards were not so much to blame in the handling of a complicated problem.

Butler quotes a letter from General Birdwood in which he makes the following statement in regard to men from Australia found to be unfit for service in the field when they arrived in England: 'The lack of uniformity is not so much due to the inevitable lack of common and defined bases as to the inevitable lack of unanimity in human judgment as it affects medical authority on the one hand and the psychology of the soldier on the other. It is 'probably medically correct to say that a man under the exultation of enlistment in Australia might easily be passed by the same medical board which would reject him in England when the exultation has worn off and he has for a period undergone strenuous military training'. Here the basic problem is soundly stated, but this should not of course be used as an excuse for not making the boarding system as complete and accurate as possible, or for not attempting to secure a good measure of uniformity by the various boards conducting medical examinations.

It is interesting to note that in Canada at the beginning of the Second World War the medical examination of recruits was carried out in a similar fashion to our own. This proved unsatisfactory, especially in the smaller and more scattered districts, and full-time travelling boards were instituted. In Australia, also, the boards were under service control. In Britain the boards were composed of civilian practitioners, but categorisation and more particular army posting enabled more men to be accepted.

It would be almost impossible to ensure that none who could be

classified as 'unfit' by the medical standards actually entered mobilisation camps, but the aim should be to reduce the wastage to a minimum. There are always keen recruits who will not mention their disabilities even if they are aware of them. It would not be possible to have every recruit examined automatically by an eye specialist and an ear, nose and throat specialist, nor could all cases making a statement of injury near a joint be X-rayed. The medical examination could easily be so severe that the forces would get few recruits. Except for serious disabilities, the really important factor is the reaction of the individual to army life. Many render notable service in spite of disabilities that are not discovered. Some of the complaints from overseas followed arduous periods of training, some of it no doubt monotonous. It is possible that had some of the men been involved in the action of a campaign sooner they might never have reported disabilities.

A reduction of wastage could be achieved if all doctors on medical boards were thoroughly educated in their duties before any emergency arose. Experience in medical examinations for Territorials would, of course, be a valuable background for doctors called upon in emergency. Even then a doctor may be familiar with his instructions, may make a complete and conscientious examination, but then be lacking in judgment because he does not realise the effect of military training and life on the variations from normal that he may find in a recruit. It is here that the experience of doctors with war service is valuable, but the theatre of service or the unknown nature of the campaign again are limiting factors. It would be helpful if medical boarding were staggered and fewer doctors employed, possibly full-time. The making available of the medical files held by the Army or War Pensions Branch for any previous military service by the recruit would be a considerable aid, as also would be any hospital record.

The essential requirements of a medical board are, first, a clear-cut code of instructions so that the requirements of the army authorities as to physical and mental standards under the various categories are clearly understood; second, a team of medical men who are interested

and enthusiastic in this class of work; third, a standard of clinical acumen in the board which will ensure the minimum of mistakes being made in evaluating disabilities, real or alleged. The Code of Instructions issued in the Second World War was a reliable and adequate guide, but only if used in conjunction with sound clinical judgment.

As the war went on and fewer practitioners were available, junior men from the hospitals were employed to a great extent on medical boards. Even with a satisfactory code of instructions, the grading of recruits must necessarily be difficult, and it is not surprising that standards varied greatly in the different parts of New Zealand.

The examination of a man took only a few minutes; it was estimated that eight men were examined in an hour, and no adequate tests or no very complete inquiry could be made in that time. The recruit can easily withhold important information, and particularly can deny the presence of any disability even when the examiner may note a possible cause for disability. The psychological make-up of the recruit also can hardly be adequately summed up in the time, or by the ordinary methods of examination utilised. There were marked differences in the proportion of men turned down in different areas, both as regards the number and also as to the disabilities suffered.

The rejection of a man for some minor abnormality which did not prevent him from carrying out a strenuous occupation or indulging in strenuous sport is absurd and brings the medical examination into disrepute. It takes long experience and generally specialised experience in the forces to be able to evaluate the real significance of the numerous small abnormalities to which the body is prone. The medical practitioner is apt to set his standards too high and in his efforts to correct abnormalities is apt to assume that abnormalities have a marked effect on function. He is surprised when he finds a man doing hard manual work without complaint, with some marked abnormality in his physical make-up, which in another man of weaker fibre would give rise to much complaint.

It has always seemed anomalous that such a large percentage of men able to carry on their work in civil life are unfit for service in the forces, especially as only a proportion of those even in overseas service are subjected to the stress of front-line service. During the Second World War it was shown that the main bar to satisfactory overseas, and especially front-line, service was an unstable psychological make-up, and this was not at all a common cause for the rejection of a recruit. The rejection, on the other hand, was generally made on some physical abnormality, which in many instances had never given rise to any appreciable disability and would not have done so in the Army if the mental condition was stable.

The system of medical boarding in New Zealand during the Second World War was generally efficient in the circumstances but it had certain weaknesses. Some of the districts allocated to Regional Deputies did not conform to army areas, and this led to difficulty in the oversight of medical files. The Regional Deputies were part-time officers with busy practices and were unable to supervise boards held in outlying centres. They had no secretarial assistance in the transmission of instructions to the doctors in their areas. The boarding of each balloted group had to be completed in six weeks, which meant inevitable hustle, especially as the medical practitioners were busy and their numbers much reduced. There was a natural tendency to overload the boarding sessions, especially in the smaller and more scattered areas. The shortage of specialists led to delay in obtaining specialist opinions on referred cases. There was no means of allocating men with minor degrees of disability to special occupations in the Army. Standards were laid down for the Territorial and Home Guard service, but the Army altered the conditions of service later without further medical examination for those concerned. The Pulheems system of medical boarding should correct many of these anomalies in the future, and the experience obtained in the medical boarding of those on Territorial service will help.

Rejection Rates

For his report of 13 February 1941 on the conservation of manpower for the armed forces the Director-General of Medical Services (Army and Air) drew up a table showing the numbers of recruits examined and the percentage found fit in each of the twelve military areas. (See Appendix B.) Of a total of 109,809 men examined by medical boards, 71,834 (65.4 per cent) were classed as fit. Unfortunately there are no figures available for the detailed causes of rejection for this group.

From 1941 onwards, and more particularly from 1942 to 1945, the National Service Department kept details of the numbers and results of medical examinations of men called in ballots. Unfortunately, when causes of rejection were analysed in detail, sample groups only at certain age-points were examined with a view to showing the relation between age and frequency of each cause of rejection.

In a report to Parliament the Director of National Service stated:

During the first nine months of the war, and prior to the inception of the Department, approximately 60,000 men had volunteered for service with the forces, and of these, some 29,000 had been actually posted to camp. Of the remainder, some 17,000 had been found to be medically unfit, and less than 3,000 had been held back from service in the public interest on account of the importance of their occupations. The rest awaited medical examination, hearing of appeals, or posting to camp.

From these approximate figures a percentage of 28.33 were medically unfit. A more accurate figure is that of 24.35 per cent, as shown in the DGMS's table in relation to volunteers (i.e., of 57,741 volunteers examined, 43,685, being 75.65 per cent, were passed as fit).

In the eighteen months after the establishment of the National Service Department twelve ballots were held and every available single man called up for service. A total of 77,040 men were called up for Territorial service, and 80,509 were called for overseas service, including 34,494 who had previously been called for Territorial service. The great

bulk of these were medically examined with the result:

Percentage of Men placed in Medical Grade

	I	*Temp. Unfit and Deferred*	*II*	*III*	*IV*
Ballots 1–12 (single men)	**54.0**	**11.5**	**10.2**	**16.2**	**8.1**

Statistical research showed that the proportion of balloted single men in Grade I fell rapidly with advance in age from 73 per cent at the age of 19 to 24 per cent at the age of 43, while the proportion in Grades III and IV combined rose from 9 per cent at 19 to 54 per cent at 43.

The figures given above closely approximate to the results of medical examinations of men called in all ballots up to the cessation of hostilities:

Number of Men placed in Medical Grade

Ballot No.	*I*	*Temp. Unfit and Deferred*	*II*	*III*	*IV*	*Total Examined*
1–12 (single men)	**58,602**	**10,185**	**11,661**	**15,606**	**7,132**	**103,186**
13–19 (married men)	**64,330**	**12,728**	**19,040**	**30,738**	**2,990**	**129,826**
20–24 (inflow at age 18, etc.)	**11,411**	**1,027**	**1,604**	**1,474**	**226**	**15,742**
All ballots	**134,343**	**23,940**	**32,305**	**47,818**	**10,348**	**248,754**

Percentage of Men placed in Medical Grade

Ballot No.	*I*	*Temp. Unfit and Deferred*	*II*	*III*	*IV*	*Total*
1–12 (single men)	**56.8**	**9.9**	**11.3**	**15.1**	**6.9**	**100.0**
13–19 (married men)	**49.5**	**9.8**	**14.7**	**23.7**	**2.3**	**100.0**
20–24 (inflow at age 18, etc.)	**72.5**	**6.5**	**10.2**	**9.4**	**1.4**	**100.0**
All ballots	**54.0**	**9.6**	**13.0**	**19.2**	**4.2**	**100.0**

It will be noted that the rejection rate for the volunteer group was considerably less than for the balloted group. This should not necessarily give the conclusion that the volunteers were comparatively much fitter. At the outbreak of war the Code of Instructions for medical boards

defined Grade I men for army requirements as: 'Men who attain the full normal standard of health and strength and are capable of enduring physical exertion suitable to their age.' The age limits were 21 to 40 years, excluding officers, who were allowed to exceed the age of 40. This definition gave no indication of the climatic conditions under which a man would be asked to live, let alone fight, under modern war conditions. Boards were required to use their common sense on matters not dealt with in the Code of Instructions. Medical examinations followed the plan laid out on Form NZ355, which was inadequate as regards formulating the procedure for a medical examination and as a record of the pre-enlistment medical history of the recruit.

It was not until the later part of 1940 that a new Form NZ355 was produced, giving a more complete procedure for examination of recruits, besides providing for a record of the man's previous health. It further qualified Grade I by the words, 'Fit for active service in any part of the world.'

Boards too, in the initial phases, frequently gave a recruit the benefit of any doubt and left his future to the Army, which was more concerned at that time with despatching trained men overseas than with the disabilities that soldiers might possess.

APPENDIX A

Medical Examinations of Men Called Up for Military Service 1942–43

Analysis by Causes of Rejection for Active Military Service

A. all men	B. unfit men
Number of men rejected for each cause per 10,000 men examined at each of four	Distribution of causes of rejection per 100 unfit men examined at the same age-points

	selected age-points						
—	Central Age of Group Examined				Central Age of Group Examined		
	19 years (single)	28 years (married)	33 years (married)	42 years (married)	19 years (single)	28 years (married)	33 y (mar
Total men examined	10,000	10,000	10,000	10,000	2,210	2,829	3,51
Cause of rejection for active service:					Per Cent	Per Cent	Per C
Infectious and Parasitic Diseases							
1. Tuberculosis (excluding pulmonary)	12	12	15	16	0.5	0.4	0.4
2. Venereal	2	2	4	5	0.1	0.1	0.1
3. All other infectious and parasitic diseases	7	9	8	15	0.3	0.3	0.3
Items 1 to 3 combined	21	23	27	36	0.9	0.8	0.8
Nervous and Mental Diseases							
4. Mental deficiency, mental alienation and epilepsy	106	51	61	58	4.8	1.8	1.7
5. Functional	61	99	154	198	2.8	3.5	4.4

nervous disorders							
6. Organic nervous disorders	**42**	**46**	**44**	**39**	**1.9**	**1.6**	**1.3**
Items 4 to 6 combined	**209**	**196**	**259**	**295**	**9.5**	**6.9**	**7.4**
Cardio-vascular Diseases							
7. Organic heart disease and arrhythmias	**64**	**89**	**103**	**207**	**2.9**	**3.1**	**2.9**
8. Functional heart disorders	**28**	**55**	**52**	**85**	**1.3**	**1.9**	**1.5**
9. Blood vessel diseases	**80**	**225**	**318**	**700**	**3.6**	**8.0**	**9.0**
Items 7 to 9 combined	**172**	**369**	**473**	**992**	**7.8**	**13.0**	**13.4**
Alimentary Diseases							
10. Mouth (including dental) and throat	**22**	**18**	**16**	**17**	**1.0**	**0.6**	**0.5**
11. Stomach and duodenal disorders	**10**	**86**	**131**	**244**	**0.5**	**3.0**	**3.7**
12. Other alimentary disorders, (including liver and gall-bladder)	**10**	**27**	**37**	**67**	**0.5**	**1.0**	**1.0**
Items 10 to	**42**	**131**	**184**	**328**	**2.0**	**4.6**	**5.2**

12 combined							
Respiratory Diseases							
13. Pulmonary tuberculosis	**12**	**31**	**41**	**46**	**0.5**	**1.1**	**1.2**
14. Other pulmonary diseases	**23**	**26**	**43**	**85**	**1.1**	**0.9**	**1.2**
15. Asthma	**102**	**105**	**113**	**118**	**4.6**	**3.7**	**3.2**
16. Paranasal sinus infection	**17**	**19**	**35**	**38**	**0.8**	**0.7**	**1.0**
Items 13 to 16 combined	**154**	**181**	**232**	**287**	**7.0**	**6.4**	**6.6**
Disorders of Bones and Organs of Locomotion							
17. Disorders of upper extremities	**61**	**106**	**160**	**199**	**2.8**	**3.8**	**4.6**
18. Disorders of lower extremities (excluding flat feet)	**268**	**402**	**579**	**780**	**12.1**	**14.2**	**16.5**
19. Flat feet	**118**	**142**	**191**	**253**	**5.3**	**5.0**	**5.4**
20. Rheumatic (bone and joint) and arthritic disorders	**15**	**61**	**81**	**172**	**0.7**	**2.2**	**2.3**
21. Other bone	**41**	**43**	**47**	**66**	**1.9**	**1.5**	**1.4**

disorders							
22. Fibrositic conditions (including lumbago, sciatica, etc.)	3	34	68	118	0.1	1.2	1.9
Items 17 to 22 combined	506	788	1,126	1,588	22.9	27.9	32.1
Ear Disorders							
23. Otitis media and mastoid disease	45	64	63	82	2.0	2.3	1.8
24. Other ear disorders	27	52	73	127	1.2	1.8	2.1
Items 23 and 24 combined	72	116	136	209	3.2	4.1	3.9
Eye Disorders							
25. Defective vision	398	343	341	435	18.0	12.1	9.7
26. Blindness (one or both eyes)	28	39	42	50	1.3	1.4	1.2
27. Other eye disorders	25	25	32	34	1.1	0.9	0.9
Items 25 to 27 combined	451	407	415	519	20.4	14.4	11.8
Other Classes							
28. All skin	51	43	51	103	2.3	1.5	1.4

diseases							
29. Tumours, malignant and non-malignant		3	3	9		0.1	0.1
30. Genito-urinary diseases, other than venereal	72	54	65	76	3.2	1.9	1.8
31. Diseases of blood and blood-forming organs	2	1	4	8	0.1	0.1	0.1
32. Diabetes	6	8	9	26	0.2	0.3	0.3
33. Thyroid-gland diseases	35	87	102	88	1.6	3.1	2.9
34. Hernias	50	146	160	291	2.3	5.1	4.6
35. Overweight or underweight	101	56	57	117	4.6	2.0	1.6
36. Other disorders, local or general (not included above)	266	220	213	370	12.0	7.8	6.0
Total, Grades II, III, and IV	2,210	2,829	3,516	5,342	100.0	100.0	100.

APPENDIX B

	Percentages of Men Passed Fit as at 1 February 1941						
Area No.	VOLUNTEERS			BALLOTED MEN			TOT
	Number	*Number*	*Percentage*	*Number*	*Number*	*Percentage*	*Nu*

	Examined	Fit		Examined	Fit		Ex
1. Auckland	9,753	6,730	69.0	10,404	4,988	47.66	20
2. Paeroa	3,129	2,656	84.83	3,478	2,029	58.30	6,6
3. Whangarei	2,398	1,994	83.11	3,342	2,135	63.88	5,7
4. Hamilton	3,986	3,074	77.17	4,058	1,134	52.58	8,0
5. Wellington	7,896	6,200	78.52	7,088	3,924	55.36	14
6. Wanganui	3,257	2,742	84.19	2,694	1,750	64.95	5,9
7. Napier	4,894	3,713	76.07	3,073	1,776	57.79	7,9
8. New Plymouth	2,516	1,998	79.41	1,848	1,060	57.35	4,3
9. Nelson	3,375	2,632	77.98	1,705	1,008	59.12	5,0
10. Christchurch	8,069	5,806	71.95	8,610	4,617	53.62	16
11. Dunedin	4,761	3,592	75.44	3,219	1,559	48.43	7,9
12. Invercargill	3,707	2,548	68.73	2,489	1,169	46.96	6,1
Total NZ	57,741	43,685	75.65	52,008	28,149	54.06	10

APPENDIX C

Return of Total Strength in Area Pools, New Zealand (as at 1 July 1943)

Area	Grade I	Grade II			Grade III			
		Total in Pool	* Grading Permanent	* Re-examination Dispensed With	Total in Pool	* Grading Permanent	* Re-examination Dispensed With	
1	10,870	5,007			11,586	43	1,145	
2	5,092	1,585			3,322	89	144	
3	2,450	1,131	103	242	1,605	620	177	
4	4,976	1,717	20	75	3,893	394	246	
5	7,643	4,412	1,011	774	9,857	2,589	1,937	
6	4,418	1,774	63	63	3,856	110	319	
7	5,220	2,170	43	60	4,416	109	563	

8	3,788	1,146	160		2,756	773		
9	3,835	1,573	133	75	3,984	379	763	
10	8,318	3,171	137	883	11,224	780	4,231	
11	3,907	2,537		75	4,682		204	
12	4,190	689	163	179	4,655	1,269	1,074	
	64,707	26,912	1,833	2,426	65,836	7,155	10,803	

Note: **The data which formed the basis of Appendix A consisted of the results of the medical examinations of 105,311 men aged 18 to 45 years inclusive, who were examined for military service during 1942 and 1943. These included the great majority of all men so examined during that period. Of the total number examined, 42,022 were rejected for active service overseas and placed in Grade II, III, or IV. As a preliminary step, the cases were grouped in four age-groups as follows:**

Central Age	*All Men Examined*	*Men Rejected for Active Service*
19 years	10,855	2,399
28 years	22,585	6,389
33 years	28,239	9,928
42 years	43,632	23,306

For the purpose of making comparisons the actual numbers rejected for each cause were reduced by a constant factor in each age-group, corresponding to a reduction in the total number examined in that group to 10,000 men.

The men falling into the first group were all single; 96 per cent of those in the three older groups were married men – a point of some importance in studying the comparative incidence of those medical conditions which would be associated more particularly with men in the older ages who had not married on account of some medical disability. Details of this older group of single men are unfortunately not available.

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* **Figures in these columns are included in relative sub-totals**

III: RECRUITMENT OF MEDICAL OFFICERS

III: Recruitment of Medical Officers

Recruitment of members of the medical profession for military service, whether overseas or on home defence, was brought under strict control and conducted in an orderly manner from shortly after the outbreak of war in September 1939. The following recommendation made by the Director-General of Health on 14 September 1939 to the Minister of Health was approved by the Minister as the basis for the release of doctors for military service:

While it is imperative to ensure that the medical needs of the Army are adequately met, it is equally imperative that the needs of the public hospitals and the civil community should not be overlooked. In order to make sure these requirements are met it is considered that the best system would be to ensure that no medical men, other than those at present under military obligations, are accepted for service until their case has been reviewed by a competent authority. At the present time there is such an authority in the Medical Committee of the Organisation for National Security. This Committee consists of the Director-General of Health as Chairman, the Director of Medical Services (Army) and a representative of the British Medical Association. It is recommended, therefore, that the procedure outlined above be adopted and that no medical men should be withdrawn from hospital service or from private practice for military duties except with the consent of the above-mentioned Committee.

Thereafter no medical men were accepted for service until their names had been submitted to the Medical Committee for the necessary review as laid down in the Minister of Health's approval.

At its meeting on 26 September 1939 the National Medical Committee resolved that ministerial approval be sought to have all

applications from medical men for permits to travel abroad, whether for enlistment in the British forces or otherwise, endorsed by the Director-General of Health before such permits were issued by the Internal Affairs Department, it being understood that the Director-General of Health would consult with the Medical Committee. This arrangement was approved by the Minister of Health and carried into effect.

At the same meeting it was resolved that it be a recommendation to the appropriate authority that in no circumstances should the course of medical students at the medical school be shortened, but that they should complete this course and serve in addition one year [1] as a house surgeon in a New Zealand hospital before they were eligible for military service.

Doctors volunteered for service overseas and were selected for medical units or as regimental medical officers according to their qualifications. Where the release of these chosen men was desired by any of the three services, the Medical Committee referred the names to the local Medical Officer of Health and the Medical Superintendent of the local hospital for a report. In addition the emergency committee of the local division of the British Medical Association was approached to ascertain the responsibilities each man had in relation to hospital and community services. All facts were taken into consideration in deciding whether or not to release medical practitioners for service with the fighting forces. In the case of doctors in the employ of the Mental Hospitals Department, the question of release was the subject of recommendation by the Director-General of that Department who at all times was most helpful.

Under the National Service Emergency Regulations 1940, medical students enlisting were classified under the provisions of Part II of the schedule of important occupations as 'Temporarily postponed'. With this provision the National Medical Committee agreed, but in addition decided to recommend to the Manpower Committee that any medical student who had completed two years of his medical course, including one year of the preliminary sciences and a year of anatomy and

physiology, should not be called up for military service, but should be compelled to carry on and complete his course.

The procedure applying in the case of medical students, medical practitioners and dentists called up by ballots for military service was the subject of decisions by War Cabinet. Where medical students were drawn in a ballot for overseas service, arrangements were made for Appeal Boards to refer all cases to the Director of National Service, who obtained a recommendation from the National Medical

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[1] Later shortened to nine and then to six months.

Committee as to whether it was contrary to the public interest that such persons should be called up for military service. In such cases Appeal Boards, unless they saw good reasons to the contrary, adjourned the cases indefinitely.

Where doctors and dentists were drawn in ballots the War Cabinet decided that the usual appeal procedure was to be observed. Appeal Boards and Manpower Committees were instructed to refer all such cases to the Director of National Service for reference to the National Medical Committee. This enabled the committee to decide the desirability of allowing doctors or dentists to undertake military training or service in their specialist capacities, or to recommend that their calling up should be postponed, on the grounds of public interest. The National Service Emergency Regulations and emergency legislation in general did not provide for the total or automatic exemption or reservation of any particular class or occupation, but that individual exemptions had to be obtained through the usual appeal routine. The War Cabinet had decided that the regulations must be adhered to in all cases.

Under the arrangements the National Medical Committee was enabled to continue to exercise its previous functions of selection and reservation, and its recommendations were always substantially met.

In the middle of 1940, with the expansion of the Territorial forces for the defence of New Zealand, there was an increased demand for medical men to staff the Territorial field ambulances and to act as RMOs of Territorial units in camp. In some centres the depletion of medical personnel was beginning to be felt acutely, whereas in other areas little change had taken place. The British Medical Association began to make surveys of the position in each district, and also recommended all its members to volunteer for such service as they were considered suitable for. This would have overcome a number of difficulties as men could have been selected from the districts from which they could have best been spared. The response to the appeal, however, was limited. The demands of the Territorial forces were met to some extent by the use of house surgeons who offered their services at the conclusion of their hospital appointments, but these house surgeons were not always released by the hospital boards.

A shortage of medical men in the services developed during 1940 and 1941. A meeting of the National Medical Committee was called on 11 March 1941, at the request of the Prime Minister, to give urgent consideration to the question of the release of further medical men for service with the armed forces to meet the existing shortage, which was viewed by the War Council with some concern. The meeting thoroughly examined the position as is shown in the following record of its deliberations:

1.(*a*) *Estimate of Army Department's Requirements*

The Director-General of Medical Services advised in a memorandum dated 10/3/41 the Army Department's requirements which were summarised as under:

For Army	**69**
For Air Force	**3**
	72

all of whom would be required before January 1942.

In the event of mobilisation of the Territorial Force, a total of 111 medical men would be required for full-time service.

(*b*) *Medical Resources in New Zealand*

The Chairman furnished members with a return showing the medical resources in New Zealand as at 31/1/41, which had been compiled following a recent revision of the Working Medical Register. An attempt had been made therein to set out the age constitution of members of the profession.

Quite apart from the unsatisfactory position as regards civilian medical services disclosed by the return, it was necessary to take into account the number of men who must be retained in the Dominion in connection with additional work arising out of the war but undertaken by purely civilian personnel such as:

(1) The Hospital treatment of Camp sick, and sick and wounded returning from overseas.
(2) Specialist examination and remedial treatment for recruits for the Armed Forces carried out at Hospitals.
(3) Medical boarding of recruits for the Armed Forces and men boarded out of Camps and returning from overseas.
(4) Treatment at Convalescent Hospitals to be maintained and staffed by the Department of Health.
(5) Hospital staffing for Emergency Hospital purposes.

It was obvious therefore that some special measures must be taken, if the Army Department's requirements were to be met in full and at the same time the minimum numbers necessary to provide for civilian needs were to be retained.

After a full consideration of the position the Committee decided that the following steps should be taken.

(*c*) *Further Review of Medical Resources*

An Advisory Committee to be set up in each Health District to make a thorough examination of the medical resources in the district and

advise:

(1) The number and appropriate particulars of men who can safely be released from private practice or hospital appointment.

(2) Any possible means as to how, in the opinion of the Committee, existing medical resources in the district could be used in a more economical manner in order to free as many men as possible for the Armed Forces.

In view of the various factors to be taken into consideration and to enable the situation to be reviewed in proper perspective it was resolved that each Advisory Committee should include representatives of the various interests involved, and that the personnel should be as follows:

(1) The Medical Officer of Health (Convener).

(2) A representative of the local Division of the N.Z. Branch of the British Medical Association.

(3) The Regional Deputy.

(4) The Medical Superintendent of the Public Hospital in the locality in which the position is being reviewed.

(5) The Assistant Director of Medical Services, Army Department, in main centres when available.

It was resolved to write to the Executive of the New Zealand Branch of the British Medical Association and seek the co-operation of the Association in nominating suitable representatives in each district.

(*d*) *Further Review by Army Department*

It was considered that the Army Department might also review the question of their medical personnel and ascertain whether by re-allocation of medical officers some more economical use might not be made of existing staff. In particular it was suggested that two base hospitals of 600 beds already established overseas might be consolidated as one hospital of 1200 beds, thus effecting an appreciable economy in medical staffing.

2. *Advancing of Final Medical Examination*

It was considered that if the University Authorities would agree to

advance the Final Medical examination by 6 months this year, this would enable Hospital Boards to recruit fresh residential staff from graduates before the end of the present year, thus freeing House Surgeons with some measure of Hospital experience for duty with the Armed Forces.

It was resolved to communicate with the University Authorities, strongly recommending that this course be adopted.

3. *Utilisation of Services of Alien Medical Students*

It was decided that should the University find it possible to advance the final examination as suggested, that some 13 alien medical students who would normally present themselves for Final Examination in December 1941 might be given the opportunity of sitting the earlier examination.

It was accordingly resolved to recommend the Medical Council to agree to the proposal on the condition that authority be given to the National Medical Committee or some other appropriate body to require these refugee students on qualification, to take up hospital appointments and remain in such positions as long as they might be required to do so by the Committee. [1]

Another meeting of the National Medical Committee on the same subject was called on 14 June 1941 at the request of the Director-General of Medical Services (Army and Air) to give further consideration to the shortage of medical men available for overseas service. (This was after the campaigns in Greece and Crete.) Questions discussed were a recommendation that the University of Otago

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[1] **Unfortunately this was never made effective.**

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reconsider the proposal (which it had negatived) to advance the final examination for students by six months in 1941; the appointment of

six-year students as house surgeons in hospitals; the employment of alien doctors studying at Otago University as house surgeons in hospitals in place of New Zealand graduates; the increased use of older men, some of them retired, in public hospitals to replace house surgeons; and a survey of staffs of the larger public hospitals to ascertain whether the work could be effectively carried on with fewer junior resident staff. It was resolved that in view of the urgency of the situation the existing requirement of twelve months' hospital experience before medical men could be accepted for military service be relaxed to six months. As the medical course was six years, the final year being spent in clinical work in hospitals, it was felt that graduates in such circumstances would have a total of eighteen months' clinical experience and should be reasonably equipped to undertake junior positions in the New Zealand Medical Corps.

By the meeting of 19 June 1941 the results of several surveys were available. Reports had been received from all advisory committees estimating the number of medical men who could safely be released in each district. The totals were only 64 for overseas service and 14 for home service, including in many cases house surgeons in public hospitals who would be replaced by sixth-year medical students under the arrangement approved by the Medical Council.

As a result of a questionnaire sent to all medical practitioners resident in New Zealand, some 911 replies had been received. These had been classified into Health Districts. It was decided that the Army Department should comb through the Advisory Committee's reports and the survey by Health Districts with a view to adding to the number eligible and physically fit for military service.

The effect of all these investigations was that the immediate needs of the Army for medical officers at the middle of 1941 were substantially met and the National Medical Committee expected to be able to provide most of those likely to be required up to the end of that year, but the position thereafter was not reassuring.

The position then was that some 225 medical men were on service with the armed forces, 161 overseas and 64 on full-time duty in New Zealand. Additional requirements up to the end of 1941 were placed at 55, of which number 34 would be provided under the house surgeon replacement plan, the remainder to be drawn from private practice and part-time hospital staffs.

The ranks of private medical practice had been denuded of young fit men under the system of voluntary enlistment of medical officers, and with the absorption of all fresh graduates into the Army there were no young men to replace in private practice or in the public hospitals those older men who by reason of age or infirmity might be compelled to retire. There was a relatively large number of men over 60 years of age still in practice.

In 1941, too, more attention had to be given to making provision for essential requirements for home defence. It was necessary to maintain and train on a part-time basis a staff of medical officers in connection with the existing scheme of Territorial training of reservists. Plans had also to be made for the provision of adequate medical staff for the various local Emergency Precautions Schemes which had been drawn up to come into operation in the event of attack or other national emergency. Medical officers would be required for casualty work and for duty with Home Guard and other EPS units which might be mobilised.

In connection with the Emergency Precautions Scheme the National Medical Committee decided on 7 October 1941 to arrange for committees to be set up in the main centres to explore the position in regard to medical officers and report to the Medical Committee. The local committees consisted of the Medical Officer of Health, the ADMS of the military district, the controller of the medical section of the EPS and the Regional Deputy.

With the mobilisation of three divisions in New Zealand in the early months of 1942 there was an increased demand for medical officers, which had necessarily to be filled. It was at this stage that the civilian

authorities began to view with apprehension the position of medical services for the civilian population. It was felt by the Director-General of Health and others that in some communities the medical profession had been depleted to a dangerous degree and that the number of doctors left in practice was not adequate to attend to local medical needs.

The Minister of Health on 23 January 1942 suggested to the Prime Minister that War Cabinet consider whether any further doctors should be sent overseas with the fighting forces, and also whether the number of medical men on service in New Zealand could not be reduced. As the Director-General of Medical Services (Army and Air) was able to point out, little reduction was possible in the strength of medical officers overseas if the servicemen and servicewomen were to be given the medical care and treatment they deserved, and which their relatives in New Zealand expected. Reinforcements had to be sent to meet the casualty rate, which had been fairly high among medical officers. As it was, New Zealanders were not supplying medical officers for lines of communication but were relying on British and Australian services in this respect. As regards home defence forces it would be extremely dangerous, while invasion remained imminent, to reduce the number of medical officers mobilised.

In December 1942 the Minister of Health again asserted that the number of medical men serving with the forces was unnecessarily high, and that this was creating a serious position in regard to civilian medical services. The DGMS defended the position with a detailed statement of the duties and demands involved in the maintenance of an army medical service in war, and also emphasised the fact that the strain on the civilian medical service was contributed to by the unzoned system under which the service was operating and by the demands of social security medical services. It was also pointed out that no medical practitioner was released for service with the armed forces until he had been the subject of searching inquiries by the National Medical Committee. In fact, it was a principle of that committee that where there was any doubt as to the needs of the civilian population a doctor's

release was postponed pending further inquiries.

The year 1942 was, however, the period of peak demand for medical services. With the passing of the invasion threat to New Zealand and the reduction of home defence forces, certain of the army medical officers were released to assist in civilian practice. At its meeting of 7 September 1942 appreciation was expressed by the National Medical Committee of the action of the Army Department in this respect. From February to September 1943 there were forty-four more such releases made. This did not mean that the needs of the Army were entirely fulfilled. Much difficulty was experienced in the staffing of 3 NZ Division and measures for expansion had to be curtailed, whereas 2 NZ Division in the Middle East, having established additional medical units overseas, was almost continually understaffed through sickness, casualties, and time lag in replacements coming from New Zealand. With the beginning of furlough and replacement schemes in the second half of 1943 a measure of interchange between 2 NZ Division and New Zealand was possible. Here again the time lag was a complicating factor, as was the demand for experienced surgeons.

The shortage of medical officers continued to be a problem in 2 NZEF in the Middle East and Italy throughout 1944. Doctors in New Zealand were nominated for exchange with long-service medical officers overseas, but adequate provision was not made by means of reinforcements for normal wastage from sickness, or for men returning on compassionate leave or furlough. Medical officers serving overseas felt that they were entitled to furlough at the same time as combatant officers of comparative service, but had to be informed that the lack of reinforcements precluded them from this respite even after four and a half years' service in some cases.

The authorities in New Zealand, including the Department of Health, the National Medical Committee and the British Medical Association, were anxious that long-service young medical officers should be returned to New Zealand and be replaced by house surgeons from hospitals in New Zealand. It was felt that it was necessary, in order to maintain the

standard of medical practice in New Zealand, that the returning young medical officers should have the opportunity of gaining further experience as house surgeons in public hospitals before commencing civil practice.

This rehabilitation measure was the subject of two conferences in the middle of 1944, one between the Minister of Defence, the Minister of Health and representatives of the Army and the Department of Health, and the other between the National Medical Committee, representatives of the British Medical Association, Rehabilitation Department and Otago Medical School. At both conferences it was indicated that with the reduction in strength of 2 NZEF in the Pacific, a pool of young medical officers would be available for such an exchange. The problem of exchange was made more difficult by the fact that civilian hospitals had been increased, both in size and number, to deal with returning sick and wounded servicemen and with the increasing social security demands from the civilian population. Another factor that increased the difficulty was that, owing to the war, for five years none of the younger medical men had been able to take higher qualifications and specialise. Hence the number of specialists in New Zealand had decreased and most of them were then middle-aged or over. There was thus a definite shortage of specialists for the requirements of the country, and this was the main factor hindering the replacement of this class of officer overseas. In order to effect an exchange, either the Army overseas or a civilian hospital had to be deprived of the specialist for a period of at least four or five months. Before specialists could safely be released overseas they had to be replaced from New Zealand.

The British Medical Association circularised all its members asking them whether they were prepared to replace their colleagues overseas. This method of exchange was, however, limited to those who were partners or who resided in the same town as the man to be replaced.

It was the disbandment of the New Zealand force in the Pacific which granted the greatest relief in this matter, as a large proportion of

the medical officers were transferred to 2 NZEF in the Mediterranean theatre. Six of these officers were despatched by air in August 1944. By the end of 1944 the position as regards medical officers became relieved to a sufficient extent to enable some medical officers to proceed on furlough at approximately the same time as their respective reinforcement groups. Until the end of the Italian campaign there were insufficient surgeons available, and in the final battles of the campaign considerable strain was thrown on the senior experienced surgeons. With the cessation of hostilities there was a steady flow of medical officers back to New Zealand with their respective reinforcement groups, and this relieved the pressure on the civilian medical service in New Zealand.

Alien Doctors and Students

At its meeting on 18 October 1939 the National Medical Committee received a resolution from the British Medical Association that no enemy alien practitioners should be employed in the military forces of the Dominion. This resolution was conveyed to the Army Department. In actual fact, no alien doctors were employed in the military forces.

The National Medical Committee on 19 July 1940 considered a letter addressed to the Prime Minister by some eighteen refugee doctors and dentists undergoing courses at Otago University, wherein they unreservedly placed their services at the disposal of the Government to be utilised in whatever capacity it might be decided would be of most use in the country. They agreed to practise only in such places as should be determined by the Government, and stated that they would welcome the passing of regulations making these undertakings binding upon them.

At the same time a letter was received from the Medical Council recommending that, in view of the fact that many New Zealand doctors were leaving their practices to render war service, the Government should be asked to introduce legislation which would enable control to be exercised over the practising location of foreign doctors in New Zealand.

The National Medical Committee recommended to the Government that the offer of the refugee students at Otago University be accepted; that power be taken to send these students, at the completion of their courses, to such places as the Government appointed on the recommendation of the National Medical Committee; and that for the protection of the interests of New Zealand doctors absent from their practices on military service, similar powers be taken to enable the National Medical Committee to control the locations of practice of such other refugee alien doctors as were practising in New Zealand. Representations on similar lines were received on 17 August 1941, in view of the fact that about ten alien students were due to qualify at the end of that year. The Government, however, was not prepared to move in the matter.

On 14 April 1942 the National Medical Committee forwarded on to the Minister of Health a resolution from the Medical Advisory Committee, Auckland, that some authority be created and a scheme devised whereby the services of alien doctors could be controlled throughout the Dominion. In his reply of 27 April 1942 the Minister of Health stated that he could see no justification for selecting any group of those doctors who had qualified and placing them in particular localities. The alien doctors, he stated, had, with one exception, all agreed to work in districts that appeared to require most the services of medical men, and they had co-operated with the Minister of Health in his desire to improve the medical service in different localities. The Minister of Health did not see that any action could be taken to compel alien doctors to submit to the decision of some authority unless it applied to all medical men.

On this last point the National Medical Committee had in September 1940 and February 1941 urged that authority be vested in the committee to determine the practising locations of newly qualified or newly registered medical practitioners and to regulate the establishment of new practices, but without any results. Similarly, a recommendation made by the Controller of Manpower in September 1943, and endorsed by

the National Medical Committee in October 1943, that this measure of control be applied, as it was in the case of dentists, met with no response from the Government.

Sixth-year Medical Students

Students in their final year were granted provisional medical registration and were employed as house surgeons in hospitals where there were two or more fully qualified doctors on the staff. In some cases up to half of the staff of house surgeons was composed of sixth-year students. The students also were given military commissions and temporarily posted as medical officers in camps in New Zealand. The Medical Council, as the authority in charge of medical registration, acted jointly with the National Medical Committee in the matter. The action proved highly successful in the relieving of qualified men for service in the forces and for civilian practice, and at the same time provided the sixth-year students with valuable clinical and military experience.

APPENDIX A

The numbers of medical men in the fighting forces at 14 January 1942 were as under:

(1) Total who have entered Army, Navy, or Air Force since outbreak of war:		
(a) Army and Air Force	298	
(b) Navy	13	
	——	311
(2) Posted to Overseas Units:		
Army	231	
Navy	8	
	—	239
Less Wastage		
Killed in action	4	
Wounded	3	
Prisoners of war	13	

Missing		**10**	
			30
Returned to New Zealand		**15**	
			45
			194
(3) On service in New Zealand:			
On full-time duty in New Zealand at Headquarters, Camps, Fortresses, Air Stations, etc., together with reinforcement medical officers awaiting despatch overseas			**75**
(This total of 75 includes 8 of the 15 returned from overseas.)			
Navy			**5**
			274
Total present effectives			
(4) Summary:			
Present effectives			**274**
Wastage overseas			**30**
Returned to civil practice			**4**
Returned from overseas but awaiting decision re retention			**3**
			311

In addition to the 274 shown as present effectives, the Army estimates that further requirements were as under:

(1) Estimated number required during 1942 for Middle East as reinforcements and replacements		**48**
(2) As reinforcements at Fiji		**6**
		54
(3) In New Zealand on full mobilisation:		
Medical men	**100**	
Students	**49**	
		149
		203

APPENDIX B

Medical Officers on Whole-time Service, October 1943

	Total Establishment	*Present Strength*
Army		
Middle East (2 Division)	153	143
2 NZEF IP (3 Division)	81	74
Pacific Islands garrisons, United Kingdom and Hospital Ships	24	24
New Zealand		44
		285
RNZAF		
New Zealand	61	41
South Pacific	9	11
United Kingdom		1
		53

IV: RECRUITMENT OF SKILLED PERSONNEL

IV: Recruitment of Skilled Personnel

Generally speaking, there was no controlled recruitment of skilled personnel whose services were valuable to medical units, apart from masseurs, prior to the establishment of the National Service Department in the middle of 1940. Those more particularly concerned were chemists, laboratory technicians and X-ray technicians. As regards other valuable and necessary staff (especially for a military hospital) such as dietitians, cooks, occupational therapists, splint-makers, chiropodists, mental attendants, plumbers and carpenters, no special arrangements seem to have been made at any stage for their proper drafting in adequate proportions to medical units.

With the introduction of the National Service Emergency Regulations in 1940, employers and institutions were able in the public interest to present a case on appeal against skilled personnel joining the armed services. There was also then a greater measure of control which enabled those released to the Army to be posted to a medical unit, where they could best be utilised.

Masseurs

In November 1939 the National Medical Committee considered it desirable to set up a masseurs sub-committee, as masseurs would be required for military hospitals with our overseas force, and also for the treatment of wounded returned to New Zealand. With the approval of the Minister of Health a sub-committee was appointed, its functions being those of compiling a register of masseurs wishing to enlist, reporting on their capabilities and fitness for selection, and giving general advice on matters relating to massage.

The members of the committee were the Head of the Massage School

at Dunedin Hospital (representing the Department of Health) and a male and a female representative of the New Zealand Trained Masseurs' Association. When an inspecting masseuse was added to the staff of the Health Department in 1941 in connection with the arrangements for treatment in public hospitals of wounded returning from overseas, she was added to the sub-committee.

The sub-committee made nominations for the selection of two masseuses to go overseas with each general hospital. Those selected were granted the rank of staff nurse in the NZANS. Altogether ninety-eight physiotherapists offered their services as volunteers.

The masseurs sub-committee was mainly a selection committee and, with the very limited number of masseurs required for service with the armed forces, it was necessary for it to meet on only a few occasions.

There was a shortage of trained massage staff in New Zealand, and when masseurs were called up for National Service, the Health Department lodged appeals as a matter of course for their retention in New Zealand in the hospital services.

Chemists

In the months immediately after the outbreak of war a number of pharmacists enlisted in the armed forces and many of these were mobilised in units other than medical. The Director of Pharmacy, of the Department of Industries and Commerce, in February 1940 sent out a questionnaire to enable a survey to be made of the position. He also pointed out that the requirements of the Medical Corps in New Zealand at that time were four dispensers only, but that in addition two would probably proceed overseas with each echelon. There was also the possibility that there would be a demand for experienced men to carry on the necessary dispensary services under the Social Security administration.

It was found that 21 persons employed in pharmacy had then been

accepted for service and a further 14 were awaiting acceptance. These facts were considered by the Medical Committee on 19 March 1940. The committee viewed with alarm the depletion of chemists and judged as undesirable the practice of accepting chemists for combatant units. It was thought that the original purpose of the Manpower Committee should be adhered to, whereby the profession was classed as a reserved occupation. These views were communicated to the Director of the Registration Branch, Social Security Department (who shortly afterwards became Director of National Service). Manpower District Advisory Committees were at that time being set up to deal with individual applications of employers for the postponement of military service of their employees, and also to administer the Government's policy in relation to manpower. No occupation or industry was to be regarded as completely or permanently reserved, but ample time would be given to train or secure replacements as the occasion merited. It was arranged that all enlistments of pharmacists be referred to the Director of Pharmacy for his recommendation.

In July 1940 the Director of Pharmacy informed the National Medical Committee that 45 pharmacy personnel had been called up and a further 37 enlisted, and that if all who had enlisted were eventually called up, difficulties would be created. This return did not include qualified persons drawn from hospital dispensaries or employers other than pharmacy owners. The National Medical Committee recommended to the Director of National Service that no more pharmacists be called up for military service except as dispensers in the Army Medical Corps. Arrangements were made by the Director of National Service accordingly, and recruitment from the profession was therefore fully controlled.

Representations were on occasions made by the Health Department in support of applications coming before the Armed Services Appeal Boards, when the Department was requested for its opinion by the board concerned, through the Director of National Service.

This latter procedure also applied in the case of laboratory and X-ray

technicians.

V: RECRUITMENT OF NURSES

V: Recruitment of Nurses

At a meeting of the National Medical Committee on 15 June 1938 a Nursing Council was formed, as already stated, to advise the committee on all matters pertaining to army and civilian nursing in time of war and to link up the activities of the Red Cross Society of New Zealand and the Order of St. John in the training of voluntary aid detachments, both male and female.

The Nursing Council first met on 31 August 1938. It then drafted a scheme covering the enrolment and organisation of the registered nurses of the Dominion in the event of a national emergency. This scheme was based on the assumption that the public hospital system of New Zealand would be the nucleus of all arrangements. It was forwarded to the National Medical Committee on 6 September 1938. At a meeting of the committee on 26 September the report of the Nursing Council was considered, amended in some details, and then adopted as amended.

It was further agreed that the matter of voluntary aid detachments and a representation of appropriate bodies on both the Medical Committee and Nursing Council be the subject of a memorandum to the Secretary of the Organisation for National Security.

The situation in regard to the Army Nursing Service in 1938 was that there was a Matron-in-Chief, the Principal Matron and three other matrons, and a list of 114 staff nurses, none of whom had been promoted to the rank of sister. This list of staff nurses was most unsatisfactory, in that it was made up partly of women who had been on active service during the First World War and were therefore too old to be sent overseas again. Another group was comprised of recruits who had answered an appeal by the Matron-in-Chief some four or five years previously, and who at that time were not asked for any medical

certificate, with the result that some were not medically fit, while others were then over 50 years of age.

It therefore seemed to the Nursing Council that the logical course was to revise the list, retiring women who were over age or were not fit, and from the list to promote some to the rank of sister and then to call for recruits on a new basis. As the public hospitals of New Zealand would be used for the care of sick and wounded in the country, it was decided to call a certain percentage from the employ of each hospital board, leaving the selection of that percentage to a committee within the hospital – perhaps the chairman of the board, the Medical Superintendent and the Matron – a system used in England in some of the hospitals, for instance, the London Hospital. Instead of there being a Territorial reserve, each hospital would undertake to supply a certain number of nurses. On this basis nurses would only be taken on active service from the public hospital system.

The representations of the Nursing Council on the reorganisation of the Army Nursing Service as approved by the National Medical Committee were passed on to the Organisation for National Security on 5 October 1938. The latter body referred the draft scheme to the Army Department, which approved that the establishment of the active list of the NZANS should be as follows: Matron-in-Chief, Principal Matron, 4 matrons, 2 assistant matrons, 30 sisters, and 30 staff nurses.

By July 1939 the matrons and sisters had been appointed. On 22 August 1939 the Registrar of Nurses, Department of Health, who was also chairman of the Nursing Council, asked all branches of the New Zealand Registered Nurses' Association to compile a list showing all the registered nurses who would be available in times of national emergency.

Developments on Outbreak of War

With the outbreak of war the Nursing Council met again, on 5 September 1939, and gave consideration to the matter of recruitment of nurses for the New Zealand Army Nursing Service, and to the necessity

of supplementing the required nursing staff of hospitals should this become necessary. A summary of the recommendations is as follows:

(1) Examinations for appointments of matrons and assistant matrons for army service to be temporarily waived.

(2) Existing personnel of the active list, Army Nursing Service, to be medically examined and power given to replace any member on the active list found to be physically unfit.

(3) Nurses on the army list who are employed in key positions in the Health Department and in public hospitals not to be released for service in Camp Hospitals.

(4) All applications from nurses for enrolment in the Army Nursing Service to be referred to the Director, Division of Nursing, Department of Health, and a register of names of nurses so applying to be kept by the Department of Health, and the final selection to be made by the existing Nursing Council.

(5) Sufficient senior staff to be retained in public hospitals so that training of nurses is continued on a satisfactory basis.

(6) Should there be a demand for nurses to serve overseas the selection to be based on:

(*a*) Recent experience in public medical and surgical hospitals.

(*b*) Nurses holding senior administrative positions not to be considered as several experienced sisters are already on the Army Nursing Service establishment.

(*c*) Army Department to requisition to the Health Department for nursing personnel as required, setting out number, rank, qualifications and age of the nurses required.

(7) That in view of the fact that it is known that there are approximately 300 New Zealand registered nurses in England, a register of New Zealand nurses volunteering for service with any British military unit be established at the High Commissioner's Office, London.

(8) That in view of the present shortage of nurses in New Zealand, permits for travelling overseas should not be granted to New Zealand registered nurses unless the circumstances surrounding the application are for urgent private reasons.

The report was submitted by the Director-General of Health to the Minister of Health (Hon. P. Fraser) on 7 September 1939, was approved by him on 8 September, and was approved by the Minister of Defence

(Hon. F. Jones) next day. This authority provided the basis for the reorganisation, recruitment and development of the NZANS during the war.

The Matron-in-Chief (Army and Air) was informed of the approval of the Nursing Council's recommendations by the Ministers of Health and Defence, and steps were taken by the Department of Health to forward to her a copy of the register of nurses applying for enrolment in the NZANS.

On the question of the final selection of nurses required for the NZANS, the Nursing Council recommended, and the National Medical Committee on 16 January 1940 approved, an alteration in method to the following:

Each hospital matron, the nursing adviser to the Plunket Society, and the Director, Division of Nursing, Health Dept., will hold a list of their own nurses who have volunteered and who have been approved by the Nursing Council, such list being divided into those suitable for Sisters' and Staff Nurses' positions. As further nurses are required, in order to assist the controlling authorities of the various hospitals and nursing services, instead of the Nursing Council calling them up individually, the final selection will be left to the various controlling officers to make from the approved lists.

Amendments of 8 September and 26 October 1939 to the Standing Orders for Mobilisation 1939, Appendix XXIV, set out the medical requirements and defined the ages for the acceptance of members on the active list of the NZANS for service within New Zealand and overseas. For overseas service the age limits were set down as matrons, 35–45 years, sisters, 25–45 years, and staff nurses, 25–40 years.

The question of uniforms for the NZANS demanded the immediate attention of the Matron-in-Chief. A limited amount of material was held by the Director of Ordnance Services. Arrangements were completed for this to be made up into uniforms and for the securing of further supplies and the production of more uniforms. The matter of a uniform allowance

was taken up, both for home and overseas service, and an outfit allowance of £40 and an upkeep allowance of £10 a year was approved.

The badges previously used by the NZANS for nurses proceeding overseas were reinstated as the official badge in December 1939.

It was found that, without any particular stimulation, the rate of volunteering for active service by nurses far exceeded the demand. By 4 December 1939 there were 340 suitable nurses to draw on.

There was an estimated number of 350 New Zealand nurses in the United Kingdom and elsewhere and it was approved that these nurses should also be considered for overseas service. (A few joined 1 General Hospital when that unit was in England with the Second Echelon but very few were recruited after that, partly because they were required for the emergency medical service in the United Kingdom and for military service with the British Forces.)

In December 1939 the DGMS (Army and Air) recommended that three NZANS nurses should accompany each transport going overseas with the First Echelon, for the reasons that they could assist at any surgical operations, they would be available in the event of an epidemic among the troops, and they could, at their destination, be attached to British hospitals pending the arrival of a New Zealand general hospital and so gain valuable local knowledge.

The first group of eighteen members of the NZANS went overseas with the First Echelon in January 1940 and were attached to a British hospital in Egypt until Helwan hospital was established. All transports leaving New Zealand with troops during the war carried a small staff of nursing sisters.

By May 1940 over 1200 nurses had volunteered for service overseas. These had been classified by the Nursing Council into nurses in the employ of hospital boards, private hospitals, Health Department and the Plunket Society, and those engaged in private nursing.

In deciding how nurses should be best recruited without interfering with the home service to too great an extent, it was decided by the Nursing Council that nurses should be called up on a *pro rata* basis, not only in regard to the service in which they were employed, but also in regard to the district in which they lived. By May 130 nurses had been medically examined and had either been called up or were in the process of being called up for military duty. Of these, 52 had gone overseas and 18 nurses were on duty at camp hospitals. In calling up nurses for overseas hospital staffs consideration was given to the need for special experience in operating theatre, dietary, X-ray, orthopaedic and infectious diseases services so as to ensure that the hospitals were staffed adequately.

In some districts refresher courses were arranged for non-active nurses to ensure that they would be familiar with the local hospital and with modern hospital conditions.

Publicity was increased in May 1940 to encourage suitable girls to enter the nursing profession. This, together with the war position, resulted in waiting lists at all training schools being considerably increased. At Auckland and Wellington Hospitals additional classes of nurses were taken in to the Preliminary Training Schools. At Auckland an additional class of forty had entered by May and a further additional class of forty was proposed. At Wellington an additional class of seventy-five had already entered. In Dunedin an increase had been made in the usual class and in Christchurch a training school for nursing aids was opened at Burwood Hospital.

With the development of Air Force stations in New Zealand there was a call in 1941 for sisters for the station hospitals. It was arranged to appoint senior women, preferably former military sisters, to these posts, so that they could act in any emergency in the absence of the medical officer and could be responsible for the discipline of the hospital. The first few of these women were all appointed charge sisters as they were all sisters of the higher rank on the reserve.

The functions of these sisters seconded to Air Force station hospitals were rather different from those in army camp hospitals and were regarded as relatively more important for the reasons that: (*a*) There was usually only one sister; (*b*) The remaining staff were VADs (or their equivalent) or men; and (*c*) the sister had to conduct sick parades in the absence of the medical officer.

The number of secondments to the RNZAF eventually totalled 26 (19 in New Zealand and 7 in the Pacific). By this time it had become necessary to enlist younger sisters in view of the more trying conditions of overseas duties.

In 1943 three sisters who had been appointed to the Naval Base hospital in Auckland from the staff of the Health Department were transferred to the NZANS in order to give them rank while dealing with sick naval personnel.

The Nursing Council continued to function as a valuable adjunct of the National Medical Committee throughout the war. It controlled the intake of registered nurses and masseuses for the armed services. The staffing of five general hospitals and a casualty clearing station for 2 NZEF overseas, military camp hospitals, naval and Air Force hospitals in New Zealand, and hospital ships made a serious drain on the trained nursing personnel of the Dominion. As many as 375 sisters were serving overseas at one time – in the Middle East and Italy, in the Pacific and in hospital ships.

During the war 602 members of the NZANS served overseas, while some 65 positions in home service medical units were staffed by the NZANS – at military camp hospitals, Air Force station hospitals, naval base hospital and the Polish children's camp hospital.

Care continued to be taken to call up nurses from districts on a population basis as well as according to their branch of nursing. In utilising this method the Council withheld approval of volunteers in key civilian positions until other nurses were trained to replace them. This

maintained a core of skilled staffs, thus avoiding disruption of hospital routine, and protected the training of student nurses.

In addition, consideration had to be given to the increased demands of civil hospitals, which had to cope with the influx of hundreds of returned service patients and the added work due to the social security hospital benefit. In the facilitation of administration and the avoidance of undue hardships the Nursing Council was a most valuable supplementary body to the National Medical Committee.

A Civil Nursing Reserve was established in New Zealand in March 1943. Its purpose was to provide a reserve of registered nurses and voluntary aids from which hospital boards could obtain temporary assistance to overcome staff shortages. The staffing problems had become acute because service patients in New Zealand were nursed in civilian public hospitals, new wards and new hospitals were being opened, and at the same time staff requirements fluctuated, thus preventing continuity of permanent appointment in some cases.

The Civil Nursing Reserve was administered by the Health Department and controlled by the Nursing Division of that Department. Enrolments were dealt with by the Regional Nursing Officers in the District Health Offices, who interviewed all applicants and forwarded medical and X-ray reports, but allocations and assignments to hospitals were all made by the Nursing Division of Head Office. Voluntary aids were recruited through the organisations of the Order of St. John and the Red Cross – in every case the applicants were recommended by their commandant and had obtained at least two certificates and undertaken sixty hours' training in hospital.

During the four years in which the reserve functioned it fulfilled a very useful purpose. At its peak it employed fifty registered nurses and over 400 voluntary aids and was assisting over thirty different hospitals, many of which could not have carried on without this supplementary staff.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VI: RECRUITMENT OF VOLUNTARY AIDS

VI: Recruitment of Voluntary Aids

From the end of the First World War until shortly before the outbreak of the Second World War, the New Zealand Red Cross Society allowed voluntary aid training to lapse almost completely. A few areas, notably Hawke's Bay (as a result of the Napier earthquake) and Wellington continued with training. Consequently there was not in the Dominion any large national reserve of trained and experienced voluntary aids ready for service in case of national emergency. Not until 1940 was there any major impetus in the formation of new detachments and the volunteering and training of voluntary aids.

When the Nursing Council was formed in August 1938 as a sub-committee of the National Medical Committee, it had the duty of linking up the activities of the Red Cross Society and the Order of St. John as far as they concerned the training and use of voluntary aids. These two societies nominated a representative each, and they, with the members of the Nursing Council, constituted what came to be the Voluntary Aid Detachment Council.

This council held meetings on 24 March 1939 and 13 April 1939. At these two meetings consideration was given to the organisation and training necessary for Voluntary Aid Detachments. A scheme was prepared and this was considered by the National Medical Committee on 18 April 1939, the members of the committee expressing the opinion that it represented a simple and efficient organisation which would give the voluntary aids some practical training in hospital routine and procedure. The report was then sent to the Organisation for National Security on 24 April 1939.

Measures were taken to enable voluntary aids of the Red Cross Society and Order of St. John to undertake training in public hospitals

as planned by the Voluntary Aid Council, and numbers of voluntary aids were trained from 1940 onwards, valuable help being given by the matrons and sisters of many hospitals.

Regulations for the organisation of detachments were issued by both the New Zealand Red Cross Society and the Order of St. John so that sub-centres of both organisations could enrol and train members. Although at first it was noted that groups of older women volunteered more freely than the younger women, this position soon altered.

On 8 May 1940 the National Medical Committee agreed that the designation of the Council be changed to Voluntary Aid Council and recommended that the Joint Councils of the New Zealand Red Cross Society and the Order of St. John should issue a certificate to those voluntary aids who had completed their hospital training satisfactorily.

The scheme for giving voluntary aids some hospital training was pushed forward. These aids were required to hold certificates in home nursing, first aid and hygiene, and it was arranged that they should be given sixty hours' hospital training and twelve hours' theory each year, the practical work being given in periods of either four or eight hours a week. Employers were encouraged to release these aids from their staffs to undertake this training, and by May 1940 some 1000 girls had had their first period of sixty hours' hospital training and a further number were waiting to undertake this training as the opportunity offered.

Each hospital matron had at that time a list of trained aids who could be called on in emergency. Already Auckland, Wellington and Christchurch and some of the smaller centres had made use of this scheme and had found it very satisfactory.

In order to assist the staffing of emergency hospitals, further arrangements were made for a short period of experience to be given in hospital kitchens and laundries to women who were experienced housekeepers, so that domestic staffs could be supplemented in the same way as the nursing staffs.

Early in 1941 the Air Force made requests through the Voluntary Aid Council for nursing aids for duty in the RNZAF hospitals in New Zealand, and a certain number were recruited from both the voluntary organisations. (Certain difficulties later arose in that the Air Force wished to use these aids for other than nursing duties. The position was eventually corrected as it seemed wasteful of woman power to use aids for duties other than those for which they had been trained.)

In August 1941 the annual general meeting of the New Zealand Red Cross Society unanimously passed a resolution to the effect that the Director-General of Medical Services be approached regarding the advisability and expediency of making more extensive use of their trained personnel for hospital duties, not only in the Dominion but more particularly overseas. In passing on these recommendations to the Adjutant-General the DGMS strongly supported them. Word was also received at this time of the decision of the Australian Army to enlist 720 female VADs to serve in AIF hospitals in theatres of war so as to release a proportion of soldiers for other military duties.

Then on 3 September 1941 the Matron-in-Chief took up with the DGMS the question of employing nursing aids in military camp hospitals as manpower was being depleted and the shortage of medical orderlies was becoming more acute. It was thought that in Territorial camps nursing aids would be especially valuable.

In 1941, too, discussions on the subject of the employment of voluntary aids in hospitals had been initiated in 2 NZEF. Preliminary conferences were held in July 1941 and DDMS 2 NZEF recommended in September that hospital nurses, and also a clerical section, be sent from New Zealand. They would enable men to be released from hospitals for field units. It was decided that the employment of women in kitchens or cookhouses was inadvisable owing to the hot climatic conditions of the Middle East.

The upshot of all these developments was that voluntary aids were accepted for duty in service medical units both at home and overseas, 2

NZEF in the Middle East having agreed to their employment in hospitals.

In November 1941 the War Cabinet approved proposals for the selection and despatch of 200 women for service overseas in the Middle East with medical units of 2 NZEF. The unit was to be entitled the New Zealand Women's War Service Auxiliary (Overseas Hospital Division) and was to be under the control of the Matron-in-Chief, Army Nursing Service. Besides the nursing section there was to be a small clerical section. War Cabinet directed that the selection was to be based on fixed quotas from districts in accordance with the density of population. The WWSA was primarily concerned with the selection of the fourteen women for clerical duties, and the National Voluntary Aid Council was the body which undertook the selection of the voluntary aids for the nursing section, the names of those selected being submitted to the WWSA for transmission to the Army.

The selection was completed by 9 December 1941, at which time it was known that the New Zealand Medical Corps had lost large numbers of men as prisoners in Libya. The group was able to be sent overseas in the HS *Maunganui* on 22 December 1941. Some were disembarked at Fremantle to proceed farther in the *Oranje*, but the main body arrived in Egypt on 25 January 1942 and were posted to the three New Zealand general hospitals.

On 17 April 1942 a deputation from members of the Joint Council of the New Zealand Red Cross Society and Order of St. John waited upon the Minister of Defence to put the voluntary aid operations of these societies on a proper footing. Some misunderstandings had arisen following the establishment of the Women's War Service Auxiliary and the direction in January 1942 that women required for the Army would be recruited from this body. The matters raised by the deputation were the subject of a conference with the Associate Minister of National Service. The points raised at the conference were examined by the Director of National Service, whose recommendations for the selection of voluntary aids for overseas service largely supported the system used for the first hospital section sent overseas, and these recommendations

were approved by the Minister.

In November 1942 the position was further clarified when the National Service Department advised the National Voluntary Aid Council that in future all voluntary aids required for home service with the armed forces (Army, Navy or Air Force) would be selected from the pool approved by the National Voluntary Aid Council, and this would be the only method of recruitment. Voluntary aids undertaking home service duties could be seconded for duty overseas, but in the case of the Air Force they were required to serve one year on home service before going overseas. In view of this, girls could be accepted for duty in the Air Force at 23 years of age instead of in their 25th year. Voluntary aids could be granted a release for army duties other than nursing only after consultation with the Health Department.

Decisions made in July 1942 altered the title to New Zealand Women's Army Auxiliary Corps (Voluntary Aids), brought in the rank of nurse and replaced the WWSA badge by the NZMC badge.

By February 1944 there were 268 voluntary aids on service overseas in the Middle East and Pacific with 2 NZEF, while there were 50 on duty at military camp hospitals and 119 on duty at Air Force station hospitals in New Zealand.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VII: HOSPITAL ADMINISTRATION AND TREATMENT

VII: Hospital Administration and Treatment

Military Hospitals in New Zealand, 1914-18

At the beginning of the 1914–18 War the repatriated sick and wounded came under the control of the Health Department. Military wards or annexes were provided at the larger hospitals to meet the need of the large numbers of military patients. Difficulties were met, especially with regard to discipline in the hospitals, and in March 1918 Cabinet decided that the Defence Department should have the sole responsibility for the after-care and treatment of both discharged and undischarged disabled soldiers. The special military orthopaedic teams trained in England became available and special military hospitals and annexes were set up in all the main centres and at Rotorua, Hanmer and Timaru. These provided efficient service and continued in action till the greater part of the work was over, and then were largely absorbed into the civil hospitals.

During the 1914–18 War orthopaedic treatment, due to the dominating personality and energy of Sir Robert Jones, was developed to a high pitch of efficiency. This influence extended to the New Zealand Medical Corps and there was established in our hospitals, especially at Brockenhurst, very complete physiotherapy and plaster departments, splint shops and curative workshops. Medical officers were also sent for instructional courses to Alder Hay and Shepherd's Bush orthopaedic hospitals. These officers on their return to New Zealand were utilised to staff special military hospitals and military branches of the civil hospitals, and eventually became the nuclei of orthopaedic departments in the civil hospitals which inherited the knowledge, the staffs and the equipment provided by the Medical Corps.

(It is interesting to note that vocational training was developed in

our hospitals in England in 1917 and that splint shops and curative workshops were in full swing at the same period. Nevertheless, in spite of very strong efforts, these were not provided during the Second World War for a considerable period after the hospitals were established overseas.)

Hospital Administration and Treatment, 1939-45

In accordance with its terms of reference the Medical Committee applied itself to planning the organisation of hospitals in New Zealand in the event of emergency. A very comprehensive scheme was drawn up based on Cabinet's decision of 7 February 1938 that all treatment would be arranged by the Health Department, which was most favourably situated to review the facilities for medical treatment generally, and that where possible men would be treated in institutions nearest their homes.

A medical appreciation of the requirements of the Army on home defence was worked out by Colonel Bowerbank in March 1939. Calculations allowed for a daily sick rate of 0.3 per cent and an average stay in hospital of seven days for 40 per cent, 21 days for 50 per cent, and an indefinite period in hospital for the remaining 10 per cent. After twenty-one days the admissions would balance the discharges. On this basis it was estimated that a total of 1175 beds would be required for sick in New Zealand from the force expected to be mobilised, and this would entail the provision of extra accommodation by hospital boards at Auckland, Wellington, Christchurch and Dunedin, and possibly at Napier and New Plymouth. Battle casualties in New Zealand at an estimated 6 per cent of troops would require 1594 extra beds.

The plan for emergency hospital organisation was worked out from this basis on the assumption that a home defence force would be actively engaged, and fell into three parts:

(*a*) Organisation of additional emergency hospitals in certain cities and towns.

(*b*) The possible transfer of patients from vulnerable areas.

(*c*) The arrangements for their reception in areas to which they were transferred.

Any of these courses entailed additional emergency hospital accommodation and plans for the evacuation of patients by the hospital boards; and also the staff to look after the patients, as well as equipment. The hospitals were to be classified according to their facilities and staff and were to be grouped into areas with coordinated action under a group officer. The formation of mobile teams within the groups was envisaged. Case history sheets in special envelopes, marked as to the type of case, were to accompany each patient. Transport by train or ambulance car was to be handled by the transport section of the ONS. The Government was to buy and store additional equipment and supplies in suitable localities. A register of medical practitioners was to be drawn up by the BMA and of nurses by the Department of Health. Emergency helpers were to be recruited, including members of the Red Cross Society and Order of St. John. Three convalescent depots of 400 beds each under civilian control were suggested. The operation of the scheme was to be under the Department of Health. The scheme as outlined was purely general in form and the implementation was left largely to the hospital boards.

The plan had naturally to be adapted to suit the situation when a home defence force was not mobilised on the scale originally catered for, and, instead, men were called up primarily for overseas service after training in mobilisation camps, and the home defence force was gradually built up but never actively engaged in New Zealand. Further adaptations had to be made to provide hospital treatment for the sick and wounded invalided back to New Zealand from the overseas forces. [1]

From military camps, patients whose treatment would take more than forty-eight hours were to be admitted to civil hospitals, whose

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[1] The plan was a basis for organisations in 1941 and 1942

when the Hospital Emergency Precautions Service was constituted. See Section X.

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responsibility began at the hospital door. The obligations placed on hospital boards by the Health Department, advised by the Medical Committee, were twofold. First, they had to accept at any time such patients as were sent to them by the three services from camps and, later, from overseas. Second, that in respect of camp sick, and later in respect of those returning from overseas whose condition was such as to enable them to return to military service at the conclusion of their hospital treatment, hospital boards had to carry on the treatment to a stage at which the soldier, on return to a military camp, would be fit to take up active training after not more than forty-eight hours' light duty.

Instructions were issued to the hospital boards on the care and treatment of army sick and wounded. (See Appendix A.)

The decision made by Cabinet, on the recommendation of the National Medical Committee, that the Health Department should have the full responsibility of hospital treatment in New Zealand of the armed forces for all cases hospitalised for more than forty-eight hours was a very important one. As stated by the DGMS in November 1939: ‘The Medical Committee of the ONS advised, the Committee of the ONS recommended, and Cabinet confirmed the principle that the Army will retain in Camp Hospitals soldier patients only for a period of 24 to 48 hours and that all cases of serious illness or injury, or cases requiring treatment for a longer period, shall be evacuated to the base civilian hospital. That from the time of evacuation until the soldier returns as grade I he will be the sole responsibility on the one hand of the Health Department which will make the arrangements, and on the other hand of the Hospital Boards which will arrange for the necessary accommodation. That the Health Department shall be wholly responsible for the organisation and control of Convalescent Hospitals.’

This decision had far-reaching effects. It determined, firstly, that

very little provision needed to be made at the military camps for the accommodation and nursing of patients. It also, naturally, led to congestion at the main hospital near which the military camps were sited. This congestion was accentuated by cases being referred by the Army for remedial treatment and also by the introduction of hospital benefits under the social security legislation.

A hospital staffing problem also arose due to many of the medical men and other personnel attached to the hospitals proceeding overseas. The policy seems to have been determined for several reasons. First, there was the saving of medical and nursing personnel by concentrating the work in the established civil hospitals. Then there was the economy of building, both of existing buildings and especially with regard to any erection of new buildings which, if attached to existing hospitals, would after the war be of immediate use for the civil population. Finally, there was political antagonism to military control.

Epidemics

The epidemic of influenza in November 1939 found the civil hospitals not fully prepared, and the point was raised that the Army had been criticised for not having made provision in military camps for influenza patients, though this was not an army responsibility. It was conceded, however, that the extent of outbreaks of such a nature was absolutely unpredictable and that generally speaking hospital boards, with the assistance of the Army Medical Service, had met the position expeditiously. With the experience gained it was held that the measures to be taken in the future would probably be adequate. A hospital, at first staffed by the Army and later by the Wellington Hospital, was opened in the racecourse grandstand at Trentham in November 1939, and officers of the Health Department had visited different parts of New Zealand to consider buildings, such as racecourse grandstands, halls, etc., which could be utilised as emergency hospitals to cope with any epidemic. (*Note:* A number of such buildings, notably Trentham and Ellerslie grandstands, were used by the hospital boards for subsequent epidemics.)

Liaison

Arrangements were made for the hospitals to furnish regular returns to the Army Department so that next-of-kin could be informed. It was agreed that the local Area Officer or a military medical officer should be in touch with hospitals daily, and that there should be close co-operation between the local army authorities and the hospital superintendent to avoid any unnecessary stay in hospitals by soldier patients. (*Note:* An army organisation known as the Sick and Wounded Branch was later developed. See earlier chapter.)

To ensure that Army obtained the necessary information, written and verbal, concerning army patients, it established in the main centres a Hospital Officer for sick and wounded with a clerical staff. The officer's duties were to get information at once concerning any patient admitted in order to notify the next-of-kin, to collect hospital notes of treatment for the patient's file, and to arrange through his Sick and Wounded area officer for medical boarding by application to the Regional Deputy. He also arranged all transport, leave, or transfer to another hospital. He saw that medical documents and file and an escort attendant went forward with the patient to the next hospital. This was found necessary owing to delay in some hospitals in providing the information required. Applications for admission to hospital went from Army to this officer and he arranged on the spot with the hospital. At the main hospitals accommodation was provided by Army for this sub-branch of the Sick and Wounded Branch, whose administration was at first centralised in the office of the Adjutant-General, but which later was decentralised to army areas.

Convalescent Patients

The disposal and treatment of convalescent patients from camp and civil hospitals was a matter which had not been properly provided for and which was further discussed at an important conference held on 17 July between representatives of the Health Department, the Army and

the hospital boards.

The Director-General of Health stated that the disposal of convalescents presented a most difficult problem both to hospital boards and to the Army, particularly in regard to men recovering from diseases such as influenza. While reasonable provision was made for the long-term type of convalescent recovering from operations or from chronic protracted illnesses, hospital boards did not customarily provide for those recovering from complaints such as influenza, who require little more than rest and whose convalescence might normally be expected to be rapid. In the case of civilian patients it was the practice to discharge them as soon as the need for active medical and nursing attention ceased, leaving patients to make their own arrangements in regard to the recuperative period between hospital treatment and the point at which they could resume their ordinary occupations. Military patients recovering from influenza, who had to be kept in hospital until they were fit to return to camp and take up duty within forty-eight hours, therefore presented a new problem to hospital boards.

Colonel Mead, the Adjutant-General, stated that the same difficulties arose in regard to men treated in camp hospitals. It was not in the interests of discipline to have these men on excused duties in the camp except for very short periods, and it was not practicable in most cases to grant leave and send them home for a few days' convalescence. Some special provision such as the establishment of convalescent depots should be made, but in view of the Government's policy that the hospitalisation and treatment of soldiers was to be the responsibility of the hospital boards and the Health Department, the Army Department was powerless in the matter.

Considerable doubt was expressed by some of the hospital board representatives as to whether provision for convalescents could be regarded as coming within the definition of 'treatment' and whether, therefore, this was a hospital board function.

In the general discussion it was found necessary to distinguish

clearly between the two types of convalescents:

(*a*) The long-term convalescent who still required a measure of specialised medical attention and graduated exercise, etc., under expert supervision. (These would be dealt with principally at special convalescent hospitals provided by the Government at Hanmer and Rotorua.)

(*b*) The short-term convalescent who required no further active hospital treatment, but who merely required hardening off and some form of exercise until such time as he was fit to resume normal military duties.

The army representatives agreed that provision for the latter class was not a function of the hospital boards and, moreover, that they were not suitable cases for special convalescent hospitals such as Hanmer and Rotorua.

The conclusion reached by the meeting was that two separate types of institution would be required:

(1) *Convalescent Hospitals*, such as Hanmer and Rotorua, where active treatment such as physiotherapy, etc., would be provided.

(2) *Convalescent Depots* established in the proximity of military camps for the reception of convalescents who merely required hardening off, and where physical training could be provided until such time as they were fit to return to duty.

The consensus of opinion in regard to the responsibility for military patients was that the actual hospital treatment of the patient should be the function of hospital boards (the term treatment to be interpreted liberally and patients to be kept, if necessary, for a slightly longer period than was the practice with civilian cases), and that at the conclusion of such hospital treatment the patient should become either: (*a*) a long-term convalescent whose further treatment at a convalescent hospital such as Hanmer or Rotorua would be the responsibility of the Health Department, or (*b*) a short-term convalescent requiring admission to a convalescent depot for physical training and hardening off, the provision of which should be the responsibility of the Army.

It was formally resolved that a recommendation be made to the

Government to this effect.

It was also decided that in the event of convalescent depots being established by the army authorities the Health Department and hospital boards would be consulted as to the location of the buildings in order that, on the cessation of hostilities, such buildings might serve a useful purpose. In a measure the recommendation made to the Government by the conference as regards the institution of army convalescent depots was contrary to the original Government policy of using only civil institutions, on which the Army was to be entirely dependent.

However, a year later, on 18 July 1941, War Cabinet approved an expenditure of £325,835 to build three convalescent depots under army control. Construction on the depots at Raventhorpe (ten miles south of Papakura), Silverstream and Burnham began in 1941 and was completed towards the end of that year. Each depot had a capacity of 300 and the staffs consisted of army medical personnel and special army instructors, some of whom were obtained from the Physical Welfare Branch of the Education Department. Provision was made for an administration block, physiotherapy and massage departments, a gymnasium, a lecture hall, a picture theatre and sports grounds.

Silverstream, however, was not used as a convalescent depot for Central Military District as, upon its completion, it was made available to the United States medical services then in New Zealand, and after it was vacated by the United States Forces it was taken over by the Wellington Hospital Board. Alternative sites for a convalescent depot in Wellington were considered, but nothing was finalised. In Trentham Camp unfit men were temporarily attached to the NZMC Training Depot until fit for duty. As far as convalescent patients from civil hospitals in the Wellington area were concerned, they mostly went direct to their homes – as indeed they seemed to do from most civil hospitals, for the other two convalescent depots never functioned to capacity. Liaison between the military and civil authorities as regards hospital patients was not fully established, and as long as there existed the loophole of allowing patients to proceed to their own homes on discharge, advantage

was bound to be taken of it. There was something to be said for this course, especially psychologically, but it certainly entailed a considerable wastage of manpower.

For instance, in the eighteen months just prior to April 1942, over 2500 cases from the Racecourse Hospital (Trentham) alone were granted sick leave for periods from three days to three weeks. When men went home on sick leave, not a few of them sent certificates from local practitioners recommending extensions of their leave, and there was no option but to grant the extensions.

In addition, a time lag in Sick and Wounded Branch getting the men back into camps was unavoidable, and, even then, numbers required admission to a convalescent depot before they were fit to resume full duty with their units.

Convalescent Hospitals

Prior to the opening of the Services Convalescent Hospital at Rotorua on 18 March 1942, a few convalescents not requiring any treatment were sent, mainly from the Waikato, to the Bryant House, Raglan. The convalescent hospital at Rotorua had 150 beds, was run by the Health Department, and was used by all three services. It was the convalescent hospital for all orthopaedic cases in the North Island, and usually cases requiring only massage or physiotherapy were sent there. It was primarily for patients returned from overseas, but as these never filled the hospital it was used for New Zealand service patients and an occasional civilian case. The hospital was equipped for physiotherapy, occupational therapy and minor surgery, including facilities for plaster technique, and was handy to recreational facilities and baths. There were nursing sisters with overseas military experience on the staff.

Cases of neurosis were not sent to Rotorua but to Hanmer Convalescent Hospital. Prior to the war, Hanmer was purely a centre for functional neurosis cases, and during the war continued to be the centre for the treatment of such cases, military and civilian. However, as a

counterpart to the Services Hospital, Rotorua, the Health Department reopened for orthopaedic cases two old wards built during the First World War. With the extension of the already existing massage and physical training facilities, Hanmer Hospital was able to deal with the same type of case as the Rotorua Hospital. As there were fewer patients from overseas than anticipated, the Hanmer Hospital was able to accommodate other cases and advantage was taken of this by the Christchurch Hospital, which transferred there not only fracture cases in plaster or requiring physiotherapy but any type of case requiring convalescence. (Later in the war a Plastic Surgery Unit was established at Burwood Hospital, Christchurch, first under army control and later under civilian control.)

Summary

The original plan of the Medical Committee for treatment of sick did not make adequate provision for army personnel in the convalescent stage after discharge from hospital. Difficulties were encountered soon after troops were first mobilised, and not all of them were successfully solved during the course of the war. The convalescent serviceman illustrated the weakness of the divided control of medical administration. His control came partly under the Health Department and hospital authorities, partly under the Army Medical Service, and partly under the Sick and Wounded Branch of the Adjutant-General's office. Generally speaking, the convalescent serviceman was able to make the most of the lack of liaison and unity, and most of his convalescence was spent at home, with a consequent wastage of manpower during the administrative delays involved in his ultimate return to his unit. The situation reached its extreme of inefficiency in the cases where servicemen were granted extensions of sick leave on pay by non-commissioned officers of the Sick and Wounded Branch and resumed their civilian occupations temporarily while still members of the forces.

The utilisation of convalescent depots as training centres for

convalescents, such as was seen in Britain and also in the British Army overseas, would be a very distinct improvement in our army organisation, and the provision of physical training personnel of the British type would undoubtedly be of enormous advantage to our New Zealand forces.

Treatment of Invalids from Overseas

The Director-General of Health at a conference on 17 July 1940 outlined the procedure laid down for the reception of sick and wounded service personnel returning to New Zealand from overseas.

By arrangement with the Army Department several weeks' notice of returning men would be received and a list with details of the patients, nature of disabilities, etc., would be available to hospitals. These details would be confirmed if possible a day or two before arrival, and any modification necessitated by changes in the condition of patients during the voyage would be notified.

Patients on disembarkation would be sent to the four main centres and would be admitted to the four principal hospitals, which would act as clearing houses for the distribution of patients. The principal base hospitals would retain those cases from their own hospital board areas, together with those requiring specialist treatment from other adjoining board areas. The remaining patients would be transferred to their own district hospitals within forty-eight hours. (Actually hospital ships usually came to Wellington and clearance was effected through the Casualty Clearing Hospital on Aotea Quay to local hospitals.)

Details were given by the Director-General of Health of the extra accommodation being provided at the four main hospitals in order to deal with these patients. Estimates had been made by the Army Department of the numbers likely to be returning each month and the proposed accommodation was based on these figures. The number of beds required in the four main hospitals, both for the treatment of their own patients and for the temporary reception of those who would be

transferred to other districts, was approximately:

Auckland	**150**
Wellington	**100**
Christchurch	**60–80**
Dunedin	**40**

Additional buildings were required for this purpose and the Government accepted the responsibility for the provision of these extra blocks.

Arrangements were made for the erection of blocks of 150 beds at Auckland, 100 beds at Wellington and 60 beds at Christchurch. In Dunedin the Hospital Board already had subsidiary institutions which would be available. It was explained that the new blocks being erected would not necessarily be used for soldier patients, but by internal rearrangement wards in the main hospitals would probably be freed for them.

Action had also been taken to bring the orthopaedic departments of the main hospitals up to date and to provide occupational therapy, gymnasiums, etc. Arrangements were made by the Government for the acquisition of the necessary orthopaedic equipment.

The hospitals at Auckland, Wellington, Christchurch and Dunedin were recognised by the Health Department as base hospitals for the treatment of orthopaedic cases, and all such cases were referred to one of these hospitals. Patients were under the care of orthopaedic surgeons, who could arrange for further treatment at the hospital nearest the patient's home. It was decreed that all orthopaedic operations had to be performed at a base hospital, and all patients requiring such operations were transferred from local hospitals where they were under treatment. The facilities for physiotherapeutic treatment at Hanmer and Rotorua hospitals were used and patients were often transferred there.

Clearing Hospital, Aotea Quay, Wellington

In 1941 a Clearing Hospital was erected on Aotea Quay, Wellington, to receive sick and wounded servicemen from overseas. By a decision of the War Cabinet of 20 February 1941, it was staffed and administered by the Health Department. It was considered that before any man was allowed to depart from the Clearing Hospital a thorough clinical examination was essential. This was not only to determine as precisely as possible what further treatment was necessary, but also, in the serviceman's interests, to ensure that a complete and authoritative record of his condition on arrival in New Zealand might be available in connection with any future claim for war pension or other assistance.

Four medical boards were made available immediately upon the arrival of a hospital ship to accelerate the clearance of patients. Serious cot cases were naturally not held for boarding at the Clearing Hospital but were sent direct from the ship's side to Wellington Hospital for attention until they were ready for transfer to their own districts; or else, if seriously ill, patients were held on the hospital ship and taken to Lyttelton on the ship. Except at first, when the Health Department staffed the ambulance trains, the Army was responsible for seeing men to their destinations.

The Clearing Hospital had accommodation for 288 patients. There were six wards, each with its kitchenette, sister's duty room and other necessary services. In addition there was a large lounge and dining room for patients, a staff dining room and large central kitchen. There was also a suite of medical board rooms, X-ray room and dental examination room. [1]

Arrangements were made to demobilise rapidly all returned men no longer fit for military service. They thereby became civilians and their treatment was the responsibility of the War Pensions Branch of the Social Security Department. There was, however, an inherent weakness in this form of administration. The Health Department as organised had only an advisory authority in hospital matters. It had no executive control and no executive staff. The individual hospital boards had full

control of their own administration, which was limited to the treatment of patients in their institutions. The Hospital Boards Association, which forms the link between the hospitals, has again no function except the co-ordination of policy – it has no function in the treatment of patients.

The hospitals themselves had only limited means of co-ordinating hospital treatment for servicemen and no means of providing transport either of the service personnel in New Zealand or of the sick and wounded arriving from overseas. The difficulties were overcome at first by the enlisting of voluntary organisations and workers and the army authorities to help fill the breach. Later the Sick and Wounded Branch took over the responsibility of administration of the transport of patients to and from the hospitals, both from camps and depots and from overseas, and also of cases for remedial treatment. It acted as liaison between the hospitals, the Army and the Health Department, including the Regional Deputies. At first it did everything from a central office, but later decentralisation was carried out with a natural increase in efficiency.

Although the service was solely for the sick and wounded it was not under the administration of the DGMS but under the Adjutant-General. There would appear to be a need in the future for the

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[1] **See also Section II, Medical Boarding.**

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proper implementing of the services carried out by the Sick and Wounded Branch into the regular army administration, presumably connected with the Army Medical Service.

Plastic Surgery Unit - Administrative Problems

Before the outbreak of war a scheme in regard to plastic surgery was submitted to the DGMS by Dr H. P. Pickerill, the only highly specialised plastic surgeon in New Zealand at that time, he having been attached to the special hospital at Sidcup, England, in the First World War. The

scheme recommended plastic surgery for New Zealand soldiers in New Zealand.

In November 1939 the question of plastic surgery came in for further consideration. At that time the presumed location of the New Zealand Division was England and the DGMS considered that treatment in England would be preferable. The matter was referred to the National Medical Committee for consideration, but was presumably deferred until more definite information was available on the location of the New Zealand Forces.

Sir Harold Gillies, a New Zealander well known as a plastic surgeon in the First World War and in England between the wars, offered, in a letter to the Director-General of Health in February 1940, to accept one or two suitable medical officers for special training in plastic surgery so that they might carry on the work for New Zealand soldiers. The offer was accepted by the National Medical Committee on 14 June 1940, the DGMS undertaking to select one or two suitable medical officers.

The selection of suitable surgeons was not an easy matter. The chairman of the Royal Australasian College of Surgeons suggested the appointment of a surgeon doing post-graduate work in England. Towards the end of 1940 two such junior New Zealand surgeons were chosen, commissioned in the NZMC, and began special training. As recommended by Sir Harold Gillies, their courses were to be short ones to enable them to undertake primary treatment in 2 NZEF. Sir Harold also recommended that a more senior surgeon be chosen for a course of twelve months, which would enable him to continue necessary treatment in New Zealand. (Dental officers had similarly to be trained.)

For the senior appointment, with a view to setting up a plastic surgery department in a civil hospital in New Zealand, the DGMS chose Captain Brownlee. [1] On 14 January 1941 War Cabinet approved the proposal submitted by the DGMS for the ultimate organisation

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[1] **Lt-Col J. J. Brownlee; Christchurch; born Christchurch, 2**

Sep 1902; surgeon; plastic surgery specialist, 2 NZEF, Jan 1941–Jul 1942; OC Plastic Surgical Unit, Burwood, Apr 1943–Sep 1944.

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of a Department of Plastic Surgery in New Zealand, the sending of Captain Brownlee to England, and the arrangement that he continue to serve as a plastic specialist as a medical officer of the armed forces under the direction of the DGMS, in conjunction with the Director-General of Health, for at least one year.

This arrangement, involving the ultimate establishment of an army medical unit as part of a civil hospital for the treatment of men invalided from the overseas forces, was not in accordance with the general policy of hospitalisation of sick and wounded servicemen. Probably the DGMS had in mind the special army orthopaedic units which functioned with marked success in the Christchurch Hospital and at Trentham Camp during the First World War. It would seem that at the outset the National Medical Committee should have explored the possibility of sending surgeons and dentists for training in their civilian capacities, in spite of the fact that the original offer of Sir Harold Gillies specified 'medical officers', as probably he did not have in mind any strict interpretation of the term. It was a Health Department responsibility under the policy of providing for all hospital treatment in New Zealand in civil institutions.

In their training in England the medical and dental officers were given every facility and help by the leading specialists, both surgical and dental. They then joined the 2 NZEF in the Middle East, where they were attached to different medical units, the main plastic centre being set up at the Helwan Hospital, Captain Manchester [1] being the surgeon in charge, and the other two junior surgeons being attached to other medical units as the work required. A special bath unit was set up in Helwan Hospital and proved of great value, not only in cases of burns but in the treatment of ordinary wounds.

Major Brownlee, not being required in New Zealand, spent some time

visiting all medical units in 2 NZEF and explaining the latest treatment of facio-maxillary and other cases requiring plastic surgery, and then proceeded to New Zealand to set up the main plastic unit there, taking with him Captain Gilbert, [2] the senior dentist, and equipment which had been obtained in England. He arrived back in New Zealand in September 1942. The unit began to function at the end of the year as a department of the Christchurch Hospital and under the control of the North Canterbury Hospital Board.

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[1] Lt-Col W. M. Manchester; Auckland; born Waimate, 31 Oct 1913; medical practitioner; RMO 22 Bn 1940; seconded for plastic surgical training in UK, Nov 1940; 1 Gen Hosp 1942–43; asst surgeon, Plastic Surgical Unit, Burwood, 1944; OC Plastic Surgical Unit, Burwood, 1944–47.

[2] Maj G. H. Gilbert; Christchurch; born Wellington, 20 Nov 1908; dentist; NZ Dental Corps, 2 NZEF, Dec 1940–Mar 1943; Plastic Surgical Unit, Burwood, Apr 1943–Jun 1944.

This arrangement had been agreed to by the DGMS and the DGH and treatment was to be available for members of the armed forces, and also for civilians, but the question as regards army or civilian status was to be reviewed in twelve months' time. The department started functioning under dual control with some army and some civil personnel, and under both army and hospital board administration. In November 1942 difficulties arose as to the continuous treatment of the cases as they left the forces and returned to civilian status, and arrangements were made for the patients to retain the privileges of army personnel. The position was anomalous and it would have required great tact and skill to carry on without friction.

War Cabinet, in January 1943, approved the expenditure of £4500 on alterations and additions to Burwood Hospital to provide a plastic surgery unit. (The ultimate cost was £10,000.) The Army Department was to supply the special plastic surgeon, a dental officer trained in

maxillo-facial work, a junior medical officer and three medical orderlies. The Hospital Board was to supply all other staff, including nursing and domestic staff. Certain special equipment was to be provided by the Army Department and the usual hospital services by the Hospital Board. The accommodation at first was thirty-six beds. The unit opened at Burwood on 8 May 1943.

The available beds were soon occupied, and by October 1943 there was a waiting list of about forty military personnel. Expansion as regards accommodation and staff was called for. At the same time it was felt that the civilian nurses should be transferred to the army staff to make for smoother working.

A conference between the Minister of Health and representatives of the Army and Health Departments was held on 5 November 1943. The extension of accommodation was arranged and it was agreed that the Army should provide all the staff. The Director-General of Health, who was not at the conference, subsequently disagreed with the proposal regarding staff, anticipating that considerable dissatisfaction would arise on the part of the nursing staff of the Burwood Hospital on account of the disparity in pay and working conditions between the army nursing staff and the civilian nursing staff, and that difficulties would arise as regards hospital services. The conference arrangements were therefore held in abeyance.

The system of dual responsibility for accommodation and staffing was not working satisfactorily. One solution suggested by the Director-General of Health was to convert the plastic surgery unit from a partial to a complete military unit, independent of civilian control, and transfer it from Burwood Hospital to a military camp close to one of the main centres. This was investigated but suitable hospital buildings were not available. The other solution was to convert it into a civilian department of a public hospital. The senior plastic surgical specialist, Lieutenant-Colonel Brownlee, indicated that he was not prepared to serve in a civilian capacity.

A conference between representatives of the Army and Health Departments and the North Canterbury Hospital Board on 21 March 1944 agreed to a policy, which was, in substance, a continuance of the original arrangement. Additional accommodation, as well as massage and occupational therapy departments, was to be provided. It was a compromise solution. Some finality had to be reached to overcome a deadlock in which the treatment of patients might be impaired.

Friction, however, still continued to develop and in September 1944 the resignation of Lieutenant-Colonel Brownlee was accepted. Lieutenant-Colonel Manchester, who had done excellent work in plastic surgery at Helwan Hospital and had had by that time long army experience, was appointed in charge of the department.

Smoother running was soon evident and further efforts were made to overcome the accommodation problem and the shortage of staff. The system of dual control was, however, ultimately eliminated when the plastic surgery unit became a wholly civil unit on 1 March 1945. It continued to treat patients from the armed forces as well as civil patients and functioned with great success.

In retrospect it would appear that the establishment of a plastic surgery unit in New Zealand under dual control was doomed to failure. Cabinet had definitely decided that all hospital treatment in New Zealand should be under the control of the Health Department and carried out by the civil hospitals. There was antagonism to the establishment of military hospitals.

In spite of this the senior personnel of the proposed unit were appointed as army officers and came under the control of the DGMS. This was essential as far as the overseas work in 2 NZEF was concerned. It was unnecessary with regard to the personnel of the unit working in New Zealand, who could well have carried on as civilians. If it had been agreed that a services hospital be established under complete control of the DGMS (with the plastic unit attached), then smooth and efficient running could have been expected. Success might even have attended

the unit if it had been segregated as a complete military block attached to a civil hospital, in a similar manner to the orthopaedic unit in the Chalmers block of the Christchurch Hospital in the 1914–18 War. It was too much, however, to expect that the department as constituted would function smoothly in an atmosphere antagonistic to any military control of hospital treatment.

Dual Control of the Service Patient in New Zealand

The Director-General of Mental Services was never satisfied that the plan as approved by the majority of the National Medical Committee avoided the difficulties of dual control by the Health Department and the Army Department which had been found unsatisfactory in the First World War. He contended that the lessons learnt from the experience of the previous war, when certain functions of the Health Department were ultimately taken over by the Defence Department, were not applied. The soldier, he maintained, was primarily the responsibility of the Defence Department and, though it was necessary and indeed advisable to make use of the hospital accommodation provided by the civil hospitals, the soldier, even while an in-patient of the civil hospital, was still the responsibility of the Army.

The Director-General of Health considered that there was no real difficulty as regards dual control. He held that the soldier remained the responsibility of the Army, and that the Hospital Board became a contractor supplying hospital care and treatment.

Discipline

The opinion originally expressed by a majority of the National Medical Committee (not shared by the DGMS) that 'discipline and control of the sick soldier could be equally well maintained by civilian superintendents and staff' was in some measure disproved. The Army was called upon to appoint full-time NCOs (not New Zealand Medical Corps) to assist in control of service patients at hospitals. However, in the four main centres and other hospitals there was generally little

trouble as most of the patients were bedridden and under treatment. At Rotorua Convalescent Hospital there was never any trouble.

From Dunedin, where there were fewer patients and where the soldiers were in wards with civilians, there were complaints that sick and wounded returning from overseas had no privileges regarding visitors. In other centres relatives could visit the soldiers' wards daily, but in Dunedin with mixed wards an attempt was made to restrict visitors to civilian hours. This difficulty was overcome. The only places where there was any real trouble was at Hanmer Convalescent Hospital, Pukeora Sanatorium and Burwood Plastic Surgical Unit.

The Director-General of Health pointed out that there were few, if any, complaints from public hospitals. Hanmer and Pukeora hospitals were stated to be always notorious for disciplinary troubles, even with civilian patients, this being due to the class of patient admitted.

To understand the causes, one must know the history of the policy laid down by Cabinet. Until 1943 the service patient was kept on service pay for only twelve months, and if still an in-patient automatically ceased service pay and went on to a pension if he would not be fit for a higher grade than III. This in fact implied that all overseas sick and wounded still on treatment were downgraded to Grade III.

Thus at Hanmer there were three kinds of patients: the man on home service; the ex-overseas man still on treatment; and the ex-overseas man, not now a soldier but a civilian, and under treatment as a war pensioner.

These three types, many of whom were up-patients merely convalescing, did not mix. There were many complaints from the Medical Superintendent and the Army provided a senior NCO to be on the spot to control discipline. However, he had no control over the ex-soldier now a civilian, and it was not until the soldier was kept on army strength and pay until completion of his treatment that complete disciplinary control was maintained.

At Pukeora Sanatorium conditions were worse as there were the following types of patient: home servicemen, returned soldiers from overseas (some of them civilians again), and civilian patients.

With the change of policy, whereby patients remained in the service on pay, better discipline was maintained.

Modifications of Hospital Policy

The Army Medical Service had arranged for only a minimum of camp hospital accommodation, while the Health Department had arranged with the respective hospital boards for hospital accommodation based on the medical appreciation drawn up by the Director of Medical Services for the defence of New Zealand on 31 March 1939.

Within a few weeks of the onset of war it was necessary to modify this, as the Director of Health was not prepared to accept for in-patient treatment soldiers suffering from venereal disease. In consequence of the ruling of the Minister of Health, small hospitals were erected in the three main camps, Papakura, Trentham and Burnham, to deal with all cases of venereal disease in the Army and Air Force in the three military districts, and this arrangement worked very satisfactorily.

Again as a result of a War Cabinet recommendation in 1940, the Cabinet again modified its original decision and ruled that convalescent depots for short-term convalescent soldiers should be placed fully under the control of the Army.

This decision, in the opinion of the DGMS, was largely due to the realisation that the Health Department, almost entirely an administrative body primarily concerned with the preservation of health and the prevention of disease, did not have the staff available for running a hospital or convalescent depot when the hospital boards were not prepared to accept the responsibility.

Evaluation of Hospital Policy during the War

In accordance with the immediate pre-war decisions of Cabinet, the Army Medical Service erected only minimum camp hospital bed accommodation, which was all that was necessary if patients were to be retained for only forty-eight hours. This forty-eight-hour rule resulted in an unnecessary number of minor disabilities being transferred to the base hospitals. The direct result of this was that base hospitals, especially at Wellington and Auckland, which were chronically congested before the war and with long waiting lists, became still further congested and embarrassed by the daily admission of men with minor disabilities and mild infectious diseases, who in civilian life would have been treated at home. These base hospitals had highly trained staffs, elaborate departments and equipment for dealing with cases of the most serious and difficult diseases, and the overhead cost of a bed in one of these hospitals was very great in comparison with that of smaller hospitals dealing with cases of minor diseases and disabilities.

The Health Department did everything possible to meet the ever increasing demands of the Army, but it could not but be acknowledged that the system, modified though it was after the onset of war, was still clumsy and prevented that close co-operation which was so essential between the military camps on the one hand and the hospitals on the other.

The DGMS did not advocate any revolutionary change in the administration or control of the civilian hospital or its soldier patients, but sought means whereby closer contact could be developed between the Army Medical Service and the Sick and Wounded Branch of the Army on the one hand, and the hospital boards on the other, and measures of dual control eliminated in order to increase efficiency and bring about a better understanding on the part of the general public and the soldier. This was not a criticism of the Department of Health or of the National Medical Committee, but it was felt that certain of the duties which the Department of Health had been called upon to carry out were more properly those of the Army Medical Service.

There is no doubt that the latter was in a position to look after a large proportion of the minor sickness cases, and in fact did retain many patients in camp hospitals for up to a week. The Army Medical Service also could well have been made responsible for the sick and wounded soldiers immediately upon discharge from hospital. In a measure the Sick and Wounded Branch of the Army assumed control here, but the disregard of the branch for the necessity for professional medical opinion led to a number of shortcomings involving a delay in the return of soldiers to duty.

Generally speaking, the policy of all treatment being arranged by the Health Department did enable requirements to be met adequately during the war, but there were some fundamental weaknesses. The most important was that there was never any single individual, or even department, with absolute control over the army sick and wounded. The Health Department could act only through the local hospital boards, and actually had no real control over any individual hospital. The Director-General of Health could request and bring moral pressure to bear on hospital boards, but he could not dictate to them. Difficulties were multiplied when hospitals which were generally overcrowded prior to the war had to cater for additional patients as a result of the Government's inauguration of social security hospital benefits.

The Director-General of Health expressed the opinion after the war that the decision to put the responsibility on the Health Department was a wise one. The building of special military hospitals would have been costly and difficult with the shortages of staff and materials, whereas the civil hospital service had a Dominion-wide coverage. He considered that these hospitals cared for the army sick and wounded smoothly and efficiently with the maximum economy in medical manpower, supplies and equipment. Permanent benefits accrued to the hospitals from new buildings (some built as convalescent depots for the Army or hospitals for the United States troops) and from expanded and improved special departments.

The actual admission and treatment of New Zealand service personnel in the civil hospitals seems to have functioned satisfactorily apart from the congestion caused in the hospitals. Arrangements were made to alleviate this by providing more camp hospital accommodation, although officially the forty-eight-hour period was never altered.

New buildings were also erected at the main hospitals and this helped considerably. Strain was thrown on building construction by the necessity of making provision for the American forces stationed in New Zealand, but the hospital buildings erected were later of great use to the civilian hospitals in these areas.

The rigid curtailment of the treatment of patients in the military camps seems to have created unnecessary difficulties in the civil hospitals. If provision had been made for the treatment of minor illness in camp hospitals there would not only have been a considerable saving in sorely needed and expensive hospital accommodation, but there would also have been more provision for the training of medical military personnel in the camps. The camp hospitals would not have required expensive buildings or equipment and could have been run by the camp medical and nursing personnel.

The larger question of the establishment of military hospitals or military annexes of civil hospitals as already mentioned has several angles. From the military point of view there would be many advantages in the establishment of military hospitals in New Zealand. There would be the natural ease in administration and control, the return of service personnel to convalescent depot or duty, the boarding for discharge or for grading, the retention of discipline and morale. A training school for service overseas would be available for officers, sisters and other army personnel. Exchange of personnel would be possible between overseas and home forces. Most important of all would be the treatment of returned servicemen by medical personnel with experience of their special problems. The establishment possibly of one central hospital and service wings in the other main hospitals would be sufficient, the special

departments of the civil hospitals being naturally utilised to prevent duplication.

There seems to have been some antagonism to the segregation of military personnel in the civil hospitals, and, even when segregated, ex-service officers when available were not given control of their treatment, which would have seemed logical and psychologically sound.

The difficulties that arose as regards discipline would have been obviated at least to some extent by the understanding of an ex-service officer. This does not mean that the ex-service patient should be treated differently from the civilian. There is, on the contrary, much to be said against the, to many, quite unnecessary and wasteful dispensations of all sorts of extras, including cigarettes, to ex-servicemen suffering from even ordinary ailments contracted in New Zealand. The money spent could surely be put to better use.

The obliteration of the military identity of the ex-service patients has also made it impossible to obtain satisfactory data concerning their hospitalisation. The arguments against segregation have been already stated as being economy in hospital buildings, accommodation and staff, and the prevention of any wasteful hospital construction not able to be utilised afterwards for civilian use. It is felt that some agreement could be reached so as to satisfy both points of view and that certainly political viewpoints should not enter into the question. There should be a co-ordinated medical service available for emergencies, administered by the most experienced men available, and if the armed services are functioning they should be called upon to give as much assistance as possible and not unnecessarily overburden the civilian services.

APPENDIX A — INSTRUCTIONS TO HOSPITAL BOARDS IN CONNECTION WITH THE CARE AND TREATMENT OF ARMY SICK AND WOUNDED

APPENDIX A
INSTRUCTIONS TO HOSPITAL BOARDS IN CONNECTION WITH THE CARE AND TREATMENT OF ARMY SICK AND WOUNDED

Issued by Director-General of Health, November 1939

1. **From the moment a sick or wounded man is admitted into Hospital administered under the provisions of the Hospitals and Charitable Institutions Act, while he remains a soldier and until he is fit to rejoin the Army he is the responsibility of the Department of Health.**
2. **For this purpose Public Hospitals have been selected to treat all cases.**
3. **The sick from camp will be delivered to the Hospital door by the Army Department which will be responsible for arranging with the Hospital Superintendent for all admissions.**
4. **When ready for discharge the Medical Superintendent of the Hospital treating the Army patient will telephone the local Area Officer of the Army for instructions as to disposal, at the same time advising him whether the patient should have leave before returning to camp or report direct thereto from the Hospital.**
5. **The Army Department has no jurisdiction over the actual treatment of the patient while in a public hospital, but the Hospital authorities are expected to give all information required by the Army to the Area Officer concerned.**
6. **Unless considered necessary for Hospital Administration purposes, it is not obligatory to provide what are known as Military Wards or Wings. Soldier patients can be placed in ordinary wards in the same manner as civilians, but in all cases, officers must be separated from other ranks while in Hospital.** [1]
7. **All ranks admitted to hospital to be subject to the ordinary hospital discipline, but should breaches of discipline be such as cannot be satisfactorily dealt with by the Superintendent the case is to be reported to the local Area Officer for disciplinary action.** [2]
8. **Should any difficulty arise between the Hospital authorities and local Army representatives regarding any detail in connection with the**

hospitalisation of the patient, the matter is to be referred to the Department of Health, Wellington, and not to Army officers.

9. **The whole purpose of the scheme for the treatment of Army sick and wounded is to utilise the resources of the Public Hospital System in its usual sense and, as stated in paragraph (1), this is the responsibility of the Department of Health.**

Medical Boards for Soldier Patients found unfit for further Service after Treatment in Public Hospitals

If in the opinion of the Medical Superintendent a soldier patient is unfit for further service with the Army, he will advise the Area Officer and notify the Medical Officer of Health of the District in which the hospital is situated, who will make arrangements with the Regional Deputy to supply a Medical Board to examine the case.

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[1] **This was later modified.**

[2] **This had to be modified.**

APPENDIX B — MONTHLY AVERAGE NUMBER OF SERVICE PERSONNEL REMAINING IN CIVIL HOSPITAL DAILY, APRIL-SEPTEMBER 1941

APPENDIX B

Monthly Average Number of Service Personnel remaining in Civil Hospital Daily, April-September 1941

	AREA I Auckland Public Hospital		AREA V Wellington Public Hospital		Convalescent Hospital		AREA X Christchurch Public Hospital	
	Offrs	*ORs*	*Offrs*	*ORs*	*Offrs*	*ORs*	*Offrs*	*ORs*
Apr	1.55	89.50	1.00	53.82		2.45	0.5	22.5
May	2.55	57.50	1.52	72.33		2.38	0.75	21.0
Jun	1.26	67.04	2.40	56.93		1.53	1.92	19.33
Jul	2.00	77.30	1.90	53.90		2.05	0.92	36.36
Aug	4.08	86.58	3.05	64.43		1.19	0.48	32.4
Sep	2.81	82.32	3.35	70.05		0.33	0.54	39.69
Av. for whole period	2.38	82.32	2.2	69.91		1.67	0.85	28.38

APPENDIX C — HOSPITAL ADMISSIONS—ARMY IN NEW ZEALAND — (FROM DGMS REPORTS)

APPENDIX C

Hospital Admissions— Army in New Zealand

(From DGMS Reports)

1 Jun 1941-31 Mar 1942	**Camp and Public Hospitals**	**2.68 per 1000 daily**
1 Apr 1942-31 Mar 1943	**Camp Hospitals**	**28.5 per 1000 monthly**
	***Public Hospitals**	**14.2 per 1000 monthly**
	Camp and Public Hospitals	**1.42 per 100 daily**
1 Apr 1943-31 Mar 1944	**Camp Hospitals**	**34.1 per 1000 monthly**
	***Public Hospitals**	**10.6 per 1000 monthly**
	Camp and Public Hospitals	**1.49 per 1000 daily**
1 Apr 1944-31 Mar 1945	**Camp and Public Hospitals**	**0.98 per 1000 daily**
1 Jun 1945-31 May 1946	**Camp and Public Hospitals**	**0.87 per 1000 daily**

The average figures for hospital admissions are lower than the computation of 0.3 per cent daily sick as allowed for in the plan for emergency hospital organisation.

Return of Infectious Diseases from Camps from 1 January to 30 September 1940

Camp	*Influenza*	*Measles*	*Syphilis*	*Gonorrboea*
Burnham	**1,159**	**19**	**1**	**42**
Fort Dorset	**84**	**48**		
Maori Battalion			**3**	**39**

Narrow Neck	111	3		22
Ngaruawahia *	225	98	1	11
Te Rapa		34 (Sep only)		
Papakura	1,662	8	5	117
Trentham	1,444	180	7	108
	———	———	———	———
Grand Total	4,685	390	17	339

Ngaruawahia Camp closed for months May, June and July.

Cases of Influenza, Third Echelon

Date	*Number Reporting Sick*	*Admitted Camp Hasp.*	*Trans. Civil Hasp.*	*Remaining Camp Hasp.*	*Remaining Civil Hasp.*
1940	Pap. Tr. Bur.	Pap. Tr. Bur.	Pap. Tr. Bur.	Pap. Tr. Bur.	Pap. Tr. Bur.
Week ended 16 May	129 210 52	29 24 13	8 1 1	13 21 16	33 27 9
23 May	1005 961 590	95 52 32	21 4	25 39 30	38 35 8
30 May	1462 1471 901	132 116 81	.49 26 23	30 47 43	66 46 27
Day 31 May	184 251 176	12 22 14	33	25 56 48	74 51 33
1 Jun	117 187 128	21 14 18	3 2 16	35 55 41	76 62 33
2 Jun	108 159 111	21 22 22	13 5 15	31 63 46	83 63 49
3 Jun	200 346 194	25 39 21	6 17 8	47 77 59	99 64 78

Deaths in New Zealand

Disease	Accident
Septicaemia 1	12
Pleurisy	1
Influenza	1

* Includes cases transferred from Camp Hospitals.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

VIII: THE MANAGEMENT OF THE PSYCHIATRIC AND PSYCHONEUROTIC CASES

VIII: The Management of the Psychiatric and Psychoneurotic Cases

In New Zealand at an early stage of the First World War – in 1915 – it was anticipated by Sir Truby King, then Medical Superintendent at Seacliff Mental Hospital, that a number of men would return from overseas suffering from nervous disorders, and he offered his house at Puketeraki to the Defence authorities for the duration of the war as a hospital for such cases. It was contemplated at this stage that the mental and nervous disorders of soldiers would be relatively mild and transitory, and there was a popular sentiment that a man suffering from mental disorder produced by his patriotic efforts for his country should not be 'stigmatised' by committal to a mental hospital.

Sir Truby King's offer was accepted and for some time all went well – the cases which first came to Puketeraki were mild and amenable, and under the care of Seacliff nurses, attendants and doctors, most recovered and were quickly reabsorbed into civil life. These were mainly cases of true neurasthenia and similar functional nervous disorders. 'As time went on, however,' said a report by the Director-General of Mental Hospitals (Dr T. G. Gray), 'we got many mental cases which were in no respect different from those we are accuWH2PMe to see in Mental Hospital. We received epileptics of dangerous tendencies, cases of delusional insanity, depressed cases who were suicidal and not a few feeble-minded men who had eluded the recruiting medical examiners and had got as far as England before the rigorous training disclosed their weakness.'

Under these circumstances a very difficult and at times dangerous situation arose at Puketeraki. In many instances removal to a mental hospital became an urgent necessity, and it was found that neither the

relatives nor the military authorities were available or willing to make the necessary application for certification. General Henderson, the then Director-General of Medical Services, gave the Mental Hospital Department what purported to be a legal authority to hold such cases in a mental hospital and many cases were transferred to Seacliff; but this authority was later found to be illegal and for several years after the war the Department was attacked by the Returned Soldiers' Association and by individuals for its action, although this was dictated entirely in the interests of the soldiers and certainly was not harmful in any individual case. 'During the period between the outbreak of hostilities and 4 August 1919, the number of soldier patients in our care was 334, but these were not all dealt with at Puketeraki or Seacliff. We had urgent representations from relatives that the men should be located nearer their homes and so some were transferred, and others were admitted directly, to Auckland, Porirua and the other Mental Hospitals.'

Between the wars there was a very marked advance in the knowledge and treatment of mental disorders, and especially in the appreciation of psychoneurotic conditions.

At the onset of the Second World War the importance of the problem was stressed by the Director-General of Mental Hospitals to the DGMS. Dr Gray stated:

During the war of 1914-1918, quite an appreciable number of persons who were feeble-minded or who had suffered from mental disorders, managed to enlist and, whilst some were eliminated at the camps in New Zealand, a proportion went overseas and their disabilities were discovered through the rigours of advanced training or service in the field....

At the end of 1918, a review was made of the military patients who came under the care of this Department during the actual period of War, and it was found that out of 303 soldiers, 35 were definitely feeble-minded or had had a previous mental breakdown, whilst 59 had shown a previous predisposition to mental disorder. In other words, of the 303

persons who came under our notice during the war, no less than 31 per cent were unfit for active service before they enlisted. These figures, which I have taken from a review published in our Annual Report for the year 1918, are certainly minimal and from my personal experience I have no hesitation in stating that the percentage should be much higher. Except in those cases committed by a Magistrate, and they constituted only about a half, the familial and previous histories were very cursorily ascertained, owing to the conditions then obtaining. Furthermore, these statistics did not include cases sent to Mental Hospitals in England, nor those who were found untrainable in the various camps abroad and returned to New Zealand, nor the cases returned in the years following the war.... I feel that some routine procedure should be devised to prevent mentally defective persons from being sent abroad.

Arrangements were made during 1940 for nominal rolls of those called in the ballot to be circulated to the medical officers of the Mental Hospital Department, and for the names of all those who had come under official notice at the mental hospitals, in homes for defectives, or at the clinics conducted by those officers, to be reported through their head office to the DMS.

This system did eliminate many psychotic and feeble-minded persons, but it failed in many respects. First, it was brought into operation too late, after many mentally unfit soldiers had gone overseas. Again, such a check could not be expected to be complete and schizophrenics, who had been satisfactorily treated in our mental hospitals, joined the Army and sometimes broke down and were punished for offences due to their unrecognised mental defect. The many feeble-minded persons who had never been in an institution were also not covered. They had been filling a lower grade position in civil life satisfactorily but had been unable to adapt themselves to army life. Many of them broke down in camps in New Zealand, and at one stage the Mental Hospital Department had more psychotic cases from camps in New Zealand than from the Army overseas. During the war no

provision was made for the utilisation of the services of psychiatrists on the medical boards throughout the Dominion. There was also no arrangement made for psychiatrists to be available as consultants either to the boards or to the Regional Deputies.

Consultations by psychiatrists, however, were arranged for in the case of psychotic and feeble-minded men referred from camps in New Zealand. A special psychiatric board was also set up to examine and arrange the disposal of men arriving back in New Zealand who were medically boarded as unfit by 2 NZEF. These arrangements were based on decisions made by the National Medical Committee on 20 November 1940.

On 24 October 1940 a conference of the Organisation for National Security was held at which there was present the Director-General and two officers of the Health Department, the Director-General of Mental Hospitals, the DGMS and Adjutant-General from the Army and a representative of the Treasury. The conference elaborated a decision of Cabinet made on 18 October 'that early provision be made for the reception and treatment of neurasthenics and cases of a like nature on their return to NZ.' The conference agreed that the following arrangements should be made:

(*a*) Case Histories to be adequately prepared overseas.

(*b*) Specialist Boards including at least one psychiatrist to be set up to examine cases immediately on arrival in NZ.

(*c*) Cases deemed suitable to be admitted to the psychiatric wards in the four main hospitals. Other cases to be referred to the clinics, where available, at local hospitals. In all cases the relatives should be notified and asked to concur in all steps taken on the disposal of the soldier. As regards treatment, facilities were available—

(*a*) For psychiatric cases:

(1) Discharge to the care of relatives whenever possible with advice as to methods of committal if required.

(2) Admission to a Mental Hospital by application to a Magistrate by the Medical Superintendent of the General Hospital.

(3) Further observation in Psychiatric ward of a general hospital.

(*b*) Epileptics: The same facilities are available as for the psychiatric cases.

(*c*) Psychoneurotic cases: Usually will go home and advice as to clinics given. In more severe cases treatment at Queen Mary Hospital, Hanmer, is available.

Discharge from the Forces: To be the same procedure as in any other soldiers in that all cases should be discharged if not likely to become fit in 3 months and if not discharged to be reviewed by medical boards at least every 28 days.

Establishment into Civil Life: A special committee closely associated with the Rehabilitation and Social Security Depts. should be set up to ensure that a man gets suitable employment when fit.

Economic independence is the main objective, not compensation.

Institutional treatment: Should not be in separate Army, but in ordinary civil, hospitals.

The War Cabinet on 19 November 1940 approved of the recommendations of the conference and a copy of the report was despatched to HQ 2 NZEF. Instructions were then drawn up by the Director-General of Health to implement the proposals.

A prolonged argument took place later as to the responsibility for the certification of service patients in the civil hospitals, but no change was made and the responsibility remained that of the Hospital Superintendent. Difficulties arose from time to time concerning the provision of attendants for service patients in the public hospitals, but finally the hospitals were only too content to obtain the services of the admittedly untrained army personnel from the camps.

In August 1944 the Secretary of War Pensions, Social Security Department, furnished to the DGMS a valuable report on the boarding and after-care of returned soldiers in regard to matters raised by the

National Patriotic Fund Board. The following is an extract from this report:

There are three types of cases to be considered:

(*a*) (*a*) The psychotics.

(*b*) The neurotics diagnosed as such and having no other disability.

(*c*) Cases of men discharged either as 'fit' or on account of a physical disability who at a subsequent period in their rehabilitation exhibit some evidence of neurosis.

The psychotics are, if institutional treatment is required, first treated in a public hospital and only subsequently removed, when necessary, to a mental hospital. The matter of a special institution for these patients is one for the Mental Hospitals Department, but it would appear that:

(*a*) There are too few patients to warrant it.

(*b*) A separate institution could not be staffed at present.

(*c*) The next-of-kin would object to one central institution for the whole of New Zealand.

Regarding the neuroses I would like to comment as follows:

(1) If Medical boarding were postponed for four months the incidence of neurosis would be greatly increased. Experience has already proved that 'delayed boarding' does infinite harm.

(2) Neurosis cases are followed up regularly and as often as appears indicated. Records show that 90% are returned to regular employment.

(3) The welfare societies, etc., could help by notifying the local War Pensions Officer of any particular case who was considered in need of medical advice or by asking the man to report himself. A medical examination could then be arranged.

(4) The suggestion that each man on his return should be asked to report to his own doctor is to be wholly deprecated. Medical histories are already supplied confidentially to local practitioners on request.

The number of servicemen admitted to mental hospitals in New Zealand from the beginning of the war to 31 May 1944 was 142, of whom 72 were discharged and 3 had died. A large proportion of the 67 remaining were later discharged.

In New Zealand throughout the war there was a close liaison between the Director-General of Medical Services (Army and Air) and the Director-General of Mental Hospitals, and there was little difficulty in carrying out the arrangements decided upon in October 1940. The psychiatric control in New Zealand during the war was reasonably effective and the results of treatment very creditable.

APPENDIX — WAR NEUROSIS

APPENDIX

War Neurosis

Cases Dealt with by War Pensions Board, New Zealand, to 1946

Neuroses—		
Overseas	**5081**	
New Zealand Camps, etc.	**993**	
		6074
Psychopathic personality—		
Overseas	**247**	
New Zealand	**104**	
		351
Dullness and backwardness—		
Overseas	**136**	
New Zealand	**51**	
		187
Psychoses—		
Overseas	**275**	
New Zealand	**88**	
		363
Epilepsy—		
Overseas	**72**	
New Zealand	**33**	
		105
		7080

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

IX: REHABILITATION OF THE DISABLED

IX: Rehabilitation of the Disabled

Amputees

The vast majority of servicemen who had had limbs amputated overseas required no further surgery in New Zealand. Long below-the-knee stumps were purposely left in some cases at the original operation overseas so that, when sepsis had subsided, amputations could be made at the sites of election under the best hospital conditions. This led to some confusion of thought among men who did not understand the surgical complications. Amputees were normally evacuated to New Zealand without delay so that the fitting of artificial limbs could be carried out at the appropriate time.

There was, therefore, a big demand in New Zealand for the supply and fitting of artificial limbs. At the beginning of the war there was very little training in the country in artificial limb making. The manufacture of artificial limbs was largely in the hands of private firms. In 1943 the limb manufacturing and fitting equipment and plant of a large firm in Wellington was taken over by the Rehabilitation Board. It was entrusted to the Disabled Servicemen's Re-establishment League to operate as part of the new vocational training and recreational centre erected by the board in Wellington. From then on, this centre performed the bulk of limb manufacturing and fitting work on behalf of ex-servicemen.

To expand production modern plant and tools had to be obtained and limb-makers trained. The manufacture and fitting of artificial limbs made considerable scientific advance during the war years. To ensure that New Zealanders were able to benefit from the advances in technique, the Director-General of Medical Services and the War Pensions authorities arranged for an experienced orthopaedic surgeon to be sent overseas in August 1944 to the United States of America and

Great Britain to study modern methods and then apply them in New Zealand.

The service to amputees in respect of treatment and the fitting of artificial limbs was at first concentrated in Wellington, where a large and well-equipped limb factory was developed and where the services of an orthopaedic surgeon familiar with modern practice were available. Later part-time orthopaedic surgeons were appointed at Auckland, Christchurch and Dunedin, where facilities for the fitting and repair of artificial limbs were also established. All fittings and major repairs to artificial limbs were supervised or recommended by the orthopaedic surgeons.

When an amputee returned to New Zealand he was examined by an orthopaedic surgeon, who instructed the Supervisor of Artificial Limbs in the procedure to be followed in each case. The Supervisor interviewed each amputee and followed up each case until an artificial limb had been satisfactorily fitted. In numerous cases it was found that owing to the condition of the stump further operative treatment was required. Progress reports were made to the War Pensions Department, which had control of the provision of artificial limbs. When the orthopaedic surgeon indicated that the amputee was ready to be fitted with a limb, the Army's Sick and Wounded Branch arranged for the amputee to be admitted to a suitable convalescent home during fitting.

At one time all amputees were taken to Mowai Home, Wellington, for fittings as no facilities existed elsewhere. Later, facilities were provided in Auckland and amputees were accommodated in the Evelyn Firth Convalescent Home. An attempt was made early in the war to manufacture and fit artificial limbs in Christchurch and Dunedin, but this system proved unsatisfactory. Later, artificial limbs made in Wellington were fitted in Christchurch and Dunedin under War Pensions Department supervision.

The demand for artificial limbs increased steadily from 1942, and owing to the difficulty in obtaining trained operatives, and also

materials and parts, there were some delays in the provision of limbs. Amputees were instructed in the correct use and maintenance of their artificial limbs and were retained on army pay until a limb had been satisfactorily fitted, when a certificate to that effect was given by the orthopaedic surgeon in charge of the case. The artificial limbs provided were of a high standard.

By the beginning of 1948 some 461 out of the total of 491 Second World War amputees had been fitted with artificial limbs. The remaining thirty were fitted with limbs shortly afterwards. Of the 461 who had been fitted, 285 had also received duplicate limbs – an excellent achievement.

In 1942 the Disabled Servicemen's Re-establishment League was appointed by the Rehabilitation Board as the agent of the board responsible for the training of disabled servicemen in new trades and occupations, in order to enable these men to utilise their remaining earning ability and take their place once more in civil life. (This League was inaugurated in 1931 by the New Zealand Returned Soldiers' Association to provide training and employment for disabled servicemen of the First World War.)

The headquarters of the League was in Wellington and there were training centres at Auckland, Wellington, Napier, Christchurch, Dunedin and Invercargill. In each of these centres, disabled servicemen who were unable to return to their pre-war occupations on account of war disabilities were trained in new trades and occupations, payment being made during the training period.

Disabled Servicemen's Re-establishment

Any ex-servicemen disabled to the extent of 40 per cent or more was considered for such training. The League was financed largely by the Rehabilitation Board by way of free grants for administration costs and plant and machinery, interest free loans for working capital, free premises and by training subsidies on a sliding scale.

The League had a training farm at Milson, Palmerston North, at which those disabled ex-servicemen who sought their future on the land were able to obtain training in dairy and pig farming, poultry keeping, bee-keeping and market gardening. The following table indicates the occupations taught in the League centres and the number of ex-servicemen of the 1939–45 War who were training and had completed training at 31 March 1948:

Trade or Occupation	*In Training*	*Employed*	*Completed Training Established in Own Enterprise*
Artificial limb making	8	3	
Basketware	14		
Bookbinding	4	17	
Boot repairing and surgical boot-making	11	31	42
Cabinetmaking	59	69	16
Clerical		3	
Clogmaking		3	
French polishing	25	35	5
Gardening	11	6	
Leatherwork	10	38	2
Mopmaking		3	
Paua-shell jewellery	5	6	2
Printing		6	6
Salesman		3	
Storeman		8	
Umbrella-making		2	
Upholstery	29	13	2
Watchmaking	17	4	4
Weaving	6	3	
Wood-turning	1	6	
TOTAL	206	259	73

The aim of the board was to train seriously disabled men in a suitable occupation up to normal industrial standards so that on completion of training they might be able to take their place in private

industry. However, some were precluded by the nature of their disability from undertaking outside employment, and to these the League's facilities offered a sheltered occupation on completion of training or an avenue of disposal for the products manufactured in their own homes.

Blind Ex-servicemen

The treatment of servicemen who had been completely blinded in both eyes, or whose sight was seriously impaired, fell into two categories. First, there was medical or surgical treatment, which was the responsibility of the Department of Health. Second, there was the matter of training in a suitable occupation, which was a function of the New Zealand Institute for the Blind, Auckland. Servicemen requiring both treatment and training could either be admitted as in-patients to the Auckland Public Hospital or could attend the hospital as out-patients while in training at the Institute for the Blind.

The responsibility for the training of blinded ex-servicemen was assumed by the Rehabilitation Board.

In 1945 the Blinded Servicemen's Trust Board was formed. The purposes of the Trust Board as set out in its deed of constitution were, *inter alia*, '... to acquire and maintain a hostel to be named NZ Saint Dunstan's and such other hostels (if any) as it thinks fit for the training of persons who have been servicemen, as defined by the Rehabilitation Act, 1941, and its amendments, and who have become wholly or partially blind, and to promote the well-being of any such person whether within a hostel or not.'

The Trust Board comprised three members appointed by the Rehabilitation Board and five members nominated by the New Zealand Red Cross Society, the St. John Ambulance Association, St. Dunstan's (England), the New Zealand Institute for the Blind, and the Commercial Travellers' and Warehousemen's Association of New Zealand. This enabled the public to be represented on the Trust set up to provide for the general welfare and re-establishment in civil life of blinded

servicemen.

Following the incorporation of the Blinded Servicemen's Trust Board, a suitable property at Maungakiekie, Auckland, which had been used as a rest home by the United States Forces, was acquired and reconstructed to provide suitable living quarters and training facilities. This training centre, appropriately named New Zealand St. Dunstan's, was officially opened in November 1945.

The aim of St. Dunstan's training was to provide blinded servicemen with a basic source of training in braille, typewriting, etc., to enable them to take their place in the civilian community again, and where possible to provide them with an interesting and remunerative occupation. In some cases these men had been able to engage in industry on the completion of their training, but the majority were precluded from doing so by the nature of their disabilities. Thus, although the original aim of the Rehabilitation Board was to train these ex-servicemen for re-absorption into industry, experience proved that in the majority of cases this was impracticable.

At 31 March 1948 there were 21 blinded men in training at St. Dunstan's, while 13 men had completed their training at that date. While St. Dunstan's trained the visually disabled ex-servicemen, the Blinded Servicemen's Trust Board concerned itself with the settlement of the men in civilian life, if possible, after the training period was completed.

Disability Pensions

Applications by ex-servicemen for pensions were considered by a War Pensions Board, which consisted of a chairman and two other members, one of whom was a medical practitioner and the other was nominated by the New Zealand Returned Services Association. Appeal could be made against the decisions of the War Pensions Board to the War Pensions Appeal Board, which was usually presided over by a senior member of the judiciary, and on which there were two medical members, one of whom

was appointed as a representative of the returned servicemen and the other by the Government. The general administration of the enactments providing for pensions and allowances in respect of war service and the carrying out of the decisions of the War Pensions Boards and the War Pensions Appeal Board were the functions of the Secretary for War Pensions of the Social Security Department.

The War Pensions Boards visited various centres in New Zealand, which enabled them to see ex-servicemen in person. In addition, part-time district medical officers were later attached to the Social Security Department to assist and advise locally on problems of treatment.

A disability pension was payable to a serviceman in the following cases:

(*a*) Where the disablement occurred while on service overseas.

(*b*) Where the disablement was attributable to service with the forces.

(*c*) Where the condition which resulted in the disablement was aggravated by service.

The following is a summary up to 31 March 1950 of the disabilities from which ex-service personnel were suffering at the time of application for pension:

	Type of Service		
Class of Disability or Disease	*Overseas*	*New Zealand*	*Total*
Infections and infestations	1,878	112	1,990
Nervous system	9,599	1,646	11,245
Eye, ear, nose	6,433	1,317	7,750
Circulatory and blood system	1,926	985	2,911
Metabolism	381	172	553
Lungs	3,250	1,077	4,327
Digestive system	3,832	1,128	4,960
Generative system	316	119	435
Gunshot wounds and accidental injuries to	6,020	1,183	7,203

bones, joints, and soft tissues			
Diseases of bones, joints and muscles	5,007	1,807	6,814
Skin	2,339	519	2,858
Tumours and neoplastic growths	149	48	197
Malformations	300	131	431
Amputations	471	18	489
Urinary tract	527	135	662
Debility	442	109	551
	42,870	10,506	53,376

There was a basic weekly rate of disablement pension and, if the serviceman was only partially disabled, the War Pensions Board determined the proportion of this rate at which the pension was to be paid, having regard to the extent of disablement, except for certain specific disabilities for which definite proportional rates of pension had been laid down.

Where the serviceman was suffering from two or more serious disabilities, or was in receipt of a pension for total blindness, the War Pensions Board might also grant an additional amount over and above the basic disablement pension.

X: MEDICAL ARRANGEMENTS FOR CIVIL EMERGENCY

X: Medical Arrangements for Civil Emergency

In 1938, when the international situation became unsettled, the Government, on the recommendation of the Organisation for National Security, decided to take such action as would secure the development of effective emergency precautions organisations throughout New Zealand, and the responsibility for preparing a general scheme was placed upon the Department of Internal Affairs. That department, after consultation with the principal local authorities, issued in 1939 two handbooks under the title 'Emergency Precautions Scheme', one for urban and the other for rural localities. The scheme made provision for the setting up of sub-committees under a central committee to handle the following activities, each under the direction of a controller: Supply, Transport, Medical, Law and Order, Communications, Works, Fire, Accommodation and Evacuation, Finance, and Publicity. The scheme was designed to provide an organisation to meet emergency conditions arising from enemy attack, epidemic, earthquake, or other natural disaster, and was commended for adoption by local authorities.

When the Government decided that the scheme should be part of the precautions for home defence, its administration was transferred to the National Service Department, and this was confirmed by the gazetting of the Emergency Precautions Regulations in August 1940. Power was given for the setting up of a scheme by any local authority, and the Minister of National Service was authorised to direct any local authority to exercise this power if he thought fit. In the earlier phase the membership of the organisations was on a voluntary basis.

Compulsory enrolment in the Emergency Reserve Corps of all male British subjects aged 18 to 65 years who were not already serving in the armed forces or the Home Guard was directed by an enrolment order of 22 January 1942. In the larger and more vulnerable centres personnel

were posted to six first-line units – Wardens, Fire, Medical, Works, Law and Order, and Communications. To the medical units 20 per cent of the strength was allocated.

Government Emergency Precautions Services

In regard to certain Government undertakings and public utility services, it was necessary to establish certain Government emergency services for the co-ordination of national activities with the local authority services. Among the emergency precautions services so established were Hospitals, Medical, Public Health, Oil Industry, Railways, National Road Transport, Broadcasting, Communications and Electricity Supply.

Medical Section

On 3 June 1941 a conference was called by the Director of National Service to discuss EPS medical arrangements. At the conference were the members of the National Medical Committee and the Medical Superintendent of Wellington Hospital. Consideration was given to the general policy of the EPS (Medical Section) and its relation to the Army and Health Departments.

It was decided that the Medical Section of the EPS should be separate from the hospital services, and that it should organise first-aid posts and be responsible for the evacuation of casualties to the 'hospital door', where the care of the wounded would be taken over by the Health Department. It was considered that the medical superintendents of hospitals could not be responsible for the control of medical sections of the EPS, as they would be fully occupied in running their own hospitals.

A recommendation was made that there should be co-ordination between the Army Department and the EPS medical organisations in the various centres, so that civilian casualties occurring near an army dressing station might receive treatment there and be evacuated by the Army or vice versa. This arrangement was officially made effective in

March 1942.

The conference decided that equipment for the first-aid posts would be supplied as required by the nearest public hospital, and it was suggested that motor ambulance cars be obtained from the Transport Section of the EPS and be placed under the control of the Medical Controller of the EPS. As regards trained staff for the first-aid posts, nurses were to be supplied by the Joint Council of the Order of St. John and the Red Cross Society.

The position as regards doctors to man the first-aid posts (and also the advanced dressing stations or surgical centres which also were to become part of the organisation of the EPS medical section) was rather difficult. In the event of a general Territorial mobilisation as well as an active EPS, emergency demands for all medical practitioners would be at a premium. The EPS organisations in the various centres were asked to select and submit the names of medical men required for medical duties with the EPS. They were asked to select, as far as possible, men with no Territorial or hospital obligations. Arrangements were made for the names to be submitted to the National Medical Committee for approval. This committee then considered them in conjunction with lists of essential hospital staffs and doctors required for Territorial mobilisation.

The chairman of the Medical Council, Sir Donald McGavin, was appointed to act in an advisory capacity to the National Service Department on medical arrangements in the Emergency Precautions Scheme throughout the country, thus co-ordinating the work and ensuring uniformity of action. A memorandum of a general nature on the subject was issued by Sir Donald McGavin on 9 July 1941 to local bodies.

Later, further details were worked out in connection with the separate responsibilities of the EPS Medical Section and the Army Medical Service in the event of military operations. The EPS medical organisation could not work in areas covered by military operations, the Army Medical Service being responsible for the treatment and

evacuation of casualties in these areas. In the majority of cases the army units would evacuate casualties direct to the nearest hospital. If army transport facilities were limited it might be necessary to transfer casualties to EPS transport at the first-aid post, thus freeing army transport for return to units. If a military unit was not provided with a medical officer, or if, owing to the number of casualties and diffusion of the unit, the medical officer could not give any or sufficient immediate treatment, casualties were to be evacuated to the nearest EPS medical post by the unit's transport. Such cases would be treated there and further evacuation carried out under EPS arrangements.

It was clear that local EPS medical arrangements in the event of military operations could be made only in close consultation with the Army Medical Service.

Hospitals Emergency Precautions Service

The paper of 31 July 1939 prepared by the Medical Committee on emergency hospital organisation (see Section VII) was the basis for the development of the Hospitals Emergency Precautions Service in 1941 and 1942, to some extent supplementary to the arrangements then in force for treating sick from mobilisation camps and sick and wounded invalided back from overseas. In a circular memorandum to hospital boards and medical superintendents of hospitals issued by the Director-General of Health on 17 January 1941, the duties of hospitals in emergencies were set out, and these were later embodied in local and group organisations.

After the gazetting of the Emergency Precautions Regulations in August 1940 a Medical Section of the EPS was organised in 1941 but, as already stated, it was decided that this would be separate from the hospital services; or, more correctly, that its responsibility for casualties would cease when they were delivered to the 'hospital door'.

With the entry of Japan into the war on 7 December 1941, preparations for emergency became more intensive. It was decided that

all hospitals, including emergency hospitals, would remain outside the ordinary Emergency Precautions Services. Under Regulation 14 of the Emergency Reserve Corps Regulations 1941, the Minister of National Service on 9 December constituted the Hospitals Emergency Precautions Service as a Government service in the Emergency Reserve Corps. A Dominion organisation was set up, with the Director-General of Health as Dominion Controller and with a headquarters staff controlling local organisations of hospital board emergency committees, each of which had a Local Controller. The local organisations were to establish emergency hospitals to meet any possible contingency arising from the war. Sufficient stocks of supplies and equipment were to be established and adequate staffing arrangements made. Staffs were enrolled on special forms in terms of the regulations.

A reserve of 20,000 beds was established by hospital boards for emergency purposes, but liaison with the DGMS (Army and Air) and ADsMS of mobilised divisions of the Army in New Zealand does not appear to have been very well developed. In the middle of 1942 liaison officers were appointed after discussion between the Health and Army Departments, but they were to act only in the event of hostilities. Had an emergency actually risen it seems that the apparent lack of co-ordination could easily have created difficulties.

In outline, the organisation of the Emergency Hospital Service comprised:

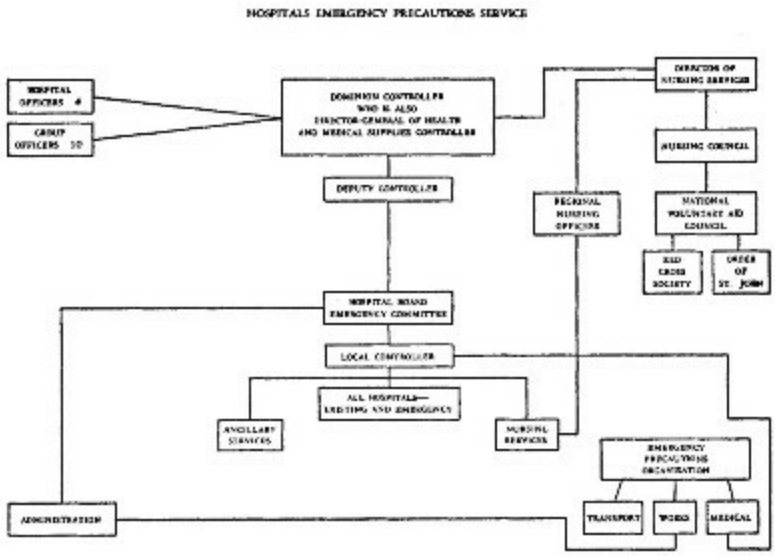
Central Organisation:

- **Dominion Controller (Director-General of Health)**
- **Deputy Dominion Controller (Deputy Director-General of Health)**
- **Six Assistant Controllers (Officers of the Department of Health)**
- **Director of Nursing Services (Director, Division of Nursing)**
- **Regional Nursing Officers (Nurse Inspectors)**

- **Group Officers**
- **Hospital Officers**

***Local Organisations*, each consisting of:**

- **Hospital Board Emergency Committee**
- **Local Controller**



HOSPITALS EMERGENCY PRECAUTIONS SERVICE

The forty-two hospital boards were grouped into ten groups, each consisting of two to eight contiguous hospital districts. Each group was placed under a Group Officer, who was usually a senior officer of the largest board included in the group. These groups were again aggregated into four areas, two in the North Island and two in the South Island. In each area a 'Hospital Officer' was appointed in charge.

The duties of the hospital and group officers were to serve as liaison officers between the Dominion Controller and the local controllers, and to co-ordinate hospital board activities. In the preparatory stages they had to satisfy themselves that all hospital boards had made adequate provision as regards buildings, staff, equipment and supplies to deal with any possible emergency that might arise, bring to the notice of the Dominion Controller any instances where there appeared to be

insufficient preparation, and generally to advise hospital boards on their emergency schemes. Should an emergency have actually developed, their duties would have been to give whatever help was within their power and generally to mobilise whatever help was required by any particular hospital from outside its own district. It was visualised that should any part of New Zealand become isolated the Dominion Controller would delegate all or part of his powers to the Hospital Officer, or even down to the Group Officers.

The Director of Nursing Services within the scheme was given the responsibility of ensuring that adequate facilities for the training of auxiliary nursing staff had been provided and were being fully availed of, and also that there was effective co-ordination of nursing services throughout the Dominion. The Director of Nursing Services was assisted by seven Regional Nursing Officers, whose main responsibility was to allot nursing personnel to meet any exceptional demand during an emergency.

Within each hospital district the hospital board concerned set up a Hospital Board Emergency Committee. This committee was made responsible to the Dominion Controller for the provision in an emergency of all necessary emergency hospital facilities within its area. The more important of the duties involved included the ear-marking of suitable buildings for use as emergency hospitals, the preliminary adaptation of such buildings, the enrolment and instruction of hospital staff (including auxiliary staff) as members of the hospitals EPS, and the augmenting of reserve stocks of furniture, equipment, medical and other supplies for emergency hospital purposes.

The chief executive officer of each hospital board emergency committee was appointed the local controller for the scheme. Invariably he was the Medical Superintendent of the board's main hospital. His duties in an emergency were to organise and generally manage the reception and treatment of patients in all of the institutions placed under his control, to maintain the necessary contacts between the hospitals EPS and the local EPS organisations within his district

(particularly the medical unit of the local EPS) and, should circumstances warrant it, to obtain through the Group Officer any additional assistance he might need to cope with an emergency.

Public Health Emergency Precautions Service

Until the entry of Japan into the war in December 1941, the normal peacetime organisation of the Department of Health and its powers as defined in the Health Act 1920 were considered to be sufficient to meet any emergency that was likely to arise. Japan's entry into the war completely altered the situation. To meet these changed circumstances the Director-General of Health instructed two of his senior officers to survey the situation and submit recommendations as to the action which would be required to ensure that in an emergency essential public health services would be maintained.

The most important points established by the survey were:

(*a*) The Department must be able to carry out its statutory functions in an emergency and must be able to resist any possible interference by any local EPS organisation.

(*b*) The Medical Officer of Health's responsibility covered the whole of his health district, and was not limited to the locality in which his headquarters was established.

(*c*) Departmental officers might be immobilised in an emergency unless they were duly accredited members of an emergency precautions service.

(*d*) Departmental officers acting in emergency would be covered by insurance only if they were duly accredited members of an EPS service.

For these reasons an approach was made to the National Service Department, and on 11 February 1942 the Minister of National Service signed a warrant establishing a Public Health Emergency Precautions Service, which was given the functions of controlling and regulating during a period of national emergency all matters relating to the maintenance and purity of public water supplies and of milk and other food supplies, the maintenance of sanitation, the control of infectious

diseases and the other functions of the Department of Health as defined in the Public Health Act 1920.

The organisation set up paralleled that of the Department itself. The Director-General of Health was appointed Dominion Controller of the Public Health EPS, the Director, Division of Public Hygiene, was appointed Deputy Controller, and each Medical Officer of Health was appointed a Local Controller for his health district. As local controller the Medical Officer of Health was responsible to the Dominion Controller for the maintenance in an emergency of all public health services in his district. This EPS organisation was linked up on one side to the hospitals EPS and on the other to the local EPS. Arrangements were also made to staff the organisation from the staff of the Department of Health, and while maintaining the necessary liaison with the hospitals and the local EPS, the activities of Medical Officers of Health were channelled into matters relating solely to the public health emergency precautions scheme.

In the provision of medical services in an emergency affecting civilians the Emergency Precautions Service (Medical Section) and the Emergency Hospital Service corresponded respectively to field ambulances and general hospitals in the Army. In some cases, perhaps in all, the arrangements were very complete. Such was the case in Christchurch, where some of the leading doctors had a wealth of First World War experience in the Army. Co-ordination there seems to have been very complete as well, the Controller of the Medical Section of the EPS being also the liaison officer of the Emergency Hospital Service and the BMA. A comprehensive booklet of instructions for both divisions of the medical services for emergency was issued on 24 December 1941. Its information is complete and testifies to the coverage and detail of its arrangements. There is every indication that the scheme would have functioned smoothly and satisfactorily in an emergency. A list of the sections covered in the instructions indicates their detailed nature.

For the EPS (Medical Section) the sections were: administration; aid posts and dressing stations; medical personnel; nursing and other

personnel; equipment; Government department aid posts; local body organisation; blood transfusion service; transport; liaison with Emergency Hospital Service; liaison with Army Medical Service; fatal casualties; preparation of schools; disposition of supplies; liaison with Plunket Society; liaison with other sections of EPS; summary; instructions to personnel.

For the Emergency Hospital Service the sections in the instructions were: administration; medical staffing; nursing; domestic, cooking and laundry staff; porters and orderlies; carpenters, plumbers, artisans, etc.; messengers; available beds, hospital board organisation; available beds, private hospitals; review; transport; evacuation of patients; records; admission of patients; mortuary arrangements; fire-fighting services; supplies; equipment; summary; liaison with EPS organisation; notification of state of emergency; traffic control.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XI: MEDICAL SUPPLIES IN NEW ZEALAND, 1939-45

XI: Medical Supplies in New Zealand, 1939-45

The following brief outline relates to the steps taken by the Medical Supplies Controller within the Dominion during the war to obtain requirements of medical supplies from overseas and to conserve existing stocks.

At the outbreak of war the Director-General of Health was appointed as Medical Supplies Controller, with the Medical Officers of Health in their respective districts as local controllers. Pharmacists were appointed to the staff of the Department in Auckland, Wellington, Christchurch and Dunedin to visit wholesalers and to authorise and permit release of supplies from wholesale houses to retailers. An advisory committee consisting of representatives of the four principal importers of medical and surgical supplies was set up in Wellington. This committee met at irregular intervals and was consulted in all important matters.

Prior to the outbreak of war, restriction had been placed on imports of overseas goods, and reports from wholesalers at that time indicated that they were short of many essential supplies. As New Zealand is dependent for practically all medical requirements on overseas countries, the position was far from secure.

In July 1939 it was recommended that stocks of essential medical supplies in the Dominion should be increased so as to establish reserve stocks for emergency purposes. The matter was placed before the Ministry of Supply and was agreed to.

Import licences and the necessary sterling funds were made available and wholesalers and hospitals were encouraged to build up a year's reserve plus normal importations. It was found impossible to establish

this reserve, as sufficient supplies could not be obtained from the United Kingdom.

Later the Supply Council directed that reserve stocks should be increased from one to two years' supply. This was agreed to by the trade, but was held up pending the clarification of proposals under the Lease-Lend Act. Eventually reserve stocks of drugs, dressings, surgical, dental, laboratory and X-ray equipment were received from the United States.

In view of the serious stock position frequent reminders were sent to medical practitioners, hospitals, pharmacists and departmental officers, stressing the need for economy in the use of all medical supplies. Articles were published in medical and trade journals indicating the growing need for the utmost care in the use of many articles hitherto obtainable without restriction.

Certain drugs in short supply were controlled by medical supplies notices published in the *New Zealand Gazette*. A committee was set up to compile a National Formulary for general use by medical practitioners throughout the Dominion. This formulary was compiled with a view to exercising the greatest possible economy in the use of drugs and to assist medical practitioners in economical and effective prescribing.

Investigations were made as to the possibility of manufacturing certain drugs in New Zealand. Committees were set up and the Department of Scientific and Industrial Research established herb farms at Hastings and Lower Hutt. Supplies of galenicals manufactured from New Zealand grown stramonium, hyoscyamus, digitalis and belladonna were used locally and a small quantity was exported. In May 1942 a factory was established in Auckland for the processing of fish livers for additional supplies of Vitamins A and D.

In July 1942 the Medical Supplies Controller and his deputy visited Australia to discuss with the Medical Equipment Control Committee the supply position regarding the release to this Dominion of medical, surgical and hospital supplies. The Medical Equipment Control

Committee agreed to release from Australian sources supplies that could be spared and which were urgently required.

As a result of the action taken and the co-operation of suppliers, both local and overseas, it is gratifying to state that the Dominion was not at any time seriously affected by a shortage of any essential medical requirements.

MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

XII: JOINT COUNCIL OF THE ORDER OF ST. JOHN AND NEW ZEALAND RED CROSS SOCIETY

XII: Joint Council of the Order of St. John and New Zealand Red Cross Society

The Joint Council of the Order of St. John and New Zealand Red Cross Society was the sole accredited expending agent of the National Patriotic Fund Board for the sick, wounded, distressed and prisoners of war. This Joint Council, which was originally established in June 1933, was formally constituted by Act of Parliament of September 1938. The direction of the affairs of the Joint Council was then vested in twenty-four members, twelve from the Order of St. John and twelve from the New Zealand branch of the British Red Cross Society. On the declaration of war in 1939 the Government vested in the National Patriotic Fund Board all rights regarding the collection of moneys for relief and other matters pertaining to active service personnel, and this board supplied the Joint Council with the funds needed for the pursuance of its work. The board itself received substantial grants from the Government from 1943 onwards to defray the cost of food parcels for prisoners of war.

The Joint Council set up sub-committees to handle the varied calls upon its organisation. The work of the committees was voluntary, and these committees had the assistance of a splendid band of women helpers whose work throughout the war achieved magnificent results. There was a War Purposes Committee which supervised the Stores Purchase and Control Committee and the Prisoners-of-war Committee.

Stores Purchase and Control

An important activity was that carried out by the Stores Purchase and Control Committee, which supplied sewing and knitting materials to working parties all over New Zealand so that full stocks of comforts

would always be on hand to meet requisitions received from New Zealand hospitals overseas, hospital ships, merchant vessels, and also hospitals and camps within New Zealand. A list of articles made is set out in Appendix A.

Hospitals on all transports calling at New Zealand ports were supplied with surgical supplies, comforts and foodstuffs.

The quantities and values of goods sent overseas are set out in Appendix B.

Through its Red Cross Commissioners with 2 NZEF in the Middle East, the Stores Committee was able to arrange for supplies to be on hand to meet any emergency, and much-appreciated Red Cross comforts were received by sick and wounded in field medical units, base hospitals and convalescent depots. All hospital ships were fully supplied with comforts, and on the departure of each ship from the Middle East carrying sick and wounded to New Zealand a generous stock of foodstuffs and comforts was placed on board. In addition each invalid boarding the ships overseas was presented with a toilet bag and items of clothing such as pyjamas, pullovers, socks and scarves. (More of these comforts were provided when the returned sick and wounded entered the Casualty Clearing Station, Wellington.)

The Red Cross Commissioners purchased comforts in Egypt, Italy or England to supplement what was received from New Zealand. Materials required for occupational and diversional therapy for patients during convalescence were liberally supplied by the committee for hospitals and convalescent depots overseas, hospital ships, and all hospitals and Red Cross homes in the Dominion.

Convalescent Homes

The control of the four convalescent homes known as 'Evelyn Firth' (Auckland), 'Mowai' (Wellington), 'Rannerdale' (Christ-church) and 'Montecillo' (Dunedin) passed to the War Purposes Committee, through

the Joint Council on behalf of the National Patriotic Fund Board, on 29 February 1944. The homes, which had served the needs of men of the First World War, were modernised, refurnished and equipped to provide amenities of great benefit and assistance to service patients.

Prisoners-of-war Committee

The provision made for New Zealand's prisoners of war was in itself a huge task for the Prisoners-of-war Committee. Food sent to the prisoners of war was the means of saving many lives and restoring the health of countless more. It was necessary to pack the food parcels in Wellington and this was done by 2500 voluntary women helpers. There were at one stage over 8500 New Zealand prisoners of war throughout Europe. The number of parcels sent overseas was 1,139,624, and to pack them 142,403 cases were required. Only a very small percentage of parcels failed to reach their destination.

From the inception of the scheme the policy of the committee was to see that the widest variety of foodstuffs was maintained. Expert advice was obtained on the vitamin content of the parcels, and a calorific value of 12,316 calories a week, or 1759 a day, was attained. This compared more than favourably with parcels from other countries.

The total number of cans and packages of food sent to the camps in Germany, Italy and other places from the inception of the scheme until the final packing on 18 May 1945 is set out in Appendix C. Some were shipped on behalf of the Joint Council by the Canadian Red Cross Society. Arrangements were made with the War Organisation of the British Red Cross and the Order of St. John to supply all New Zealand prisoners of war who were hospitalised in England with special invalid parcels.

The Joint Council publicised the procedure to be followed in the sending of next-of-kin parcels, and also sent free to next-of-kin every two months a prisoner-of-war pamphlet, which contained information translated from the International Red Cross Review as well as other

material relating to prisoner-of-war life and needs.

Where it was shown that the next-of-kin was unable to undertake the packing of a next-of-kin parcel, each provincial centre of the Joint Council undertook the supply of a regular three-monthly parcel, mostly containing clothing and toilet requisites. Next-of-kin parcels of clothing and books were censored and repacked at the packing depots, and these reached a total of 18,349. A prisoners-of-war inquiry office was established.

Relationship with American Red Cross and Hospitals

American Red Cross units were first established in New Zealand in April 1942. Owing to the unfortunate loss of their transport vessels, they were compelled to rely upon Joint Council stores for many months. A liaison was established between the War Purposes Committee and the American Red Cross representative. This liaison enabled the requirements of all men of the United States Army and Navy to be taken care of. As their numbers increased, the demands on the Joint Council stores increased accordingly. Large quantities of underclothing, pullovers, socks, thousands of surgical dressings, etc., were supplied and arrangements made for voluntary workers within the Joint Council organisation to attend to the hospital visitation and distribution of comforts. Letters of appreciation received from commanding officers of United States hospitals conveyed generous appreciation of New Zealand support and of the fine work executed by voluntary helpers throughout the Dominion.

APPENDIX A

Work done by the Joint Council, such as the Making of Garments and Surgical Dressings

Included in the articles made were:

Aprons	**Balaclavas**	**Bed jackets**

Bed capes	**Bed-pan covers**	**Bottle-top covers**
Binders	**Blankets**	**Face cloths**
Bandages 1 in to 6 in as well as special bandages for various parts of the body	**Dressing gowns**	**Finger stalls**
	Gowns – surgeons and orderlies	**Gloves**
		Handkerchiefs
	Hospital bags	**Hot-water bottle covers**
Hussifs	**Masks**	**Mittens**
Operation stockings	**Operating sleeves**	**Operating suits**
Pyjamas	**Pillowcases**	**Pullovers**
Pillows	**Slippers**	**Sox – bed and day**
Splint covers and pads	**Shirts – canoe**	**Scarves**
Shirts – butter muslin	**Skin suits**	**Skull caps**
Shirts – helpless case	**Surgeons' caps**	**Sandbags and covers**
Serviettes	**Surgical glove covers**	**Sheets**
Draw sheets	**Abdominal sheets**	**Lithotomy sheets**
Theatre guards	**Tray cloths**	**Table cloths**
Tea towels	**Surgeons' towels**	**Undervests**
Urinal covers		

Surgical Supplies

Surgical orders forwarded to both the Middle East Force and 'B' Force, each consisting of the following:

Swabs, large abdominal, stitched at one end, 2 ft 6 in

Swabs, medium, 10 in × 14 in

Swabs, small, plain gauze, unstitched, 4 in square

Guards, top, 36 in × 24 in

Dressings, 4 in × 6 in (layer of cellulose and wool inside)

Aprons, surgeons' Jaconet

Masks, surgeons'

Guards, large, 35 in × 39 in

Caps, surgeons'

Bandages, many tailed, trunk, 44 in (3–tails, 8 in wide)

Bandages, head

Bandages, 'T'

Bandages, many tailed, leg, 20 in

Bandages, many tailed, arm, 18 in

Muslin (No. 14 Book) 6 in × 6 yds

Muslin (No. 14 Book) uncut

Flannel, soft white, uncut (grey flannel sent) 49 yds to each Middle East Force and 'B' Force

Small gowns

Sleeves, operating

Large operating towels with central slit, 12 in

Small operating towels with central slit, 12 in (42 in × 36 in)

Glove bags

Gowns, operating (surgeons)

Operation suit, thin material

Bottle-top covers

Stump bandages

Six-monthly order to Middle East Force consisted of:

Large abdominal swabs, 32 in × 36 in, stitched at one end

Small swabs, 6 in × 6 in

Dressings, 12 in × 12 in

Guards, 36 in × 24 in

Side towels, 12 in × 12 in

Large guards, 60 in × 36 in

Jaconet aprons

Surgeons' caps

Surgeons' masks

Surgeons' gowns

Three-monthly order to 'B' Force consisted of:

Large abdominal swabs, 32 in × 36 in, stitched at one end

Small swabs, 6 in × 6 in

Dressings, 12 in × I2 in

Guards, 36 in × 24 in

Side towels, 12 in × 12 in

Large guards, 60 in × 36 in

The numbers of all the items during the war reached the stupendous total of 538,765 pieces; of this total the surgical dressings formed about one-third.

APPENDIX B

Merchandise sent Overseas by Joint Council and Avenues of Distribution

——	Distributed in NZ and	Distributed to United	Distributed in Egypt and the	Distributed by High	Shipped on behal

	packed by Stores Section for Overseas also Hospital and Sick Bays on Ships calling in the Dominion	States Forces in New Zealand	Middle East Red Cross Commissioners	by Commissioner in London	of the Joint Council by the Canadian Red Cross Society, Toronto Canada
Item	*Quantities*	*Quantities*	*Value*	*Value*	*Value*
Foodstuffs, includes fruit (fresh) and food for prisoners of war	5,947 tons		£		
Sweets, including chocolate	591,699 pks.		3,562		Canada sent foodstuff only, the value in NZ currency being £83,000.
Cordials	16,688 bttls.				
Soap, toilet	17,260 tabs.				
Soap, shaving	13,808 tubes				
Toothpaste	7,809				
Toothbrushes	16,286				
Tobacco	355,315 ozs.			£	
Cigarettes	54,957,080		*6,736	†61,222	
Wearing apparel,	207,707 pces.	13,074		41,128	

includes sox				
Slippers	7,279 prs.	1,700 prs.		
Towels	14,411			
Face and other cloths	47,686			
Bed linen, all kinds	16,983			
Table coverings	12,430			
Bed capes, etc.	6,457			
Bandages (guard)				
Skin suits, etc.	247,502	82,528		
Hot-water bags	1,872			
Furniture and grants to hospitals, etc.			12,360	
Books and stationery			8,199	
Surgical and medical equipment			1,198	4,638
	Value			
‡ Miscellaneous	£6,873		746	
ex British Red Cross: games, sports gear, and reading matter			12,395	
General, ex High Commissioner, London			17,132	

TOTAL VALUES

	£
Cigarettes and tobacco	336,457
Clothing, bandages, etc., and value of material used	264,373
Foodstuffs and sweets for PsW and hospitals	1,490,653

Medical and other comforts	**94,692**
	——
TOTAL	**£2,186,175**

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	£
Cigarettes and tobacco	**336,457**
Clothing, bandages, etc., and value of material used	**264,373**
Foodstuffs and sweets for PsW and hospitals	**1,490,653**
Medical and other comforts	**94,692**
	——
TOTAL	**£2,186,175**

APPENDIX C

The total number of cans and packages of food sent in prisoner-of-war parcels to the camps in Germany, Italy and other places from the inception of the scheme until the final packing on 18 May 1945 was:

	From Canada	*From New Zealand*
Meat	**274,000**	**2,300,248**
Cheese	**137,000**	**1,139,624**
Coffee and milk		**1,000,730**
Condensed milk	**137,000**	**982,870**
Jam	**137,000**	**1,160,624**
Honey		**360,085**
Golden syrup		**259,895**
Butter	**137,000**	**1,160,624**
Tea	**137,000**	**2,279,248**
Dried fruit	**274,000**	**1,139,624**
Mint		**486,754**
Sugar	**137,000**	**1,139,624**
Peas		**678,567**
Oatmeal		**561,057**
Cocoa		**561,047**
Chocolate	**137,000**	**1,139,624**
Fish	**274,000**	
Biscuits	**137,000**	

In addition, 355,315 ounces of tobacco and 49,191,178 cigarettes, and 73 cases of books, of educational and historical interest, were despatched.

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* **Equals 2,839,000 cigarettes Grand total of 78,203,080 cigarettes.**

† **Equals 20,407,000 cigarettes Grand total of 78,203,080 cigarettes.**

‡ **Includes games and reading matter.**

XIII: REHABILITATION OF MEDICAL OFFICERS

XIII: Rehabilitation of Medical Officers

The rehabilitation and post-graduate training of medical officers serving in the forces first received the attention of the National Medical Committee on 24 November 1942, when it considered a report from the Director-General of Medical Services (Army and Air). (The matter had originally been raised by ADMS 2 NZ Division in June 1942.) It was decided that the DGMS should formulate definite proposals for further consideration.

A scheme for post-graduate study by medical officers on demobilisation was prepared by the DGMS on 19 August 1943 and submitted to the Minister of Defence. The DGMS pointed out that when demobilisation occurred the country would be faced with the problem of medical officers (old and young) accumulating an extensive knowledge of preventive medicine among the fighting forces, but gaining next to no experience in the diagnosis and treatment of diseases of women and children, and having little opportunity for keeping up to date in modern medicine and surgery.

In his scheme the DGMS divided medical officers into four classes. First, those who were practising specialists and consultants before enlistment and who would benefit by a three-months' refresher course overseas. Second, those who were actually studying or contemplating studying for a higher degree on enlistment and who should have an opportunity to complete their studies or examinations, entailing a course of six to twelve months. Third, general practitioners practising as such before enlistment, for whom a three-months' refresher course in Australia or New Zealand would be sufficient. Fourth, medical officers who had had only a short term as house surgeons after graduation and before enlistment and who intended to become general practitioners. This last group would be the largest, and for them practical courses in

medicine, surgery, diseases of children and obstetrics at the main hospitals were suggested.

The proposals were discussed by the DGMS on 16 December 1943 with the Minister of Health, who believed that the situation after the war would be such that New Zealand should endeavour to rely on her own resources for post-graduate training, it being probable that rehabilitation demands on the hospitals of Great Britain would be so great that New Zealanders would not be able to secure appointments with the same facility as previously. The Minister recognised, however, that it would be desirable for some of the returning medical officers to be sent to Great Britain and believed that it should be part of the rehabilitation programme to make grants for this purpose in suitable cases. It was suggested that the matter be further discussed with officers of the Health and Rehabilitation Departments to draw up concrete plans for ministerial consideration.

A meeting of representatives of the Army, Health and Rehabilitation Departments was held in January 1944, when the following decisions were made:

1. **That opportunity for post-graduate experience should be made available to medical men who had served in the forces for eighteen months or longer, or in exceptional circumstances for a shorter period, and particularly to the younger men with short periods of hospital training. (The same grouping as originally outlined by the DGMS was adopted and similar benefits were recommended.)**
2. **That the Director-General of Medical Services and Director-General of Health should confer as to the measure of practical assistance to be granted medical men coming within the four groups set out.**
3. **That members of the armed forces who wish to become medical men, and who had the necessary educational background, should be given preference in the matter of bursaries to enable them to take the medical course.**
4. **That a recommendation should be sent from the meeting to the Ministers of Defence, Rehabilitation and Health to the effect that in the matter of the rehabilitation of medical men the Government should accept the guidance of the National Medical Committee, with**

co-opted members consisting of a representative of the Rehabilitation Board and of the Medical Faculty, Otago University.

These decisions were before the sub-committee of the Education Committee of the Rehabilitation Board when it made its report on 30 March 1944 on rehabilitation proposals for professional men discharged from the armed forces. The sub-committee (consisting of Lieutenant-Colonel Ball, [1] Sir Thomas Hunter, and Wing Commander Caradus [2]) was of the opinion that the Rehabilitation Department should not deal with each professional governing body separately, but that principles should be defined upon which all proposals should be based. Only by this means could there be uniformity in the benefits to be approved for the various professions, and an assured equality of treatment. The sub-committee recommended assistance equally to all professional groups in the provision of correspondence courses, weekly classes and discussions at university colleges, short refresher courses in New Zealand for men with little professional experience, and overseas post-graduate bursaries with an allowance of £250 per annum plus fares, fees and books. It was thought that these recommendations would meet most applications for assistance in most professions, but that special provision would be necessary for those medical men who had done short periods as house surgeons and were prospective general practitioners, and that treatment of this group was a matter for arrangement between the Health Department and the Rehabilitation Department.

The proposals of the sub-committee were in turn approved by the Education Committee, the Rehabilitation Board and the Government, and attempts by the National Medical Committee to win special treatment for medical officers were unsuccessful.

Meanwhile, on 30 November 1943, the National Medical Committee had decided that a special committee should be set up to consider medical rehabilitation. The National Medical Committee, being representative of the Department of Health, the Army Department and the British Medical Association, was prepared to act with co-opted members representative of the Rehabilitation Department and the

Medical School, Dunedin. A request for such a committee was received from the British Medical Association on 20 December 1943.

On 15 March 1944 the Director of Rehabilitation was advised of the National Medical Committee's recommendation that this wide

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[1] Lt-Col D. G. Ball, QBE, m.i.d.; Wellington; born Wanganui, 19 Oct 1895; school inspector; NZ Rifle Bde 1915–19 (2 Lt, 4 Bn); Director, Army Education and Welfare Service, 1942–46; later Asst Director of Education.

[2] Wg Cdr E. Caradus, QBE; Wellington; born Auckland, 6 Dec 1885; civil servant; Director of Educational Services, RNZAF, 1939–45.

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committee be formed to consider the rehabilitation of medical men. The Director of Rehabilitation on 21 April 1944 approved the formation of the proposed committee, but only to act in an advisory capacity to the Education Committee of the Rehabilitation Department in matters affecting medical officers.

At this stage the National Medical Committee convened on 6 June 1944 a special meeting which was attended by members of the committee, the Dean of the Otago Medical School, a representative of the British Medical Association and three representatives of the Rehabilitation Department. At this meeting the whole question of rehabilitation was fully discussed and various recommendations made. These were conveyed to the Director of Rehabilitation on 16 June 1944.

This memorandum was referred by the Rehabilitation Department to its own Education Committee for its consideration. This committee did not agree with the recommendations and considered that medical officers should be dealt with in similar manner to other groups of professional men (i.e., architects, engineers, accountants, etc.). This information was conveyed by the Director of Rehabilitation on 15 August 1944 to the National Medical Committee. The reply was received

at a meeting of the latter committee with the additional representative of the British Medical Association on 28 August. Its views were set out in the following terms:

The National Medical Committee is not satisfied that the Education Committee of the Rehabilitation Department, composed as it is entirely of lay members, has sufficient knowledge and experience to deal with such a complex subject as the rehabilitation and post graduate training of medical men and regards itself as the Body best qualified to advise in the matter. The National Medical Committee is most anxious to ensure that all young medical men are adequately trained before entering private practice and are not unduly prejudiced in after life by reason of their service overseas. It is gravely concerned about the future of medicine in New Zealand. The medical profession have been proud of the fact that heretofore the greater number of our graduates have, as a matter of course, gone to the United Kingdom for post graduate experience – after completion of a period as a House Surgeon in a public hospital. Many of them, moreover, have taken a higher qualification in medicine or surgery before returning to New Zealand. Today the rewards of private practice are so great and so immediate that there has been a tendency for young doctors who are not liable for military service to embark on practice immediately after qualification and sometimes even without serving a term as a House Surgeon. If the tendency continues the community will suffer by a lowering of the quality of our medical services. Every effort should be made, therefore, to encourage young doctors on demobilisation to return to hospital for further experience and to go overseas for post graduate study.

Unless encouragement is given on the lines recommended by the National Medical Committee the standard of work of the future generation of General Practitioners will show marked deterioration and the numbers of specialists and consultants will rapidly decline due to the retirement of the large number of specialists and consultants who are past middle life and the failure to replace them. There is no need to stress the serious consequences to New Zealand if the present tendency

continues for young doctors to enter practice before their medical education has been completed.

To sum up it is strongly recommended:

(1) That the National Medical Committee with co-opted members, i.e. the Dean of the Medical School with a representative of the New Zealand Branch of the B.M.A. should be recognised as the official advisers to the Rehabilitation Board in all matters relating to the rehabilitation and post graduate training of medical officers serving in the Forces.

(2) That the recommendations embodied in the memorandum of 16th June from the Chairman of the National Medical Committee to the Director of Rehabilitation should be accepted as the basis for bursaries and other assistance to medical officers on demobilisation.

These decisions were placed before the Government but no response was made. A further memorandum of 7 November conveyed to the Minister of Health through the National Medical Committee the views of the planning committee of the British Medical Association on the subject, but again no reply was received. In the meantime rehabilitation assistance for medical officers became a function of the Rehabilitation Department exclusively.

The members of the National Medical Committee felt that they were placed in a false position in that medical practitioners generally looked to the committee and the Department of Health to care for their interest in respect to rehabilitation matters. It seemed to the committee that the Rehabilitation Department preferred to be guided by the advice of its own educational committee rather than by the National Medical Committee with co-opted members representing the Medical School and the British Medical Association. It was decided on 18 December 1944 that, under the circumstances, the only course to adopt was for the committee to dissociate itself from giving any advice to the Director of Rehabilitation in connection with these matters. The Director of Rehabilitation was accordingly advised of the committee's decision.

This communication was received by the Director of Rehabilitation with regret. He pointed out that the recommendations of the committee

for dealing with doctors on a different basis from other professions was fully considered by the Rehabilitation Board. The board felt, however, that it could not support a recommendation which would result in having two groups of men overseas on rehabilitation post-graduate scholarships, one group receiving £250 per annum and the other £1000 per annum, particularly in view of the fact that all were professional men desirous of improving their knowledge and qualifications in their own particular sphere. Further, a number of the professional men had served in the ranks or in generally less favourable conditions than officers of the medical profession while they were in the forces, and it was felt that any action which discriminated against these professional officers compared with doctors on their return to civil life would, with some justice, be most unfavourably received. This was a broad policy matter in which the Government had approved the views of the Rehabilitation Board. The proposal was made to the Director-General of Health that additional grants in the national interests of health might be made by the Health Department.

The final decisions reached by the Rehabilitation Board enabled ex-medical officers completing their training as house surgeons at hospitals to be subsidised up to a maximum for married men of £500 if living in, or £600 if living out. The board also offered overseas post-graduate bursaries in suitable cases, valued at £250 sterling per annum plus fares (where necessary), as well as fees and a grant towards the cost of books.

The decision made by the National Medical Committee and the Health Department at the meeting of 18 December 1944 more or less deprived the medical profession of liaison with the Rehabilitation Board. The Rehabilitation Department continued to supplement the salaries of medical officers taking up junior hospital posts after service overseas, but otherwise there was a position of stalemate. The Rehabilitation Committee of the British Medical Association stepped into the breach. In March 1944 the association had circulated a questionnaire to every member of the profession serving in the forces. This questionnaire asked each medical officer for particulars of the hospital appointments,

refresher courses or post-graduate study he would require after his discharge. An analysis of the replies showed that some officers had had sufficient experience in hospitals and required only further training in a particular branch of civilian work before they would be efficient general practitioners, but that there were many men who required a further period of training of at least twelve months in civilian hospitals before they could hope to be equipped for general practice or postgraduate studies. The committee was therefore familiar with the problem, and on 9 April 1945 in an interview with the Minister of Rehabilitation gained the right to make recommendations to the Rehabilitation Board. As Rehabilitation Officer of the British Medical Association, Dr Rennie [1] was able to introduce a measure of guidance and control, and he gave his advice freely to the

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[1] Maj B. C. Rennie; Wellington; born Perth, Aust., 23 Feb 1904; consulting urological surgeon; 6 Fd Arab Feb 1940-Mar 1941; 2 Gen Hosp Mar-Sep 1941; 1 Gen Hosp Sep-Nov 1941.

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medical officers and the Rehabilitation Board. Over 150 availed themselves of post-graduate bursaries, with consequent improvement to medical practice and the public good. The hospital boards were most co-operative as regards the rehabilitation of returned men and gave hospital appointments and tuition and experience to the younger men requiring this help.

In retrospect it would seem that the Rehabilitation Board acted sympathetically, and that the attitude of the National Medical Committee in demanding specially favoured treatment for medical officers, and denial of its co-operation when its suggestions were not agreed to, was hardly justified; that the standard of medical service was adequately safeguarded by the opportunities that were made available; and that the British Medical Association's Rehabilitation Committee performed a useful duty with great credit.

Some 151 post-graduate bursaries for overseas studies were granted

up to the end of 1951, the additional qualifications studied for including FRCS (66), MRCP (53), MRACP (9), MRCOG (9), and FRACS (6). In addition, 72 grants were made for courses of study overseas, among them being pathology 6, surgery 6, gynaecology 5, anaesthetics 5, dermatology 4, obstetrics 4 and ophthalmology 3. Forty-seven grants were made to subsidise the salaries of house surgeons.

The members of the NZANS received 10 post-graduate bursaries for overseas study and 89 for study in New Zealand, and there were 36 NZMC other ranks among the 169 ex-servicemen and women granted bursaries to study medicine at the University of Otago.

GLOSSARY

Glossary

AAMC	**Australian Army Medical Corps**
A & D	**Admission and Discharge**
ADDS	**Assistant Director of Dental Services**
ADH	**Assistant Director of Hygiene**
ADMS	**Assistant Director of Medical Services**
ADS	**Advanced Dressing Station**
AEWS	**Army Education and Welfare Service**
AFHQ	**Allied Force Headquarters**
AFS	**American Field Service**
AIF	**Australian Imperial Force**
AMCU	**Anti-malaria Control Unit**
APD	**Assault Personnel, Destroyer**
ARP	**Air Raid Precautions**
ASC	**Army Service Corps**
AS/MS (flotilla)	**Anti-submarine/Mine-sweeping**
ATS	**Anti-tetanus Serum**
BDS	**Beach Dressing Station**
BEF	**British Expeditionary Force**
BID	**Brought in Dead**
BMA	**British Medical Association**
BTE	**British Troops in Egypt**
CCS	**Casualty Clearing Station**
CD	**Contagious Disease**
CMF	**Central Mediterranean Force**
CO	**Commanding Officer**
CRS	**Camp Reception Station**
DDMS	**Deputy Director of Medical Services**
DDP	**Deputy Director of Pathology**
DDS	**Director of Dental Services**
DGH	**Director-General of Health**
DGMS	**Director-General of Medical Services**

DJAG	**Deputy Judge Advocate General**
DMS	**Director of Medical Services**
DQMG	**Deputy Quartermaster-General**
EENT	**Eye, Ear, Nose and Throat**
EFTS	**Elementary Flying Training School**
EMS	**Emergency Medical Service**
ENT	**Ear, Nose and Throat**
EPIP (tent)	**European Privates, Indian Pattern**
EPS	**Emergency Precautions Scheme**
FDS	**Field Dressing Station**
FSU	**Field Surgical Unit**
FTU	**Field Transfusion Unit**
GHQ	**General Headquarters**
GOC	**General Officer Commanding**
HMT	**His Majesty's Troopship (Transport)**
HQ	**Headquarters**
HS	**Hospital Ship**
IP (tent)	**Indian Pattern**
IPP (tent)	**Indian Pattern, Privates**
ITW	**Initial Training Wing**
LCI	**Landing Craft, Infantry**
LCM	**Landing Craft, Mechanised**
LCT	**Landing Craft, Tank**
L of C	**Line of Communication**
LST	**Landing Ship, Tank**
MAC	**Motor Ambulance Convoy**
MDS	**Main Dressing Station**
MEF	**Middle East Force**
MI Room	**Medical Inspection Room**
MI Unit	**Medical Investigation Unit**
MO	**Medical Officer**
MRC	**Medical Research Council**
MSU	**Mobile Surgical Unit**
NAAFI	**Navy, Army, and Air Force Institutes**
NCO	**Non-commissioned officer**
NZANS	**New Zealand Army Nursing Service**
NZDC	**New Zealand Dental Corps**

NZEF	**New Zealand Expeditionary Force**
NZEF (IP)	**New Zealand Expeditionary Force (in Pacific)**
NZEF (UK)	**New Zealand Expeditionary Force (United Kingdom)**
NZGH	**New Zealand General Hospital**
NZMC	**New Zealand Medical Corps**
OC	**Officer Commanding**
OCTU	**Officer Cadet Training Unit**
ORA	**Operation Room Assistant**
ORs	**Other Ranks**
OUMC	**Otago University Medical Company**
PA	**Prophylactic Ablution**
PAD	**Passive Air Defence**
PMO	**Principal Medical Officer**
PUO	**Pyrexia of Unknown Origin**
PW	**Prisoner of War**
QM	**Quartermaster**
QMG	**Quartermaster-General**
RAMC	**Royal Army Medical Corps**
RAP	**Regimental Aid Post**
RMO	**Regimental Medical Officer**
RNVR	**Royal Naval Volunteer Reserve**
RNZAF	**Royal New Zealand Air Force**
RNZN	**Royal New Zealand Navy**
RNZNR	**Royal New Zealand Naval Reserve**
RNZNVR	**Royal New Zealand Naval Volunteer Reserve**
RTU	**Reinforcement Transit Unit**
S & W	**Sick and Wounded**
SBA	**Sick-berth Attendant**
SBMO	**Senior British Medical Officer**
SMO	**Senior Medical Officer**
Stalag	**Prison Camp, Other Ranks (in Germany)**
TAB	**Typhoid, Paratyphoid A and B (vaccine)**
Tb	**Tuberculosis**
USMC	**United States Marine Corps**
VAD	**Voluntary Aid Detachment**
VD	**Venereal Disease**
VDTC	**Venereal Disease Treatment Centre**

WAAC	**Women's Army Auxiliary Corps**
WAAF	**Women's Auxiliary Air Force**
WO	**Warrant Officer**
WRNZNS	**Women's Royal New Zealand Naval Service**
WWSA	**Women's War Service Auxiliary**

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MEDICAL SERVICES IN NEW ZEALAND AND THE PACIFIC

[BACKMATTER]

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