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The New Zealand Railway Group

**Their Contribution in the North
African Campaign, 1940-1943.**

**A thesis presented in partial fulfilment of the degree
of Master of Arts in History at Massey University.**

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Abbreviations

AFV - Armoured Fighting Vehicles.

AIF - Australian Imperial Force.

EFCA - Enginedrivers, Firemen and Cleaners Association.

ESR - Egyptian State Railways.

GHQ - General Headquarters.

GOC - General Officer Commanding.

LoC - Lines of Communication.

Lt.-Col. - Lieutenant Colonel.

ME - Middle East.

NZPD - New Zealand Parliamentary Debates.

2NZEF - Second New Zealand Expeditionary Force.

POL - Petrol, Oil and Lubrication.

RAF - Royal Air Force.

RMT - Reserve Mechanical Transport.

WAI - War Archives, Series Two.

WD - War Department.

Introduction

This thesis examines the role of the New Zealand Railway Group and its associated problems during the North African Desert Campaign (1940-1943). It also assesses the Group's contribution to the defeat of the Axis forces in this theatre of the war and why it disbanded and returned to New Zealand in 1943.

The specialist Railway Group was formed at the behest of the British Secretary of State for Dominion Affairs, Anthony Eden, on 19 November 1939¹, following New Zealand's offer of assistance to Britain after the declaration of war against Nazi Germany. Britain requested New Zealand to form the following railway companies: one Headquarters Maintenance and Construction Group, one Railway Survey company and four Railway Construction companies, all of which were to be attached to the Royal Engineers². The New Zealand Government responded positively, but only promised one construction company, and not four as asked. However, New Zealand eventually provided seven railway companies. The first three were 9 Railway Survey Company, comprised of seven officers and 66 other ranks; 10 and 13 Railway Construction and Maintenance Company, comprised of six officers and 273 other ranks respectively; and Headquarters, Railway Construction and Maintenance Group, comprised of three officers and 22 other ranks. These three companies were later joined by 16 and 17 Railway Operating Companies, comprised of seven officers and 355 other ranks respectively; and Headquarters Company, Railway Operating Group, comprised of four officers and 24 other ranks. The Railway Group's complement was 40 officers and 1,368 other ranks; 1,408 men in all.

Initially the Railway Group seemed destined for service in France. It duly arrived in Gourock, Scotland on 16 June 1940, and travelled

¹ Letter from The Secretary of State for Dominion Affairs to the Governor-General of New Zealand, *Documents, Relating to New Zealand's Participation in the Second World War 1939-45, Volume I*, Wellington: War History Branch, 1949, p.212.

² Ibid.

on to Longmoor, England, for further training. The Railway Group's future had become uncertain due to the invasion of France in May 1940. However, as Italy became increasingly belligerent, Britain's interests in North Africa and the Middle East seemed threatened and the Railway Group sailed to Egypt. After the successful conclusion of the Middle East/North African campaign in May 1943, the Railway Group disbanded and returned to New Zealand.

Being classified as 'Non-Divisional' meant that, despite being a military formation comprised solely of New Zealand personnel with army ranks, the men were engaged in their civilian occupations, albeit in a war situation. The Railway Group was not directly under the jurisdiction of Headquarters, Second New Zealand Expeditionary Force (2NZEF). By arrangement between respective Headquarters, the railway companies came under the control of the Director General of Transportation, Middle East, a British establishment. This excluded 2NZEF's senior staff from having any real say in how the Railway Companies were utilised. While this system of 'general utilisation' did not give British authorities total *carte blanche* to use New Zealand troops as they saw fit, it did tend to isolate them from the main body of New Zealand troops in the Middle East.

This command structure resulted in the New Zealand fighting men not always being aware of the presence of their fellow countrymen in the Railway Companies. Troops were often surprised to find themselves being transported on Egyptian trains hauled by New Zealand-crewed locomotives, and being hailed by distinct 'Kiwi' accents while stopped at isolated railway stations in the Western Desert. Similarly, while fighting battalions were receiving wide, if censored, news coverage, railwaymen were often overlooked in the general war reports.

There has been very little written about the Railway Group as a corporate body. J.F. Cody's book '*New Zealand Engineers, Middle East*' discusses in a cursory fashion the Railway Group and its wartime tasks. There is no single official historical publication devoted solely to the Railway Group. This is possibly due to the unit's premature disbandment in 1943, with much of what they achieved being overshadowed by the fighting units.

The primary sources of information used throughout this thesis have been the various army unit diaries and relevant reports, combined with Railways Department files now held by National Archives. In addition, the official histories of the New Zealand Second Expeditionary Force have been examined for relevant data, as have general historical publications concerning New Zealand's involvement in the North African and Middle East Campaign. Furthermore, former Railway Group personnel have been contacted and have supplied the author with their personal memoirs, diaries and observations of life in the various railway companies.

This thesis unfolds in a generally chronological fashion. It first examines why and how the Railway Group was formed, and who got recruited. It then assesses the contribution the railway made to the defeat of the Axis powers in this campaign. Following this, it analyses both the general and particular problems faced by the railway companies in carrying out their duties. It finally examines how the worsening domestic railway situation pressured the New Zealand government into disbanding the Railway Group and returning the skilled railwaymen home following the defeat of the Axis forces in May 1943.

The Railway Group was formed to assist British railway units in the European Theatre, but later transferred to the Middle East, where its contribution was very significant in supplying the British Eighth Army in North Africa. Without the use of the Western Desert Railway, it is likely that the campaign would have lasted longer than it did, due to the shortage of lorry transport. Rapid transit of war material ensured that the front line troops were always well equipped and supplied. The Railway Group achieved tremendous results despite the numerous problems presented in operating a railway in such a hostile environment. The Railway Group's reputation may have grown had it later served on the European mainland, but needs in New Zealand meant the Railway Group was disbanded and returned home just as its prestige was at its peak. Without doubt, the New Zealand Railway Group played an important role in the Allied success in the North African theatre of the war.

Chapter One

Formation of the Railway Companies

Following New Zealand's declaration of war against Germany in 1939, the New Zealand Government rallied to support Britain by offering to raise and dispatch a expeditionary force, soon to be known as the Second New Zealand Expeditionary Force (2NZEF). This offer was readily accepted by the British Government. Major-General Sir Bernard Freyberg was placed in command of the Second New Zealand Division, and was to remain so for the duration of the war. However, warfare had entered a new dimension since the end of World War One. Armies which had previously relied primarily on foot, horses and railways now had trucks, tanks, aircraft as well as railways to move troops and equipment more rapidly for strategic and tactical advantage. Military campaigns were to hinge on who could deploy troops and maintain the supply of logistical material in the field more than ever in the history of warfare. Reliable transport now became an even greater factor in an already complex strategic equation.

Despite Britain being somewhat unprepared for a major war against Germany, the British Government realised that transportation would play a vital role in the conflict. In a bid to prevent important staff from leaving railway service to join the military arms, certain positions were classified as reserved occupations. Locomotive running, signal and permanent way, porters, shunters and traffic control staff were amongst those deemed exempt from military service¹. The British authorities also requested the New Zealand government to send railwaymen to bolster their Royal Engineer Composite Railway units.

Ironically, a New Zealand Railways Department employee, W.A. Breach², had written to the General Manager's office in June 1939

¹ O.S. Nock, *Britain's Railways at War*, London: Ian Allan Ltd. 1971, p.38.

² WAI DA/1/ (reference number was not stamped on the photocopy sent to the author). Letter dated 23 June 1939, National Archives, Wellington.

about the possibility of forming a Railway Battalion and a 'be fit' campaign as the threat of war seemed inevitable. The Department replied that

The formation of a Railway Battalion would seem at this stage to be unnecessary as it is quite within the bounds of possibility that owing to the nature of their occupation a very large proportion of our members would be exempted from actual war service on account of the necessity for maintaining essential train services³.

Five months later, on 19 November, Britain's Secretary of State for Dominion Affairs, Anthony Eden, cabled the New Zealand Government via the Governor-General, stating that an urgent need existed for military transportation companies. It was suggested that skilled men from both the Railways and Public Works Department could form a railway construction and maintenance unit as part of the New Zealand Army's Engineer Corps. The New Zealand government agreed to help and instructed the Minister of the Railways Department, Daniel Sullivan, to circulate the following abbreviated notice on 8 January 1940: 'As Minister of Railways, I would ask members of the Department who are eligible for enlistment and military service to make application to join a Special Group for Railway Construction and Maintenance overseas'⁴. Vacancies existed within the 'Special Units' for a large number of trades⁵

There were 431 volunteers from within the Railways Department and 692 from the Public Works Department, which had circulated a

³ Ibid.

⁴ R. 501/1 Sbe (Railway) files, 14 June 1940, National Archives, Wellington.

⁵Blacksmiths; Bricklayers; Carpenters and joiners; Clerks; Draughtsmen (railway construction); Drivers (transportation plant); Fitter-drivers; Fitters (railway signal); Masons; Painters and decorators; Platelayers; Plumbers and gasfitters; Riggers; Riveters; Storemen, technical and departmental (railway); Surveyors (railway); Welders (acetylene and electric); Engine hands; Blacksmiths' strikers and hammermen; Stokers (stationary engine); Drivers (motor vehicle); Cooks. In addition to the craftsmen required, there are certain positions available for engineers and draughtsmen and applicants with qualifications for such positions should supply details. Ibid.

similar notice.

As only 386 men were actually required, only the most eligible were selected⁶. Following the call, the quota for railway personnel was met within forty-eight hours of formation⁷. These volunteers formed three units: Headquarters Railway Construction and Maintenance Group, 9 Railway Survey Group and 10 Railway Construction Company. The three companies were eventually supplemented by the 13 Railway Construction and Maintenance Company, which arrived with the Third Echelon at Port Tewfik, Egypt on 29 September 1940. The overall commander of the Construction Group was Lieutenant-Colonel J.E. Anderson, with Majors Packwood, Rabone and Smith in command of 9, 10 and 13 companies respectively. All four men had extensive railway and civil engineering skills and previous war service⁸. Anderson had risen to acting commander of a division of the Royal Engineers by 1918.

The formation of the Railway Group was not, however, without its problems. For whatever reasons, some railwaymen left their wives and children in order to join the army and serve overseas. This, unfortunately led to numerous marriages ending prematurely⁹.

After basic military training, the newly formed companies boarded the troopship *Andes* at Lyttelton on 2 May 1940 as part of the Second Echelon. Colonel Anderson and his units were originally to be sent to France after completing final training in Britain, but France and the Low Countries were invaded by German forces while the railwaymen were in transit.

Following the German successes in Europe, it became increasingly apparent that Mussolini would ally himself with Hitler and threaten

⁶ R.D. Munro, 'New Zealand Railwaymen in the Second World War', unpublished, 1994, p.18. The men deemed most eligible were those aged between 21 and 35 years old, physically fit and preferably single.

⁷ NZPD, 260, August 7 to October 17, p.5.

⁸ All three men had served during the 1914-18 War.

⁹ B.L. Campbell, 'One Sapper's War', personal memoirs, unpublished, 1997, p.1. Mr Campbell was a sapper-locomotive fireman with 16 Railway Operating Company.

British shipping using the Suez Canal route. Arriving in England via Capetown on 16 June 1940, the railway companies were given some platelaying and survey work, but due to the British Army having very little spare equipment for military engineering training, most of their time was engaged in further basic army training.

In the absence of established evidence, it can only be hypothesised as to why Britain asked New Zealand to form these specialist railway units. Taking into account that Britain was highly reliant on railway transportation, it would be reasonable to suggest that all their civilian railwaymen were already being utilised to maximum capacity for wartime duties. Even though the Royal Engineers had their own composite railway units, the extent of Britain's interests throughout the world would mean that this military resource would be stretched. The Official History of the Royal Engineers mentions how under-resourced the railway companies were during the 1940 French Campaign¹⁰. Even with the French contributing, construction of new railway lines servicing the hastily prepared airfields had to be kept to a bare minimum, with priority going to the most important air bases. Given the number of existing railway lines in France and the 141 miles of track that British engineers built, the regular and territorial sappers were fully committed, with all available reinforcements already exhausted.

During the critical summer months from May to September 1940, when a German invasion of Britain appeared imminent, troops not essential elsewhere were retained in Britain for defence purposes. With the failure of the German forces to occupy Britain, it was eventually deemed safe to allow the New Zealand troops to leave Britain to take up duties in Egypt and throughout the Middle East now that Italy posed a threat to British interests, particularly in Egypt. The New Zealand railway units arrived in Egypt on 17 September 1940 and were put to work immediately. As there was little or no equipment for railway construction, some men from 10 Railway Construction Company were placed under the command of 4 Indian Division and set about constructing pill-boxes and

¹⁰ R.P. Pakenham-Walsh, *History of the Royal Engineers*, Vol. 8, Institute of Royal Engineers, 1948, pp.21-2.

machine-gun emplacements in the 'Baggush Box' area¹¹.

By agreeing to Britain's requests, New Zealand helped to lift the strain which was immediately placed upon Britain's own railway system, both domestically and in Egypt, when war broke out. In the initial wave of patriotism demonstrated by the New Zealand Government, little forethought was given to what the long-term ramifications were to be in allowing so many highly skilled railwaymen to leave New Zealand. As a result the Railway Group was to have its wartime service terminated earlier than most other military units sent by New Zealand overseas.

¹¹ J.F.Cody, *New Zealand Engineers, Middle East*, Wellington: War History Branch, 1961, p.37.

Chapter Two

The Work of the Railway Construction and Survey Companies

The non-divisional 9 Survey and 10 and 13 Maintenance and Construction Companies attached to the regular army's Engineer Corps made a profound contribution to the Allied war effort in the Middle East. They helped advance the railway presence to remote areas, enabling war material to be brought closer to the combat units, thus saving scarce road transport and fuel. Their surveys examined alternative routes through which war materials could be brought should the regular lines of communication be cut. In carrying out their duties, these men were often dispatched at very short notice, sometimes without the knowledge of Headquarters 2NZEF. Railwaymen found themselves working from the far reaches of Iran (Persia) to Eritrea. Possibly the greatest engineering contribution made by any New Zealand engineering unit, was 250 mile extension of the Western Desert Railway, taking the line almost into the Libyan port of Tobruk. This extension was to be a major factor in defeating Axis forces in North Africa.

World War Two saw the development of a new dimension in the conduct of land battles. With the advent of reliable, motor transport, battlefields ranged over vast distances, no longer being so static, instead being fluid and mobile, changing rapidly as each side sought better offensive or defensive positions. The North African desert was to be Britain's only substantial land battlefield in late 1940 following the Battle of France. Reliable mass transport is a vital necessity in war, and particularly so in such a vast region. The battlefields which were so fiercely contested during the North African Campaign were situated on a singularly long strip of land stretching from Egypt to Tunisia. Along this coastal strip of land was a mixture of roads, railways and ancient Bedouin tracks, with battlefields being rarely further than 100 miles from the sea. The areas fought over comprised the relatively fertile and temperate coastal regions combined with harsh dry desert, and both Axis and

Allies found flanking attempts into the interior of Egypt and Libya frustrated by the inhospitable climate and terrain.

In a lecture prepared for delivery to the Staff College in 1930, but not delivered, the former Director of Military Railways, France, Brigadier-General Sir Valentine Murray stated: "No campaign of any magnitude can be carried on at the present day without utilising railways"¹. In a similar vein, former United States General James A. Van Fleet later remarked: "Modern wars of the last hundred years have closely followed railroads, or else railroads themselves have closely followed the battlefield"². The war in North Africa supported the views of both Murray and Van Fleet.

Britain had chosen the right country from which to recruit railway construction troops. New Zealand was developing internal transportation links during the 1930s, and still had significant road, railway and bridging construction projects, often over difficult geographical terrain. Road and rail networking in Britain had been largely completed, so there was a distinct lack of skills in this area of construction³. On the other hand, our civil engineers and railway tradesmen had the necessary skills to help fill vacancies within the engineering services that emerged with the outbreak of war. New Zealand railway track construction men were also familiar with living in somewhat rudimentary accommodation and enduring the hardships of inclement weather.

Until Australian and South African surveyors arrived in the region, 9 Survey Company was the only surveying group available in North Africa and the Middle East and thus found itself in great demand. Tasks revolved primarily around planning new routes to the oil fields of Iraq and Iran, and linking up the various railways in the whole Middle Eastern region⁴. New Zealand engineers found themselves surveying in locations from Eritrea to Iraq. Such was

¹ Brigadier-General Sir Valentine Murray, 'Transportation in War', *Royal Engineers Journal*, September 1942, pp.202-233.

² General J.A. Van Fleet, *Rail Transport and the Winning of Wars*, Washington DC: Association of American Railroads, 1956, p.4.

³J.F. Cody, *New Zealand Engineers, Middle East*, Wellington: War History Branch, 1961, p.62.

⁴ Cody, p.45.

the shortage of surveyors, a section (one officer and 20 men) of 9 Survey Group was dispatched to finish a bridge that the Italians had begun in Eritrea, over the River Gash⁵. The reputation of the New Zealanders for improvisation was put to the test during this task, as the surveyors and construction sappers were short of necessary equipment and had to carry out much of the work by hand, including mixing and pouring concrete, an onerous task in hot conditions. When German troops invaded Greece, 3 Section, 9 Railway Survey Company were sent to that country even before fighting troops, to survey and build suitable landing areas for a proposed expeditionary force⁶.

It had been generally understood that the specialist units, the surveyors in particular, were at the disposal of the Director General of Transportation, Middle East. However, it still irked General Freyberg of 2NZEF considerably to find out, indirectly, that 'his' men were being split up and used by this British officer, without his knowledge. Upon having his command of 2NZEF confirmed, Freyberg had received a mandate from the New Zealand Government which 'required him to maintain the closest links with the New Zealand Government and allowed him discretion to disregard orders from military superiors which might needlessly jeopardise his troops'⁷. At the outset of hostilities, Labour Prime Minister, Michael Savage, and his deputy, Peter Fraser, made it very clear to British authorities that New Zealand troops were 'subject to national oversight'⁸ and were not a commodity to be used in a fashion that might lead to high casualties. This attitude possibly prevailed due to the perception that New Zealand had sustained a high proportion of casualties per capita during the First World War while under the command of British generals.

The matter of jurisdiction over the railway engineers, and all New Zealand servicemen was an issue which tested joint co-operation

⁵ Ibid., pp.69-70.

⁶ R.D. Munro, 'New Zealand Railwaymen in World War Two', unpublished, 1994, p.20.

⁷ L. Barber and J. Tonkin-Covell, *Freyberg: Churchill's Salamander*, Auckland: Century Hutchinson, 1989, p.2.

⁸ Ibid.

between Freyberg and his British Army superiors. British General Headquarters, Middle East, denied sending New Zealand surveyors to these varied destinations, particularly Greece, leading Freyberg to petition his government back in New Zealand to make enquiries. Eventually the British admitted having dispatched these men without consulting Freyberg and apologised. The British agreed henceforth to inform the New Zealand High Commissioner or Headquarters 2NZEF of their intentions in regard to the employment and dispatch of New Zealand engineers. The telegram sent from the New Zealand Prime Minister to the British government has been lost, but judging how Freyberg responded in order to calm the rising tension between the two governments, it was strongly worded.

Despite the latitude that his 'charter' afforded him, Freyberg realised that a certain degree of acquiescence would be necessary in order to meet British demands and requirements. Freyberg demonstrated his diplomacy when he wrote to the New Zealand Minister of Defence, in response to the earlier letter sent to Britain by the Prime Minister, and explained to him the practicalities of operating within an overall British command structure. In his letter to the Minister, Fred Jones, dated 7 December 1940, Freyberg stated:

I have to confirm the fact that conditions under which the Railway and other Line of Communication units are serving entitles General Headquarters, Middle East, to move them in whole or in part at their discretion. Members of my staff have held many discussions with the Director of Transportation, (Brigadier C. A. Langley, Royal Engineers), who is the Staff Officer at General Headquarters most concerned, and have obtained his assurance that in future he will inform us of any moves of units or sub-units from their original locations. I have indicated to him that I think it most undesirable that sections of New Zealand units should be permanently separated from their parent units, and he has now assured me that he will reduce such actions to the minimum possible. He maintains,

however, that he has the right to move them about according to the exigencies of the service⁹.

It is obvious that Freyberg was annoyed that he had not been consulted about the dispatch of his surveyors to Greece, but recognised the reality of how a combined headquarters had to operate. However, he made his views about unit concentration and utilisation clear in a tacit manner in the same letter when he stated:

In order to minimise difficulties, it would be most desirable that all these units (in reference to the various Railway Groups and Army Troop Companies) should be kept concentrated and that detachments should not be made except as a very temporary measure, and that they should not be allowed to detach individual officers or men to bolster up weak British units¹⁰.

Freyberg was well aware that in order for New Zealand troops to participate fully in the forthcoming battles with minimum casualties, he would require the appropriate logistical support. Had Freyberg denied the British Director of Transport the use of New Zealand engineering troops for no valid reason, supplies to his fighting men might have been disrupted while the respective governments reached some mutual agreements on employment of 2NZEF personnel. In a letter Major-General Arthur Smith, Chief of General Staff, Middle East, placated Freyberg over sending his men elsewhere and assured him that they would rejoin their respective units as soon as Australian reinforcements were available for the campaign in Greece. Smith ended the letter with the comment: 'I know you want to get your Division together to train, and we are doing our best to help you. In this connection we realise you need more equipment and this will be supplied as soon as we can

⁹ Letter from General Freyberg to the Minister of Defence, 7 December 1940, *Documents, Relating to New Zealand's Participation in the Second World War 1939-45, Volume I*, Wellington: War History Branch, 1949, p.203.

¹⁰ *Ibid.*

possibly do so.'¹¹ It appears that this is a subtle reminder to Freyberg about where his equipment was to come from.

Italian expansionist aspirations were given a major boost when the Fascist dictator Benito Mussolini entered the war as an ally of Germany on 10 June 1940. Italy now looked upon Egypt as another potential conquest. Italy's entry to the war effectively closed off the Mediterranean sea route via the Suez Canal to Allied shipping, but Britain still regarded Egypt and Suez as strategically vital and endeavoured to hold them. Taking into account the fact that after the fall of France, Britain had no other major land battle fronts in which to engage Axis land forces, the whole situation in North Africa became politically as well as militarily important. Britain needed visible successes against the enemy to help alleviate the setbacks suffered in the retreat from Dunkirk which was humiliating, despite being portrayed as a sort of victory. By keeping North Africa out of Axis possession, the Allies had another potential front from which eventually to launch a seaborne invasion into Europe. It also appeared important for maintaining British morale to be able to take the fight to the enemy, rather than just build defensive positions. Winston Churchill, Britain's wartime Prime Minister, wanted results quickly, therefore General Wavell attacked the numerically superior Italian army massed along the Egyptian - Libyan border, with unexpected results.

Wavell's initial offensive of December 1940 pushed the Italians well back into Libya, enabling the port of Benghazi to be used for supply purposes, and capturing numerous prisoners. Despite the construction of a railway extension further west¹² being approved in December 1940¹³, the plan nearly foundered when Wavell advanced so far. With the battle going so well for the British between Sidi Barrani and Agedabia, the need for the extension 'was eliminated as railway construction could not keep pace with such

¹¹ Ibid., pp.205-6.

¹² At this stage, no absolute destination was mentioned, due to the anticipation of an Axis counter attack.

¹³ R.T. Smith, 'Military Construction in Middle East, 1941-43', *Proceedings of The New Zealand Institution of Engineers*, Vol. 33 (1947), p.488.

fast warfare, and in any case supplies could be taken forward to by ship to Tobruk and Benghazi¹⁴.

However, it soon became apparent that having lines of communications stretched so far from supply bases in Egypt was going to be a critical problem. While this early success was a boost for Allied morale, it posed a major logistical supply problem. Roads in North Africa were often very rudimentary, susceptible to rain wash-outs and obliteration by sand storms, and proved hard on military transport, causing rapid deterioration and innumerable breakdowns to vehicles.

With Middle East Command now having available a railway construction formation, properly equipped and supplied, it was a logical step to begin extending the Western Desert Railway as far west as the military situation would allow¹⁵. When the New Zealanders arrived in North Africa, the railway line terminated at the Egyptian beach resort, Mersa Matruh, approximately two hundred miles west of Alexandria and 120 miles from the Egyptian-Libyan border. Much of this line was an amalgamation of various construction materials from Fuka, the previous railhead, to Mersa Matruh¹⁶. The whole concept of building a rail line further into the desert came into question when Benghazi and Tobruk became available for receiving supplies¹⁷. Nevertheless, caution prevailed and construction went ahead.

By October 1940, Lieutenant-Colonel Anderson, Officer Commanding the Construction and Maintenance Group, had his full complement of construction units completed with the arrival of 13 Construction and Maintenance Company, commanded by Major (later Lieutenant-Colonel) R.T. Smith. Work began almost immediately on extending and upgrading existing train crossing loops and building new coaling and watering facilities between Mersa Matruh and Alexandria. This was carried out in anticipation of increased traffic in the months ahead. The construction gangs were initially

¹⁴ Ibid.

¹⁵ Cody, p.35.

¹⁶ Ibid., p.12.

¹⁷ Ibid., p.39.



Conditions such as this made a railway line a valuable asset for wartime transportation. Here a convoy of New Zealand three-ton lorries struggle forward in soft sand. New Zealand Army (H. Paton).

supplemented with local labour which failed to impress the New Zealanders. The men they were allotted were of two separate tribes, from Upper and Lower Egypt respectively. There existed an intense enmity between the two groups and fighting was always a very real concern. The extremely slow pace of work also added to the frustrations of the engineers.

Despite being in possession of the ports, which posed several problems for the British, a more reliable method of mass transportation needed to be found if Libyan territory was to be held. The line between Alexandria and Mersa Matruh had been extremely useful while the front line had been the Libyan/Egyptian border, but now that the front was deep into Libyan territory, it seemed logical that the railway should be further extended to serve the military's requirements. Upon reviewing the situation, Middle East Headquarters assigned New Zealand railwaymen, assisted by Indian labourers, to extend the Western Desert Railway to Belhamed, a small village several kilometres from the port town of Tobruk. Originally the railway extension was planned to reach Gadd El Ahmar, 300 miles from Similla¹⁸, but due the fortunes of war this objective was never reached.

Nevertheless, this extension of the rail line was almost certainly the single greatest contribution made by the New Zealand railway units. As a result, the coastal ships and their escorts, which were vulnerable to air and sea attack, could be released for service elsewhere, as could motor transport. Furthermore, the extension of this line enabled essential war supplies to be discharged from ships in the various harbours of Suez, and to be transported *en masse* in a continuous flow to the progressive railheads, far closer to where the fighting was taking place. From there it was transported by motor transport to the immediate front line.

Work began on this extension on 12 June 1941 at Similla, approximately eight miles east from Mersa Matruh. Similla was chosen for the junction as the terrain surrounding Matruh was too

¹⁸ This destination is incorporated on a map from Lt.-Col. R.T. Smith's collection, now held by the School of Military Engineering, Linton Camp. Also, see Cody, p.36.

steep for normal rail traffic to negotiate, and would have required major earthworks to build a suitable track-bed. The line was extended and terminated at Belhamed, on the periphery of Tobruk, 223.5 miles from Similla. Shortly after reaching Belhamed in June 1942, the Allies were forced to withdraw due to Rommel's eastward advance. The total length of all track laid on this military extension was 275 miles, of which 250 miles was completed in 265 days¹⁹.

The task of extending the line fell to a detachment of 9 Survey Company, led by Lieutenant D.U. White, who chose the most suitable route; Number Two Section, Mechanical Equipment Company were employed on formation; 10 Railway Construction Company - assisted by two Indian Pioneers Companies (the 1209 and 1212) carried out the platelaying, and 13 Railway Construction Company - assisted by one East African Pioneer Company - did the ballasting and servicing²⁰. A three to four mile gap separated these groups during construction²¹. When the railway was being extended further westward into the desert, large numbers of Indian pioneer troops were brought in to provide most of the unskilled labour. Despite their initial inexperience, the Indian troops 'showed the utmost keenness and performed their task with skill and speed'²². Comments from former New Zealand sappers regarding the Indian troops are far more complimentary than those directed towards the Egyptians.

The railway extension assumed top priority following the Afrika Korps' counter-attack, particularly as Colonel Anderson, Officer Commanding the railway companies, promised that he could build the line faster than previously thought possible. An example of the fast speed of construction was demonstrated when Anderson assigned the task of extending the line 12 miles from 'Piccadilly' to Misheifa to Major R.T. Smith and his men of 13 Railway Construction and Maintenance Company. On reaching Misheifa, they

¹⁹ Smith, p.487. Following the German occupation of Tobruk in June 1942, they further extended the line 15 miles into Tobruk itself by using rails and sleepers from crossing loops and sidings.

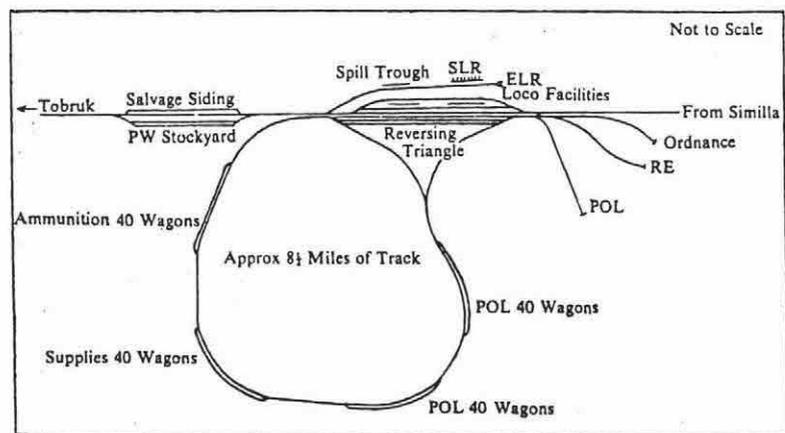
²⁰ Cody, p.257.

²¹ Cody, p.257.

²² Smith, p.487.



New Zealand railway construction gangs, assisted by Indian pioneer troops extending the railway in the Western Desert. New Zealand Army (M.D. Elias).



N.Z.M.S. 101/334

Drawn by Lands & Survey, N.Z.

MISHEIFA DEPOT

Diagram of the circular depot at Misheifa. By dispersing the sidings and loading bays over long distances, aerial bombing failed to inflict major damage. POL-denotes petrol, oil and lubrication. (Cody).

had to construct a depot, complete with a marshalling yard, sidings for all services, vehicle recovery and ambulance trains and locomotive facilities. A total of 86 miles of track had to be laid in 57 days²³. With this new railhead, the army could move war material close to the front line in preparation for the forthcoming battle. It was estimated that without it, around 5000 motor lorries would have to have been diverted to move this equipment up from supply bases located further east²⁴. Desert conditions were extremely hard on motor vehicles, as sand and rocky terrain caused excessive wear on mechanical parts and tyres. For example, it was estimated that the effect of speed on the life of tyres correctly inflated was

at 30 mph - no rubber wasted
 at 40 mph - 24% rubber waste
 at 50 mph - 41% rubber wasted
 at 60 mph - 57% rubber wasted
 at 70 mph - 70% rubber wasted²⁵.

In excess of 4000 tons of supplies were brought daily to this new railhead²⁶ in up to seven daily trains, a considerable amount when the port of Tobruk could only manage a maximum capacity of 900 tons per day. If motor transport had been the only means possible, consumption of rubber would have been enormous.

Colonel Anderson displayed initiative in constructing these new military railheads. Rather than build conventional rail yards with the mainline, loop siding and shunting roads all parallel to one another, Anderson chose to build a large balloon type of yard with service spurs branching off at varying distances. The three major commodities serviced by these spurs were petrol, oil and lubrication, known as 'POL sidings'. Other spur lines were specifically designed for rapid unloading of armoured vehicles. This method of yard construction had been experimented with earlier at

²³ Ibid., p.490.

²⁴ Cody, p.172.

²⁵ WAI DA 126/1, Routine Orders, 13 Railway Construction Company, 1 August 1942, National Archives, Wellington.

²⁶ Smith, p.469

Wadi es Serar in Palestine by 3 Section, 9 Survey Company²⁷. Such a widely dispersed yard made it a far more difficult target for aerial bombardment²⁸. As there was no lack of space in the desert, Anderson's design was adopted for further major railway yards.

In addition to the serviceable railheads, the construction crews built dummy rail-yards to regular configurations in an attempt to foil enemy pilots into bombing the wrong targets. The decoys were made more believable with false wagons, fuel, accommodation, anti-aircraft guns and other assorted rail depot equipment provided by the Mobile Section of 85 South African Camouflage Company²⁹. Considerable ingenuity was adopted in building these dummy yards, even to the extent of having furnace glow special effects designed to imitate a hot locomotive, and straw dummies placed in slit trenches. To enhance the deception, some of the Bofors guns defending the false rail-yards were real. One former railwayman who witnessed many of these attacks 'conservatively estimates that for every ton of bombs dropped on the real railhead, four tons were dropped on the dummy'³⁰. Moreover, German propaganda 'consistently reported the total destruction of the railhead complex'³¹.

Provided the sappers building this extension were regularly supplied with the appropriate materials, the line was extended on average at a rate of over two miles per day³² in a twelve-hour shift. Occasionally, when conditions were favourable, with little effort being required to construct the track-bed, the sappers pushed the line ahead at a rate of over four miles in a single day³³. This track-laying record was set by the combined efforts of a total of 273

²⁷ Cody, p.35.

²⁸ Ibid., p.174.

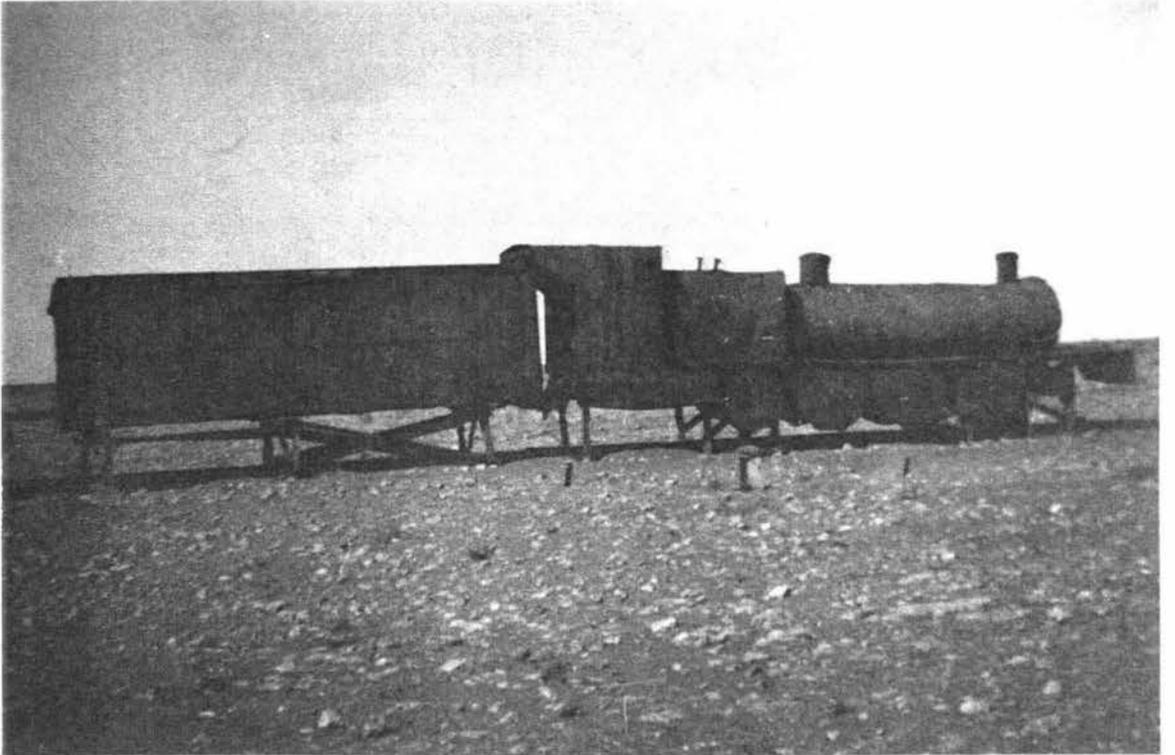
²⁹ Ibid., p.176.

³⁰ B.L. Campbell, 'One Sapper's War', personal memoirs, unpublished, 1997, p.9. Mr Campbell was a sapper-locomotive fireman with 16 Railway Operating Company.

³¹ The British traitor 'Lord Haw Haw', would frequently claim that the railheads had been destroyed during his broadcasts. Ibid.

³² Smith, p.487.

³³ Cody, p.261.



Dummy locomotive at Mischeifa. These decoys absorbed many aerial attacks directed at railway targets in the desert regions. McLenaghin Collection.

Indian and New Zealand construction personnel³⁴. However, in order for the rapid construction to occur, it was important that the supply trains coming from Alexandria were 'balanced', that is correctly loaded with rails, sleepers and tie-bolts. Considering tracklaying was being carried out over 400 miles away from the port of supply, it was a great feat of organisation that the sappers were rarely delayed by equipment not arriving in sequential order³⁵. However, due to war irregularities, tracklaying equipment did not always arrive as expected. In these cases, the sappers carried on working with whatever materials were available and the schedule was maintained.

During a working day, the Indians and New Zealanders laid out 5,000 sleepers, set onto the sleepers 650 rails, drilled 2,000 holes, drove 20,000 dogspikes and turned 1,300 bolts³⁶. In order to meet the set daily targets, approximately 900 tons of railway construction material had to be brought up from the supply dumps, unloaded and then 'snigged' into place³⁷.

In addition to the actual track being laid, the construction of railway buildings, platforms, telephone sheds and loading banks was required before trains could operate safely and regularly³⁸. Once the track was completed, it fell to 13 Railway Construction Company to effect major repairs or maintenance, as they possessed a mobile workshop³⁹.

As major railway construction had not been envisioned by the New Zealand engineers, a special plan was devised, calling for the use of reliable plant and a methodical approach. This combination of reliable plant and supply, and a set labour drill from well disciplined troops, resulted in the rapid advance of this line. Such was the speed of construction that troops heading out into the

³⁴ Ibid.

³⁵ Smith, p.483. Here Lt.- Col. Smith praises the personnel from Transportation Stores and Movements for their dedication in keeping his men properly supplied.

³⁶ *Auckland Star*, 5 December 1941, (page number unknown).

³⁷ Ibid.

³⁸ Cody, p.258.

³⁹ Ibid., p.257.

desert regions on three-day patrols thought they were lost on their return when they saw railway lines and trains whereas before there had only been featureless desert⁴⁰.

Living in the most rudimentary conditions, eating the plainest of rations and having only air attacks to relieve the tedium, the men of the Railway Construction and Maintenance Companies, along with their Indian labourers, greatly assisted the Allied supply situation during the North African Campaign. When the extension was completed and the Indian companies were to be utilised elsewhere, their commanding officer wrote to express a desire to 'accompany the New Zealanders in their new enterprises'⁴¹. He also thanked the New Zealanders for their 'sympathetic feeling, kind disposition' and stated that he hoped the same courtesies would be extended to them from the South Africans whom they would assist next.

In an age when imperialism was still very much alive, it is interesting to note how hostility between races was put to worthwhile use. The Italian fascists in Libya had tended to treat the local populace with barely restrained contempt and harshness. After Wavell's early successes deep into Italian-held Libyan territory, many prisoners were taken, including Libyan soldiers. Due to their resentment towards their former Italian overlords, the captured Libyans required only token guarding and were even formed into work gangs for the railway companies, despite not being required to work according to the Geneva Convention⁴². Even the captured Italians were relatively easy to guard. Whereas the New Zealanders displayed tolerance towards the local peoples, the antipathy displayed by the regular British Army towards the Egyptians served to increase hostility and even led to pro-German sentiments developing amongst politically polarised Egyptians. This was later transmuted into acts of sabotage against Allied forces⁴³. Moreover, when men from the railway companies found themselves

⁴⁰ Smith., p.488.

⁴¹ WAI DA/1, Letter sent from the Officer commanding 1203 Indian Army Pioneer Corps to Major R.T. Smith, Officer Commanding 13 Railway Construction and Maintenance Company, 11 November 1942, National Archives, Wellington.

⁴² Campbell, p.6.

⁴³ Cody, p.43.

working in Palestine their 'neutrality' meant that they were more accepted by the indigenous religiously-divided populations. New Zealand surveyors were able to carry out survey work on the Hejaz line, as 'Palestine Railways could not supply a Britisher, and Transjordan would not accept a Jew'⁴⁴.

Despite the Allies being in possession of the Western Desert Railway and the Suez Ports, the Transportation Director was anxious to improve the line of communication along the Nile Valley by linking the Egyptian and Sudanese railway systems. In conjunction with this idea, senior military planners also wanted a rail connection between Upper Egypt and the Red Sea⁴⁵.

Therefore two officers from 9 Survey Company, Captain Halley and Lieutenant White, were sent to investigate the validity of such a proposal. The port selected was the phosphate mining town of Safaga, 250 miles south of Suez. A route was located along the wadhis and hills from Safaga to Qena, on the Nile. 9 Railway Survey Company was then directed to survey the 110 mile route for railway construction and the port for further development⁴⁶. Sappers from Number One Section quickly pegged the route that the railway would follow through the steep and difficult terrain, but owing to commitments elsewhere, New Zealand construction troops were unable to build the line. This task was given to the Egyptian construction workmen.

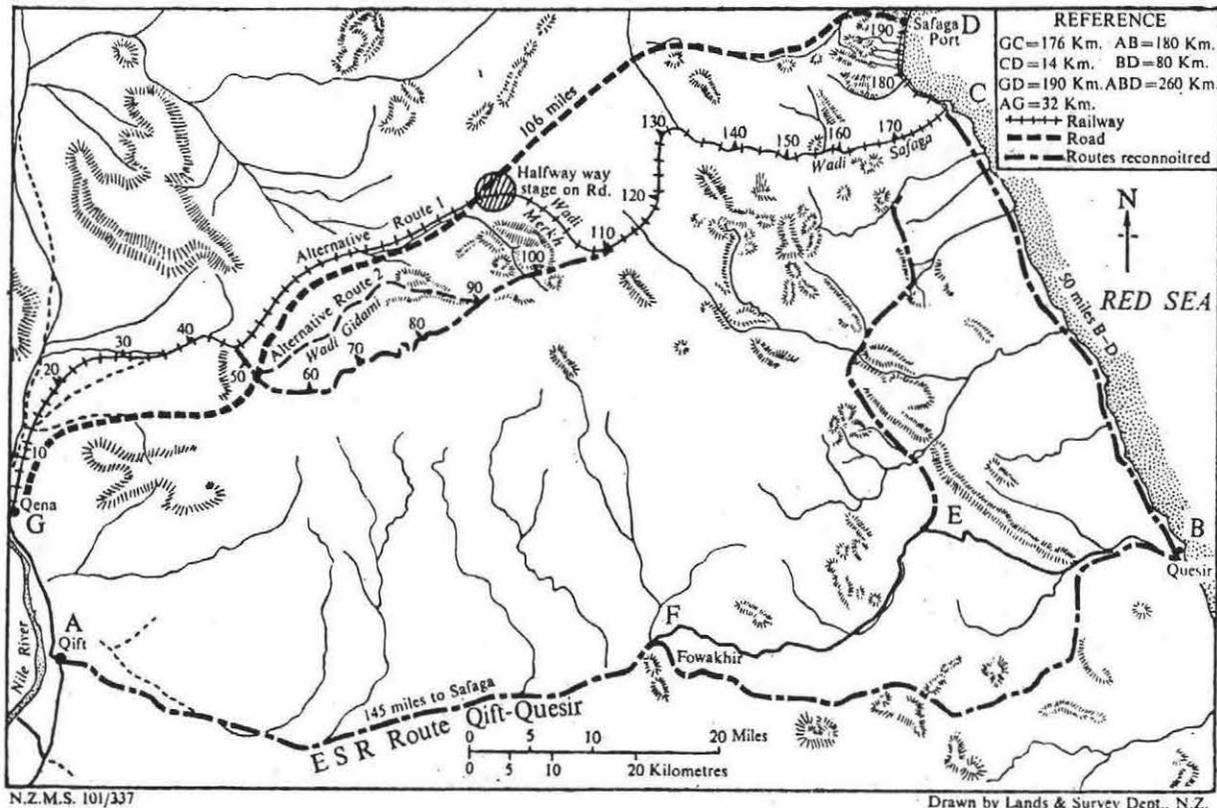
Fortunately for the Allies, the Axis forces were halted at El Alamein, and the Qena-Safaga line was not required either as an evacuation point or as a supply route. Despite the time and money invested in this project, the line was never used and the track was taken up after the war.

In another attempt to utilise the Nile as a supply route and to relieve pressure on congested Suez ports, war supplies were being railed from Port Sudan on the Red Sea, to Wadhi Halfa on the Nile.

⁴⁴ Ibid., p.337.

⁴⁵ Ibid., p.166.

⁴⁶ Ibid., p.167.



N.Z.M.S. 101/337

Drawn by Lands & Survey Dept., N.Z.

THE QENA - SAFAGA ROAD AND RAILWAY

The Qena-Safaga Railway. Surveyors from 9 Survey Company planned and pegged the route which was then built by Egyptian State Railways personnel. This railway was not used by Allied forces.

These supplies were then barged down-river to Shallal where they were once more loaded onto railway wagons. This method of transportation worked well, but when the Nile was low, often for periods up to three months, sand banks below Wadhi Halfa were exposed, making it difficult for river barges to navigate⁴⁷.

To overcome this problem, it was deemed important enough to construct a railway link between Wadhi Halfa and Toshka, 63 miles up-river, where the water once again became suitable for river transportation. Number Three Section of 9 Railway Survey Company were sent to survey a rail link with Toshka and to find a way to connect the three foot six inch Sudan Railways to the standard gauge Egyptian Railway at Shallal. The New Zealanders then proceeded to survey the route.

However, their efforts were not popular, either with local farmers and politicians. As the proposed route traversed ancient burial grounds and areas of cultural importance, the men were frequently opposed by various interest groups. Due to the political suspicion between the Sudanese and Egyptian Governments, and difficulties in obtaining permission from landowners and the Antiquities Department, the railway never got beyond being surveyed and planned⁴⁸.

From June 1940 to July 1943, the New Zealand railway construction and survey companies appear to have been the premier railway formation in the Middle East. Their expertise and services were required by numerous military planners, and they carried out the tasks assigned to them with a high level of professionalism and dedication. Quite possibly the railway surveyors were the most well travelled New Zealand troops during this phase of the war, with railwaymen working in Egypt, Eritrea, Greece, Libya, Mesopotamia, Palestine, Persia, Sudan and Syria. Due to wartime censorship, many people in New Zealand did not know the full extent of these railwaymen's contribution to the war effort.

⁴⁷ Ibid., p.731.

⁴⁸ Ibid., pp.732-3.

Chapter Three

Contributions made by the New Zealand Railway Operating Group

By examining the work which the railway operating companies performed in the Desert and Middle East Campaign, this chapter will attempt to assess how much they aided the Allied war effort in North Africa and the Levant. Due to the various tasks assigned to the individual railway companies being carried out simultaneously, this account is divided into sections which deal with the companies individually rather than following a chronological sequence. The duties of the operating companies included their interaction with Egyptian State Railways (ESR) staff, train consists and the withdrawal of equipment during Rommel's offensive. Finally, but no less importantly, the railwaymen assisted the Royal Navy in waterside duties in North African ports. By examining their respective roles, this chapter will attempt to assess the actual contributions of the railway operating companies made to the overall success of this campaign.

Having created railway construction and maintenance units within the New Zealand Army Engineer Corps, it remained to form a unit that had the skills necessary actually to operate a railway system. To become an integral self-sufficient transport unit within the army, engine drivers, train guards and shunters were now required¹. In order to maintain and repair railway rolling stock and locomotives, fitters and artificers were also needed. Therefore the call went out once again from the Minister of Railways, Daniel Sullivan, on 14 June 1940, asking for 'railwaymen for the formation of two Railway Operating Companies for service overseas to be manned entirely by officers and men of the Railway Service'². Locomotive depots throughout the country were particularly

¹ Telegram 293, from the Secretary of State for Dominion Affairs to the Prime Minister of New Zealand, 13 June 1940. This telegram requested two railway operating companies to be formed. *Documents, Relating to New Zealand's Participation in the Second World War 1939-45, Volume I*, Wellington: War History Branch, 1949, p.215.

² R 501/1. Circular memorandum No.62. National Archives, Wellington.

targeted with notices being posted which 'earnestly requested' engine drivers, acting engine drivers, firemen and acting firemen to volunteer. During the steam era, engine drivers were generally men who were aged from their late thirties upwards, so for many volunteering was quite a sacrifice³.

As a result of the call, two Operating Companies and one Headquarters Company were formed, generally with men from the South Island going to 17 Operating Company and North Islanders in the 16 Operating Company. On 27 August 1940 these companies were dispatched overseas after training at Hopu Hopu camp near Ngaruawahia as part of the Third Echelon 2NZE⁴. They reached Egypt on 29 September at Port Tewfik and were then sent to Maadi Camp near Cairo, which was to be New Zealand's main base camp in the Middle East theatre.

Being specialist units, it was seen as essential that the officers commanding these men were also from railway backgrounds. The logical source for people with the necessary technical expertise was the Railways Department Head Office. The Officer Commanding the Railway Operating Group Headquarters was Lieutenant-Colonel A.H. Sage with Major F.W. Aickin⁵ commanding 16 Railway Operating Group, and Major G.T. Poole commanding 17 Railway operating Group. All three men had previous war service from the First World War⁶. Despite being a military unit, the usual disciplines enforced upon other army companies were somewhat relaxed for these 'civilians in uniform', with marching and saluting being viewed as less important than sound practical mechanical knowledge. Shortly after arriving in Egypt, suitable men were selected from within the

³ It was only during the 1980s, when the author was working as a locomotive engineer, that the time limit for sitting the required locomotive engineers examinations was lowered, which enabled men younger than their late twenties to become full second-grade engine drivers.

⁴ R.D. Munro, 'New Zealand Railwaymen in the Second World War', unpublished, 1997, p.32.

⁵ Aickin eventually became General Manager of New Zealand Government Railways after the war.

⁶ J.F. Cody, *New Zealand Engineers, Middle East*, Wellington: War History Branch, 1961, pp.31-2.

ranks and promoted to take responsibility for the daily operating of the railway companies.

The primary task of the New Zealand railway companies dispatched to the Middle East theatre was to work in conjunction with the local railways' employees in all aspects of normal railway operations, including extending and upgrading the original railway systems. Existing railway resources were unable to cope with the increased rail traffic that occurred due to the war. This, combined with some local indifference, even hostility to the largely British war effort, in particular rail traffic movements, led Allied commanders to utilise their own military railway personnel.

Egypt found itself placed in a difficult situation. The Egyptian Government was not technically at war with the Axis countries, and this posed a political problem for them in aiding Britain's war effort. Despite this, Egypt was obliged to allow its railway system to be utilised by British forces. The major problem this created was train crew shortages, worsened by the unreliability and obsolescence of much of Egyptian State Railways' locomotives, rolling stock and signalling systems. However, the Egyptian State Railways had no intention of surrendering the line while enormous profits were to be made from freight charges⁷. Having been requested to assist with Britain's wartime transport shortages, New Zealand railwaymen were given the task of operating trains and maintaining rolling stock, locomotives and the permanent way in conjunction with their Egyptian counterparts.

Of particular concern to the New Zealand railwaymen and to transport planners especially, was the very casual attitude adopted towards train running by Egyptian railwaymen. While Egyptian methods were not overtly dangerous, they did conflict with the more 'professional' approach taken by the New Zealanders. Whereas efficient time-tabling was paramount to New Zealand railway staff, it was not considered a high priority by their ESR counterparts. This is the predominant reason why Egyptian railway staff were eventually usurped by the New Zealanders. However, the fact that

⁷ Ibid., p.40.

Egypt was a neutral country and that there was the possibility of casualties amongst their railwaymen also contributed to their removal from the forward areas.

Being from a country where people were theoretically equal despite racial differences, the New Zealanders appeared to have a far greater tolerance towards the Egyptians than did the British and later the South Africans. Several former sappers have made the point that Egyptians were 'a bit like Maoris, good workers when supervised, but prone to backsliding when the boss is out of sight'⁸. Such was the New Zealanders' sense of social justice, they were 'outraged' at the practice employed by the Egyptian *Rais* or foreman, through which he would extract 10% from each labourer's wage packet⁹.

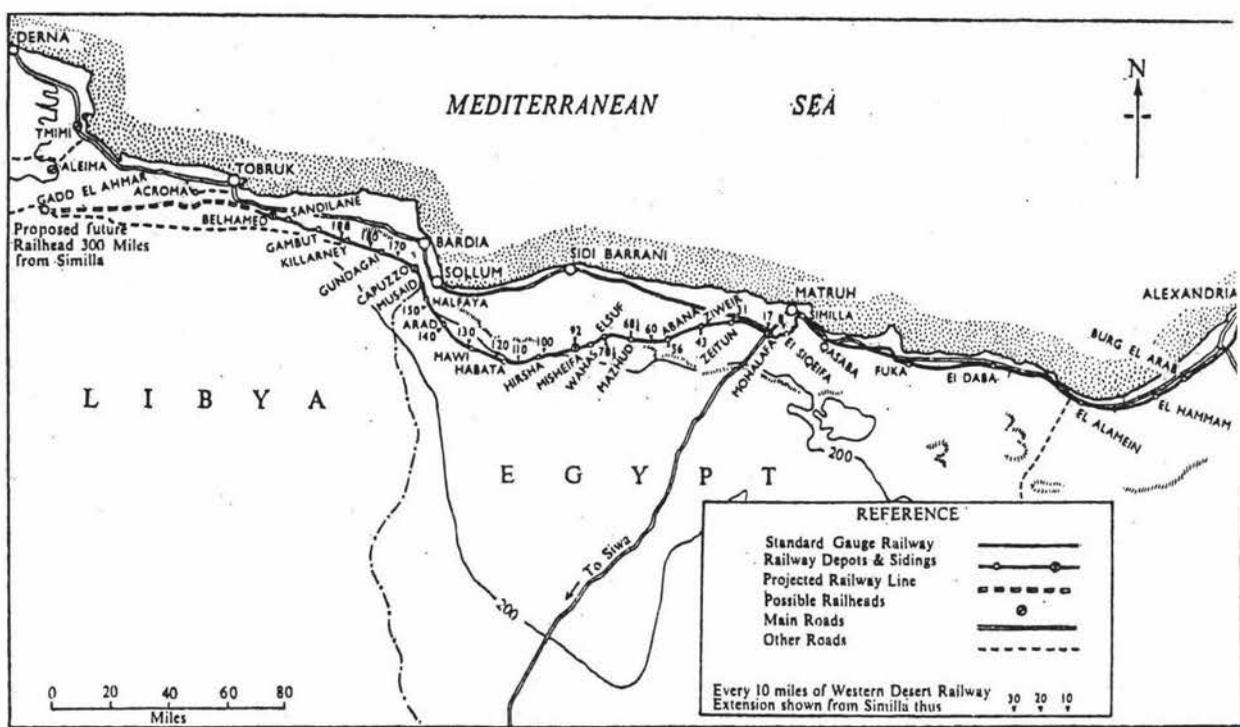
Operating a railway during a war was vastly different to peacetime operations. Furthermore, to the New Zealanders it seemed that timetables and efficiency were almost antitheses to the Egyptians. With the addition of so many more trains the situation had the potential to deteriorate into hopeless delays. Nevertheless, the Egyptians had to be handled in a delicate fashion to avoid offending them and creating diplomatic incidents. The solution was to assign each New Zealander to their local counterpart as a 'learner'¹⁰. Consequently every Egyptian station porter and train crew had a shadow crew, ostensibly to 'watch and learn', but in reality to maintain order, timetables and generally speed the whole process up. However, by the beginning of Rommel's 1941 offensive, the New Zealanders were operating trains without ESR¹¹ staff, as the situation demanded rapid train movements, and the pretence of

⁸ This is the general view of Egyptian workers from Mr W.H. Elliott, Mr B.L. Campbell and Mr J.A. Dangerfield, all former sappers in the Railway Operating Companies. Their comments were in no way intended to be offensive. The author has condensed the overall sentiments of these men.

⁹ B.L. Campbell, 'One Sapper's War', personal memoirs, unpublished, 1997, p.5. Mr Campbell was a former sapper-locomotive fireman with 16 Railway Operating Company,

¹⁰ Ibid.

¹¹ Cody, p.166. New Zealand train crews had been operating trains west of Alexandria *sub rosa* and were finally given official sanction by Egyptian military high command to take over the running of trains.

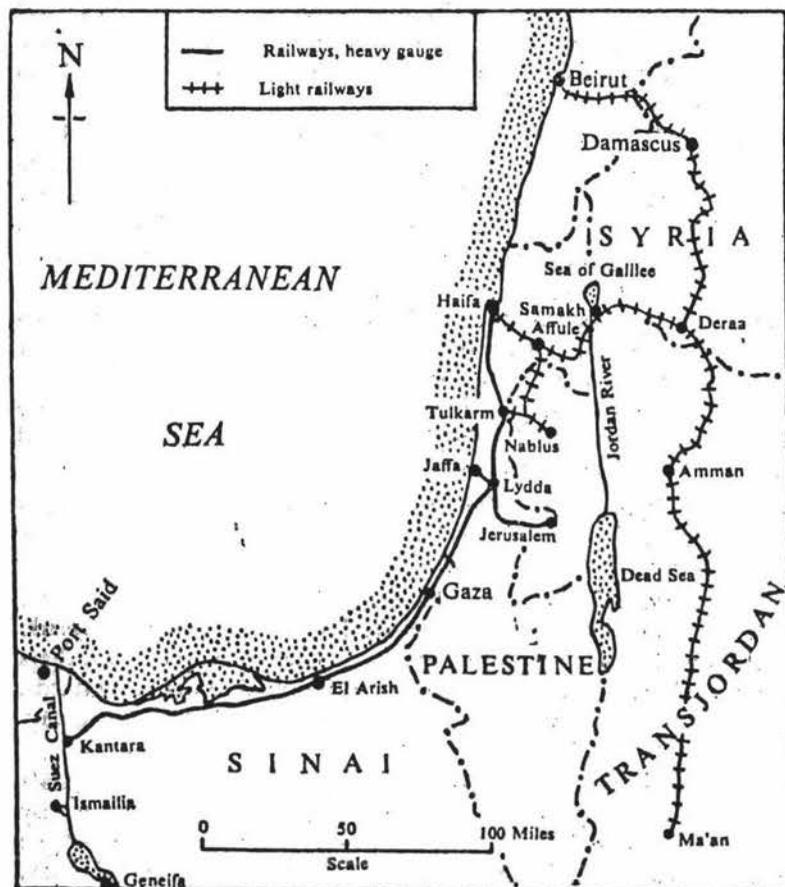


N.Z.M.S. 101/326

Drawn by Lands & Survey Dept., N.Z.

WESTERN DESERT RAILWAY AND EXTENSION

Principal areas where New Zealand railwaymen maintained, extended and operated railways. Above. The Western Desert Railway and subsequent extension from Similla. Below. The Hejaz Line in Palestine where New Zealanders worked in the Samakh and Tulkarem region. (Cody).



N.Z.M.S. 101/332

Drawn by Lands & Survey Dept., N.Z.

CHIEF RAILWAYS OF THE LEVANT IN 1941

diplomacy was discarded, with New Zealand railwaymen taking over completely.

Respect for each other appears to have been mutual, and the New Zealanders believed that the Egyptian train crews did not resent the presence of the shadow crews. One former engine driver who served with 16 Railway Operating Company stated that most of the Egyptian crews were conscientious in carrying out their duties while New Zealand railwaymen were present, and that the only delays were attributable to their regular daily observation of prayer¹². Generally, the railwaymen of the 16 Railway Operating Group appeared to have enjoyed a relatively harmonious relationship with their Egyptian counterparts.

The primary section of track on which the railway companies were employed in Egypt was initially the section of line between El Daba and Mersa Matruh, a distance of 86 miles, in conjunction with ESR staff. The New Zealand railwaymen were reasonably self-sufficient, being able to maintain the 86 mile section of track, carry out shunting duties, and maintain safe signalling procedures and train operations. Prior to the arrival of the New Zealand railwaymen, this section of line had been operated by a small composite railway unit, 10 Company, Royal Engineers, who were now being forwarded to the Sudan¹³.

Once the extension was completed in June 1942, New Zealand railwaymen also worked trains to the terminus at Belhamed. This section between El Daba and Belhamed became the responsibility of 16 Railway Operating Company, later joined by 17 Railway Operating Company. A British military composite railway company operated the line from Alexandria to El Daba, also with ESR staff present. However, they did not operate on the desert railway extension. Furthermore, New Zealand railwaymen found themselves in the distant Libyan port town of Benghazi. Here they briefly

¹² Information supplied to the author by Mr W.H. Elliott, former fireman with 16 Railway Operating Group, 23 April 1998.

¹³ Cody, p.39.

operated a narrow gauge railway until the German counter offensive forced them to retreat.

Signalling was based upon British methods whereby a 'token', in this case a metal staff with the corresponding station names engraved upon it, was the authority required by an engine driver to enter a specific rail section. It was surrendered upon arrival at the next station¹⁴. However, this manner of controlling rail traffic was occasionally suspended even by the New Zealanders during periods of intense activity when speed was essential for re-supplying forward positions. Due to the volume of one-way traffic during the 'great retreat' of 1942, when Rommel's forces reached El Alamein, the staff machines emptied, and trains had to run on 'line of sight', not a situation engine drivers enjoyed.

As Egypt had remained neutral, the Allies were required to pay for damage or loss of ESR rolling stock and locomotives, despite the latter organisation earning substantial revenue from freight charges. This caused an ongoing problem for Middle East command, as ESR officials inspected their rolling stock prior to entering the war zone, pronouncing it to be in good repair. Upon its return they would allegedly manufacture or falsify damage reports and then seek reparation from the British. Such complaints were lodged even though it was blatantly obvious to the New Zealanders that rail vehicles had sustained no damage whatsoever¹⁵. New Zealand officers and men were constantly watching for fraudulent claims, partly to protect their reputations, but also to avoid additional costs being incurred, all the while being conscious of avoiding diplomatic upsets.

Using ESR employees also posed problems with theft and sabotage. The 'trimmings' off locomotives were particularly vulnerable to theft. These were devices that distributed oil to the necessary ancillary machinery and locomotives were inoperable if they were missing. Sabotage was a real, and serious, cause of concern to

¹⁴ J.A. Dangerfield, Letter sent to the author detailing signalling operations used on the Western Desert Railway, 22 August 1998, p.2. Mr Dangerfield was an NCO with 17 Railway Operating Company.

¹⁵ Campbell, p.8.

railway operations. Some ESR staff were anti-British and actively sympathetic to the Axis cause. Such acts of sabotage involved wrongly setting points, which led to wagons colliding and derailing; putting sand into axle-boxes, which caused excessive wear and eventual collapse; deliberate wastage of valuable locomotive water through leaving spigots open; and opening steam valves to exhaust steam pressure into the atmosphere¹⁶.

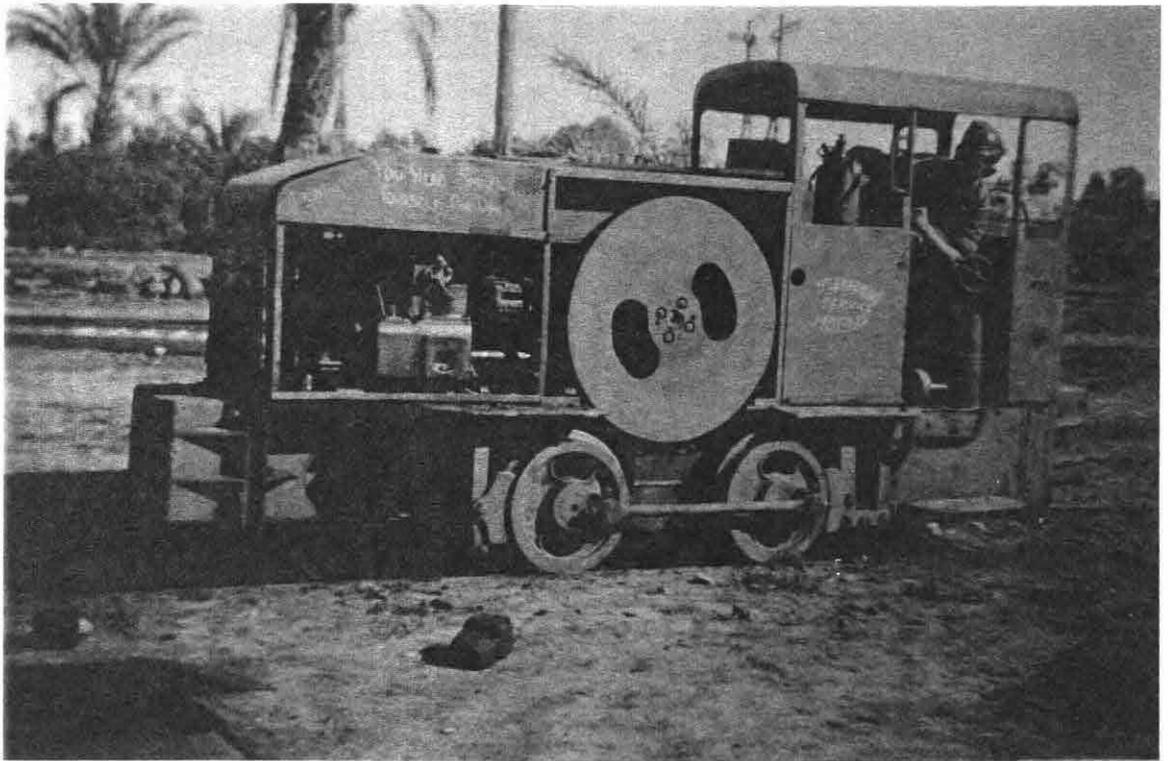
These acts sometimes created an uneasy working environment and tested the diplomatic skills of officers involved. They also had the effect of doubling the work-load for the New Zealanders, as not only did they have their own tasks but they also had to constantly monitor the activities of ESR staff and other local civilians. Military standing orders constantly stressed the need for vigilance and awareness of fifth-column agents. On occasions ESR staff allegedly attempted to delay trains, citing the need to observe their Islamic prayer rituals¹⁷. The Allies believed that the Germans were being supplied with intelligence from Egyptians as aerial attacks frequently occurred shortly after trains were marshalled and ready to commence their journeys. Fortunately it seems that the spies were invariably inaccurate in their timing and most trains were leaving the yards as the bombers appeared¹⁸. Nevertheless, relations with the ESR staff were fairly amicable, and rarely erupted into violence.

The primary task of the railway operating companies was to operate supply trains from eastern Egypt to the railheads, from where motor transport conveyed the materials to the various military units in the field. While most of the attention was focused on the line extending from Mersa Matruh, a little known Italian-built railway running between Benghazi, Barce and Soluk in Libya also generated enough interest to warrant a detachment of railway personnel travelling there in early February 1941 to examine the practicability of using it.

¹⁶ Information supplied to the author by Mr Campbell, 17 June 1998.

¹⁷ Dangerfield, Transcript of 'Sounds Historical', radio interview by Jim Sullivan, 30 April 1997, p.6.

¹⁸ Campbell, p.8.



Benghazi railway. here a New Zealand railwayman operates this single-cylinder diesel shunt locomotive. This machine required compressed air to assist in starting. The chalk markings read "Don't laugh, you were small yourself once". Dangerfield Collection.

Lieutenant Bishop, accompanied by 18 men from 16 Railway Operating Company, arrived in Benghazi in February 1941 with the intention of getting the small railway operable despite the attempts by the departing Italians to destroy it. On their arrival, the New Zealanders discovered three steam locomotives, two small diesel shunting locomotives and sundry rolling stock. Along with the remnants of the railway, several local railwaymen remained, including an Italian stationmaster. However, due to the 'doubtful loyalty of Arab locomotive staff, it was found necessary to employ 17 Railway Operating Company personnel'¹⁹.

The Benghazi railway system, which had a narrow 1.04 metre gauge, began at Benghazi port and terminated at Soluk 38 miles south-west and at Barce, 68 miles east, a total of 106 miles²⁰. The Benghazi-Soluk section was not used frequently, but the New Zealanders worked two trains daily right to the Barce terminus. These trains were employed to transport Italian prisoners-of-war and petrol. The captured Italians, approximately 850 per day, were railed to Barce and petrol railed back to Benghazi. The New Zealanders worked in Benghazi until April 1941 when the Axis advance forced them to retire eastwards. The Allies having lost Benghazi, the RAF then began to bomb the railway that had been so carefully maintained by the railwaymen.

Following the re-occupation of Benghazi at the end of 1941, 27 railwaymen, workshop and locomotive personnel, under the command of Lieutenant McLenaghin, arrived in the town on 5 January 1942²¹. The railwaymen's job was to repair the railway damaged both by deliberate demolition and aerial bombing, to get shunting services operable and to move military stores from ships unloading in the port. The numerous '*Bomba inesploda*' notices were testimony to interest shown by the RAF²² following the withdrawal of April 1941, requiring the railwaymen to be cautious

¹⁹ WAI DA 130/1/17. Report sent by Lt. H.E. McLenaghin to Headquarters, 16 railway Operating Company, 10 January 1942. National Archives, Wellington.

²⁰ S. Lahman, Private memoirs compiled from interviews with former Railway Operating Company personnel, unpublished, p.7.

²¹ Cody, p.253.

²² Cody, p.254.

in their movements. McLenaghin reported to Headquarters that the line was serviceable between Benghazi and Lete depot on the Barce line, and between Berka and Guarsia on the Soluk line²³. Several locomotives were available, with one lightly damaged and several others requiring more serious repairs with spare parts being obtained by 'cannibalising' wrecked machines and even powerhouses²⁴. The small steam locomotives were only capable of hauling trains of 200 and 180 tons respectively. Two small diesel locomotives and a railcar were found to be intact, but diesel fuel was unavailable²⁵.

Having effected minimum repairs, the railwaymen began to 'move thousands of 250 lb aerial bombs to a deep quarry about two miles distant for storage'²⁶. Due to the Royal Navy requisitioning the small stockpile of approximately 400 tons of coal²⁷, it appears that rail operations on this line were very tenuous and not viewed as a vital necessity by the Director general of Transportation. However, on 25 January, the town had to be evacuated again due to an imminent Axis counter attack. The bombs which the railwaymen stored were captured by the Axis forces and later used against the Allies²⁸.

The most vital commodity transported by rail was water, which almost became more precious than petrol in desert conditions. Retreating enemies ensured water supplies were destroyed, even to the extent of rendering wells unusable with bone oil and salt²⁹. Water was not only important for human consumption, but was also required by the locomotives for steam generation. The supply for locomotives was alleviated by building a pipeline from the Nubariya Canal at the edge of the Nile Delta³⁰ to Mersa Matruh.

23 WAI DA 130/1/17. McLenaghin report, 10 January 1942.

24 Ibid.

25 Ibid.

26 Dangerfield, p.7.

27 WAI DA 130/1/17. McLenaghin report, 10 January 1942.

28 Dangerfield, p.7.

29 Cody, p.279.

30 Ibid., p.255.

This water was unsuitable for drinking but served the steam engines well. Eventually fresh, clean water became available for humans to use. Locomotives operating beyond Mersa Matruh were coupled to two four-wheeled 4000 gallon water batteries, in addition to the 4000 gallon capacity of the locomotives tender. This combined water quantity of 12,000 gallons was required for a 196 mile return journey from Similla to Misheifa, equating to 61 gallons of water per mile³¹. The official recommendation for a locomotive's water consumption in the desert was 50 gallons per mile³². Without the regular water supply from the pipeline, the desert railway could not have functioned to the capacity that it actually did. Steam locomotives hauling heavy trains have a voracious appetite for water. For example, 15 trains required 115,000 gallons of water in running between El Daba and Mersa Matruh³³.

As trains were usually run at the maximum weight of 1300 tons, equivalent to 65 four-wheeled wagons, maximum productivity was derived from the transported water. The engine drivers did this by adjusting their driving to desert conditions. Railway lines in New Zealand were well furnished with locomotive watering facilities, both within depots and on the mainline. However, the scarcity of water in the desert made the engine driver and his fireman re-evaluate their driving methods. To run short of water in the open desert was to invite an air attack while awaiting re-supply. Train crews were also aware that steam and smoke was very visible during both day and night, and accordingly tried to minimise emissions while maintaining maximum tractive effort. These feats were difficult enough in ordinary train running, but exceptional when operating under pressure.

Additional pressure was brought to bear on locomotive crews due to the uncertainties in operating trains in a war environment. These men would 'book on' duty with their rifles and sufficient food to

³¹ Mr Campbell has an engineering background and kept careful records of locomotive water expenditure in the desert conditions. This information was supplied to the author 17 June 1998.

³² W.G. Fryer, 'The Military Water Problem in the Western Egyptian Desert, 1940-43', *The Royal Engineers Journal*, 64:2 (1950), p.140.

³³ WAI DA 130/1/17. Operation Report, 17 Railway Operating Company, 16 January 1942. National Archives, Wellington.

last between two to four days³⁴. Shifts could often last up to 36 hours without a break³⁵. Rest and sleep deprivation combined with infrequent meals led to the men becoming increasingly fatigued.

Following the British offensive of late 1942, which saw the British Eighth Army begin to push the Afrika Korps back again, American diesel locomotives were introduced in an attempt to alleviate the critical water problems associated with operating steam engines in a desert environment. Unfortunately the diesel locomotives were not as powerful as the British-built Stanier 8F class steam locomotives that had been used previously. The heavier steam locomotives' power rating was 120 bhp, double that of the diesel locomotives. It therefore required two of the latter to haul a train that required only one steam engine ordinarily³⁶. However, the main advantage of using diesel locomotives was that they did not require constant water replenishment, and diesel fuel was easier to access than coal.

Drinking water was transported in wagons and eventually distributed to individual troops. Due to the numbers of troops in the field, any suitable vehicle of conveyance was pressed into service, even disused locomotive tenders. Water could be stockpiled, but enemy aircraft targeted water dumps wherever they could. However, the Roman conquerors of centuries before had built subterranean storage cavities for both grain and water. These 'birs' were built of stone blocks without the benefit of cement³⁷. It became apparent that birs could be used for water storage when the railway line was being extended into the desert. After cleaning them out and testing them for leakage, the railwaymen built rail-sidings and concrete spillways to enable trains to discharge purified water from Alexandria into them. This operation could be done quickly due to the spillways, which enabled trains to be halted for short periods, reducing the risk of air attack, and permitting an immediate return to Alexandria for refills. The birs generally measured 75 feet square and 20 feet deep (112500 cubic feet)

³⁴ Campbell, p.10b.

³⁵ *Evening Post*, 1 April 1942, (page number unknown).

³⁶ Ibid.

³⁷ Dangerfield, p.4.

amounting to 4865.9 gallons (22,120.4 litres) of water storage. Each man was rationed 1.134 litres of water per day³⁸, therefore a cistern of these dimensions could technically sustain 19,506 men for one day. Moreover, the cisterns were almost undetectable to enemy aircraft, and also kept water relatively cool and fresh.

A four-wheel water tank carried about 19,250 litres and a bogie wagon could hold up to 40,000 litres, consequently a nominal train load was 227,300 litres of water³⁹. Unloading time for this volume of water was fifteen minutes. Having the ability to transport such amounts of water deep into the desert regions enabled the British to maintain a large force at minimum cost, tactically a valuable asset.

Realising the importance of water, enemy aircraft would try to destroy the trucks that came to draw water for their respective units. However, drivers would deliberately arrive at irregular hours and depart as quickly as possible.

Despite the necessity for water trains, absolute priority went to ambulance trains. All other rail traffic was sidelined for these trains to pass. They were usually painted white with prominent red crosses, and German airmen never fired upon them⁴⁰. The railway also served to take Bedouin nomads out of areas destined soon to become major battle zones. Troop trains, however, were prime targets which enemy airmen would strafe or bomb wherever possible. Unfortunately, enemy prisoners were often sent to the rear by such trains and sometimes came under fire, thus being killed by their own side⁴¹.

Transporting enemy prisoners was not a task relished by the railwaymen. Being non-divisional troops, they were not really equipped to deal with prisoners, even those relieved to be out of the war. This attitude was compounded after the El Alamein battle

³⁸ Ibid.

³⁹ J.A. Dangerfield, 'Railway Life - Still in Khaki', *The New Zealand Railway Observer*, Summer, 1979-80, p.135.

⁴⁰ Ibid.

⁴¹ Cody, p.256.

when large numbers of Italian prisoners were transported to captivity in ESR boxcars which had been used to transport flimsy petrol tins. In an effort to stem the splitting of these tins, cardboard dunnage was used, which duly became soaked in petrol. As these were the only wagons available in which to remove the Italians from the forward area, the prisoners were locked in with strict instructions not to smoke. Unfortunately occupants of one wagon disobeyed this order and it caught fire. None survived despite desperate attempts to save them by New Zealand railwaymen⁴².

Following the priority of ambulance and water trains came ammunition and troop trains, which also transported rations and replacement equipment⁴³. One very important commodity transported by rail was petrol. Trains could convey several thousand gallons in properly constructed wagons in comparative safety. In comparison, a three ton lorry could transport a maximum of 620 gallons⁴⁴ in tins which frequently split open, much to the consternation of the lorry crew. Considering that 'tanks alone in one action needed between 20,000 and 25,000 gallons of petrol a day'⁴⁵ at least 40 trucks would be required to supply the necessary petrol.

Possibly the largest impact of possessing a railway system in this campaign was having the ability to transport large amounts of logistics for relatively little cost in wear and tear and in fuel. A single train performed the work of at least 400 trucks⁴⁶, and at peak periods there were up to eight fully loaded trains per day running in each direction. During July 1941 alone, 16 Railway Operating Company operated 151 west-bound trains⁴⁷. These trains were always fully loaded and could weigh as much as 1300 tons, a considerable payload for the period. Even today, freight trains in

⁴² Letter sent from J.A. Dangerfield to the author, 6 July 1998.

⁴³ Dangerfield, 'Sounds Historical', p.4.

⁴⁴ J. Henderson, *RMT: Official History of the 4th and 6th Reserve Mechanical Transport Companies, 2 NZEF*, Wellington: War History Branch, 1954, p.15.

⁴⁵ *Ibid.*, p.39.

⁴⁶ Campbell, p.i.

⁴⁷ WAI DA129/1/14. 16 Railway Operating Company War Diary July 1941. National Archives, Wellington.

New Zealand and Britain rarely exceed 2000 tons⁴⁸. To move the same amount of materials by road would have required approximately 60,400 truck journeys, a staggering number when put in this context. The standard lorry used primarily in the desert had a limited freight capacity of three tons and usually had a two man crew⁴⁹.

In the build up following the formation of the Eighth Army on 10 September 1941, the 118,000 men required 2972 tons of supplies every day⁵⁰, ranging from water to ammunition. It would have taken 990 lorries to keep these troops supplied, or approximately three trains⁵¹. Each lorry had a driver and a relief assistant⁵², therefore in manpower alone, the transport of this volume of material would have required 1,980 Reserve Mechanical Transport Companies (RMT) personnel, whereas a train comprised of three men.

Armoured vehicles were another very important commodity that was transported by rail. British tanks had not been designed for prolonged exposure to desert conditions and consequently suffered numerous breakdowns. This situation was somewhat rectified with the introduction of the American-built Sherman tank, but initially all armour was British made. Railways played an important role in moving these vehicles from ports to forward combat zones, thus reducing the requirements of armour transport vehicles, themselves susceptible to harsh desert conditions. A single train from ports within the Suez region could haul up to 56 tanks to railheads, from where they were distributed to individual units at specially constructed loading/unloading ramps. These ramps were alongside parallel spur lines so that the tanks could be unloaded quickly, with their engines having been pre-warmed. This was an operation that was often carried out at night and very quickly, as

⁴⁸ From the authors personal experience while employed by New Zealand Railways as a locomotive engineer.

⁴⁹ Henderson, p.15.

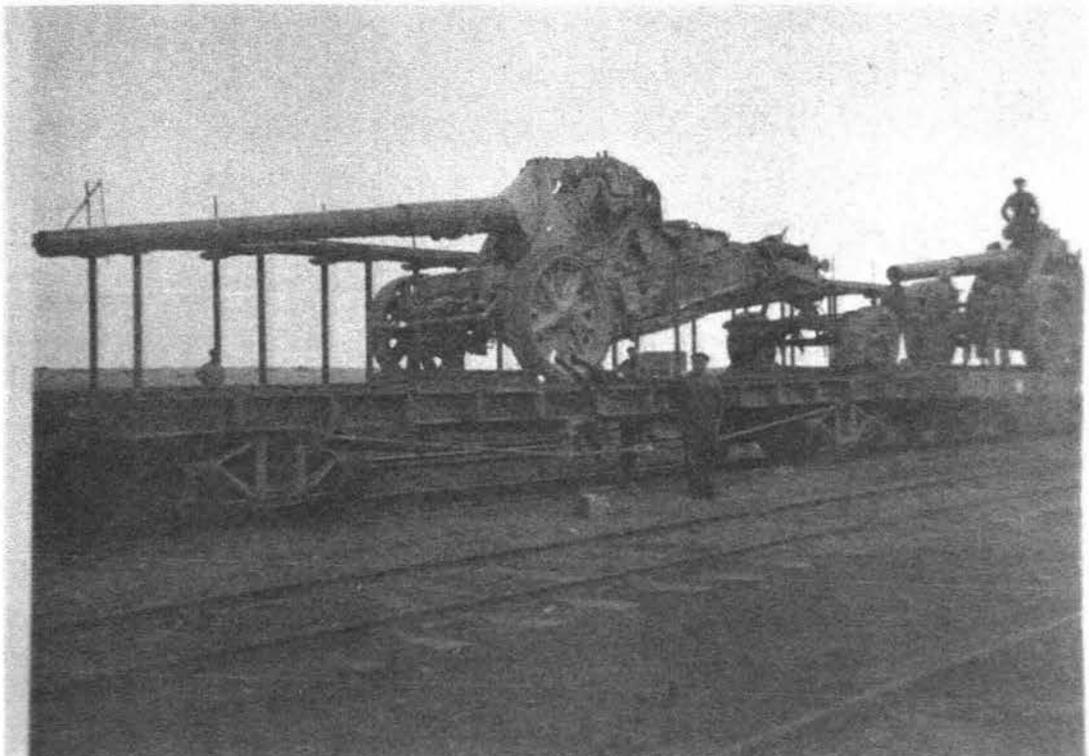
⁵⁰ Ibid.

⁵¹ This is working on the equation that each lorry could haul three tons and a train between 900 and 1300 tons.

⁵² Letter sent from J.A. Dangerfield to the author, 22 July 1998.



Armoured fighting vehicle train. Here camouflaged 'Scorpion' tanks are being transported to their recipients at the front. McLenaghin Collection.



Captured Italian field artillery gun. The railway was used extensively to transport damaged and captured war materials to the rear for repairs or scrapping. McLenaghin Collection.

dispersal was the best defence against air attacks. The railwaymen became very adept at this unloading task⁵³.

Up to two or three of these trains a week were run for several weeks after the railhead at Molhalfa was opened in September 1941⁵⁴. It took between 12 and 20 hours to rail the tanks from their assembly bases 200 miles away to off load them within a short travelling distance of their fighting zones, with obvious advantages to the fighting readiness of their motors and running gear⁵⁵.

The railway extension demonstrated its usefulness by enabling the army to transport tanks from Suez to the oasis of Siwa, on the western boundary of the Qattara depression. This oasis was the southern-most point where the enemy could outflank the Allied forces, and was therefore viewed by Headquarters as a strategic vantage point. Siwa is approximately 170 miles from Molhalfa, a major railhead which was to be the road link to the oasis. To reinforce their presence, the British stationed tanks and troops there, the tanks having been brought to Molhalfa by rail and then transported to Siwa on road vehicles and under their own power. Without the benefit of rail transport, it would have been necessary to use tank transporters for the entire journey, further stretching British resources. The railway helped free up the tank transporters for this task as most other armoured vehicles were unloaded close to their intended zones, and could reach their destinations under their own power.

Having the capacity to move heavy armour close to the front line was a very real tactical advantage. Rommel never had a reliable railway capable of transporting such weapons and his armour generally traversed the desert terrain, causing the panzers to be heavily modified for such conditions. Rommel was constantly plagued by inadequate supply lines. To reinforce the importance of reliable supply links, Rommel's plans to invade Egypt based upon

⁵³ This information was supplied to the author by W.H. Elliott, former sapper-fireman with 16 Railway Operating Company, 23 April 1998.

⁵⁴ Campbell, p.7.

⁵⁵ Ibid.



Egyptian State Railways locomotive, No. 590, deliberately destroyed at El Daba to prevent it being used by advancing enemy forces. McLenaghin Collection.

the premise that British forces could be constantly re-supplied from Port Said and other Suez ports, either by rail or road. After the capture of Tobruk and the retreat by British forces into Egypt, Rommel was well aware that his lines of communication were extremely long and subject to attack by the RAF, a similar predicament to that of Wavell earlier in the campaign. Conversely he realised that British forces were in a position to form strong defensive positions with regular supplies from their 'short supply route from Port Said to the front'⁵⁶.

Rommel did eventually inherit a railway system, the desert extension line between Belhamed and El Alamein. However, during the retreat of 1942, all serviceable railway vehicles were assembled and withdrawn with as much material as possible. At one stage, the only men between the Axis forces and British lines were the railwaymen as they hastily marshalled rolling stock and loaded valuable petrol and other equipment. Some of these trains comprised 70 wagons or more and weighed over 2200 tons⁵⁷. During the retreat, the usual speed limit for trains was raised from 25 miles-per-hour to 35 miles-per-hour, which created enormous problems in controlling a train made up of wagons not fitted with brakes. Unexploded bombs lying close to the track also added to the railwaymen's problems, with engine drivers leaving their cabs as they let the train move slowly ahead unmanned, and boarding again when past these dangers⁵⁸. By saving the rolling stock and locomotives, the railwaymen saved the Allies' primary means of mass transportation. Furthermore, had the bulk of this equipment been captured, Rommel would have no doubt made maximum use of it during his offensive. It would also have strained Britain's railway resources enormously to have replaced the rolling stock required for mounting a counter offensive.

Any rolling stock unable to be removed was destroyed, but as the Germans advanced this was not always possible and a few wagons

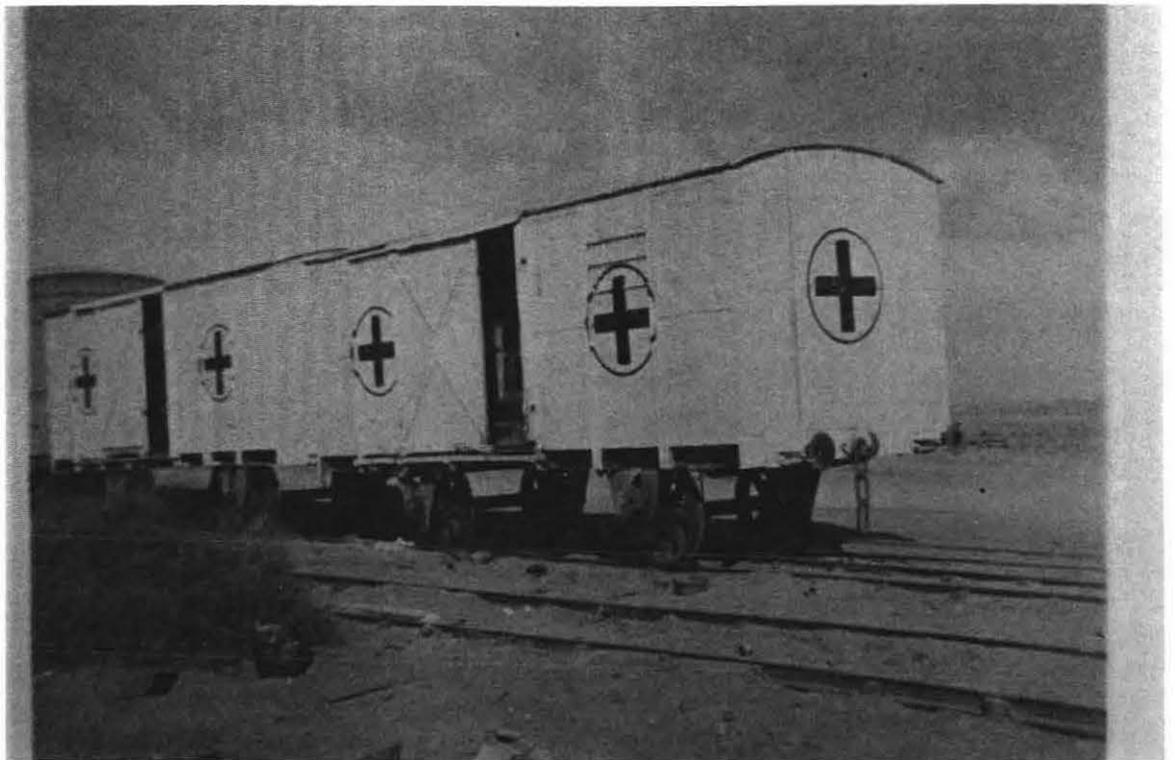
⁵⁶ B.H. Liddell-Hart, (ed.), *The Rommel Papers*, London: Collins, 1953, p.234.

⁵⁷ C.H. Gledhill, 'The War Years Abroad', *Evening Post*, 22 April 1989, p.20.

⁵⁸ *Ibid.*



British ambulance train, these bogie vehicles ensured wounded troops had a more comfortable journey to hospitals. McLenaghin Collection.



Axis ambulance train, due to bogie wagons being taken by retreating British forces, the Germans built ambulance vans using ESR four-wheeled freight wagons. McLenaghin Collection.

were left intact. Any remaining railway supplies that could be of use to the enemy were also destroyed. Approximately 150 rail wagons were left behind by the retreating New Zealanders⁵⁹, not enough for the enemy to run a viable rail service. However, the Axis forces made what use they could, and transformed boxcars into rudimentary ambulance trains⁶⁰, as the more comfortable converted passenger carriages had been removed. In a further attempt to render the railway useless, the sappers set about lifting or wrecking the track that they had so carefully built. However, this task was undertaken with the view that eventually the track would return to Allied forces, so only certain sections were dismantled. Such was the confidence in an eventual British counter-offensive, that when a block station porter suggested removing the moveable points blade⁶¹, his idea was dismissed as being too time consuming to repair upon their return. Instead, it was deemed less destructive to remove or destroy the 'frog' from the railway points, as this triangular section of rail is vital in switching trains onto another track⁶². It would be a relatively simple operation for railway gangers to restore this.

The notion of leaving the railway line in a semi-operable fashion was that Rommel's forces would not set about demolishing the line if they could make even limited use of it⁶³. By rendering the crossing loops inoperable, the New Zealand railwaymen denied the advancing Germans the ability to fully utilise the line, in effect making the whole line a single track. Without crossing loops, the enemy did not have the ability to run trains in opposite directions.

The New Zealanders still operated trains westward during the same period. Their task was to supply the retreating forces with vital fuel, water and ammunition. The Luftwaffe realised what was occurring and launched concentrated aerial attacks on trains from

⁵⁹ Campbell, p.15. This figure varies with that of another report which states 400 wagons were left behind. Possibly there were 400 left, but of that figure only 150 may have been serviceable.

⁶⁰ See photo.

⁶¹ Letter sent from J.A Dangerfield to the author, 6 July 1998.

⁶² Ibid.

⁶³ Ibid.

both directions⁶⁴. These attacks caused casualties to both the New Zealanders and to ESR staff working trains between Mersa Matruh and Alexandria, and disabled numerous locomotives.

Despite the deliberate destruction of the line and removal of rolling stock, Rommel still requested locomotives and rolling stock from Germany. Due to the demand placed on German domestic railways, he was sent inferior locomotives and almost obsolete rolling stock. The locomotives he received were diesel with low power ratings ranging from 500 to 250 horse power. Added to this, the German railwaymen operated military trains differently, with locomotives placed in the centre of the train and not at the head in an effort to reduce damage by mines placed on the rails. However, this reduced tractive effort, and as a result the few trains that the enemy could operate were only capable of hauling 200 tons⁶⁵, a far cry from the 1300 tons hauled by each Allied train⁶⁶.

During the period after the British withdrawal to El Alamein and the 1942-43 offensive initiated by Montgomery, the New Zealand railwaymen were garrisoned in Alexandria and at various ports in the Suez Canal vicinity. Once the threat to Alexandria dissipated, the railwaymen began to operate trains to a temporary railhead which had been established 35 miles west of this city at Burg El Arab⁶⁷. Approximately four trains were run to this point under cover of darkness, once again to replenish the army's arsenals.

In anticipation of the return to train running over the desert railway, selected men from both 16 and 17 Railway Operating Companies were sent to familiarise themselves with the new American diesel electric locomotives arriving at Suez. Training consisted of shunting the vast rail-yards at Suez as ships were arriving constantly to fill the military supply dumps. After preliminary training, the sappers ran trains to El Kantara, across the

⁶⁴ Letter sent from J.A. Dangerfield to the author, 9 July 1998.

⁶⁵ Liddell-Hart, p.345.

⁶⁶ Dangerfield, this information was related to the author in a letter concerning German operated trains over the captured desert railway extension, 14 July 1998. This information was substantiated by Bren Campbell, 17 June 1998.

⁶⁷ Campbell, p.15.

military swing bridge onto the opposite bank of the Canal to more supply dumps situated at El Shatt⁶⁸. This supply dump was located on the eastern bank of the Canal, probably because storage space was reaching its limits at Suez, and the El Shatt base was being used for equipment destined for Gaza. However, the emphasis returned to the western desert when Montgomery launched his offensive, and the railwaymen once more operated trains in that direction.

As the victorious Allies advanced after El Alamein, the railwaymen found themselves rebuilding damaged track and replacing the points' frogs that they had removed earlier. Again they ferried out the wounded and took munitions and essential materials to the front. Latterly the railways played their part in transporting bombs and aviation fuel up to forward airbases on the North African coast such as that at Gambut⁶⁹. The American Liberator bombers supplied by rail were now attacking targets in Italy.

As the front line receded ever westward, the previously occupied ports once again became available to Allied shipping and the railways became militarily redundant as the bulk of the war materials were now landed further along the coast by ships. Instead, trains began to bring out wrecked machinery and lightly damaged vehicles and artillery pieces, presumably for repairs or re-smelting. Both sides made use of captured armoured vehicles, artillery and even ammunition.

British forces were able to make limited use of the ports at Sollum, Bardia, Tobruk and by February, Benghazi. However, these ports were generally too shallow for large supply ships to dock at the wharves. Furthermore, the wharves lacked the cranes required to unload the cargo, necessitating the use of manual labour. Due to a shortage of seamen, the railway companies were asked to supply volunteers who had some familiarity of small boats to operate the barges and lighters that plied between the anchored supply ships and the wharves. A total of 36 railwaymen from the Railway

⁶⁸ Ibid., p.16.

⁶⁹ Ibid., p.17.

Operating group volunteered, and were dispatched to Alexandria to receive training in small craft handling⁷⁰.

Despite Alexandria being the Royal Navy's principal port in the Eastern Mediterranean, British ships could not tie up to wharves due to Egypt being a neutral country⁷¹. Therefore water and food supplies had to be ferried on lighters or on local water barges out to the ships, which remained in the outer harbour. However, the Royal Navy were short of men and appealed for any available manpower to assist. Their appeal was taken up by 17 Railway Operating Company personnel who were at that point stationed at Burg el Arab with little work of their own⁷².

Arriving in Alexandria, the men were surprised to learn that the vessels that they would be operating were diesel and not steam. The New Zealand railwaymen had no experience with diesel engines at that time, but were soon proficient in operating marine diesel engines after 'a pressure-cooker course of some three to six weeks'⁷³. From there, some of the railwaymen were dispatched to Bardia and Tobruk.

These men, in conjunction with men from the Australian Construction Group Australian Imperial Force (AIF), became known as 'Y' Detachment Number 1018 Docks Operating Company. Approximately 75 New Zealand railwaymen served in this company, despite its being commanded by two Australian lieutenants, Andy Kerr and George Millhouse⁷⁴. They were expected to handle all the necessary war material arriving by sea, although only having a company strength of between 100-125 men. During the British occupation of Tobruk, only one crane with a lifting capacity of around 1100lb was available to lift 250 and 500lb

⁷⁰ WAI 8/33 Detachments. Letter from GHQ Middle East to OIC Administration 2NZEF, 30 December 1940. National Archives, Wellington.

⁷¹ Stan Frost, 'A Maritime Gunga Din', *RSA Review*, 1991, (page number unknown). Mr Frost was a former sapper with 17 Railway Operating Company.

⁷² *Ibid.*

⁷³ *Ibid.*

⁷⁴ Lahman.

bombs from the lighters or barges⁷⁵. By 1 February, Tobruk was sending 900 tons of stores daily to forward supply dumps⁷⁶.

It is ironic that when Tobruk was eventually occupied by German troops in June 1942, Rommel faced similar problems to those of the Allies before him. Complaining of inefficient labourers, antiquated ideas, lack of initiative and a 'total lack of any sort of technical ingenuity', Axis Forces could only unload 600 tons of equipment per day⁷⁷. Rommel made 'repeated demands for increased port construction' and 'the building of unloading facilities in neighbouring inlets by Italian labour' as well as 'larger quantities of Italian dock equipment', all 'of course with little success'⁷⁸. Despite the vaunted reputation of German efficiency, New Zealand 'port handlers' outstripped their enemy counterparts by 300 tons of stores daily.

One major problem the Allies encountered was the refusal of Egyptian ship's masters to sail past the 'sea frontier' between Egypt and Libya. This meant that the reinforcement troops had to be transhipped from these civilian ships onto naval craft. Another call went out to the two Railway Operating Companies for volunteers who possessed any reasonable knowledge handling of small craft. Volunteers exceeded demand, but soon railwaymen (even those not 'really' qualified) were again temporary seamen. Not only troops but water and other essential supplies were lightered ashore or onto British vessels by railwaymen, while captured Italians were ferried out to waiting ships for internment back in Egypt. Initially this task was relatively safe as any Italian attempts to disrupt work were by high-flying bombers which invariably missed their intended targets. However, following German intervention in early 1941, air attacks became a major threat, with their aircraft coming in low on strafing and bombing runs. Eventually the railwaymen were needed elsewhere, and their tenure as 'seamen' ended in May

⁷⁵ Ibid.

⁷⁶ D.W. Braddock, *The Campaigns in Egypt and Libya, 1940-1942*, Gale and Polden Ltd, Aldershot. 1964, p.21.

⁷⁷ Liddell-Hart, p.268.

⁷⁸ Ibid.



Railway fitters working during the night to keep the trains running. Conditions were primitive with the tradesmen having to adopt a 'make do' approach.

1941. Two 16 Railway Operating Company sappers were killed in the course of this operation⁷⁹.

The formation of such ad hoc groups indicates how adaptable the railwaymen were in the North African campaign. Due to army groups being so far from their usual bases where trained personnel and their workshop facilities were located, work had to be carried out in the most efficient fashion possible with whatever men or resources were currently available. Many members of the railway companies had had experience working with machines, particularly steam engines, and were valuable for operating wharf-side machinery. Without doubt, these railwaymen made a valuable if short-lived contribution to the war effort as waterside workers. In the process this hastily assembled dock company helped to foster the legendary notion of 'Kiwi ingenuity'.

More generally, it appears that the New Zealand railwaymen were more versatile than their British counterparts. On occasions when machinery failed or required minor repairs, New Zealanders would at least attempt to rectify the situation whereas their British colleagues tended to rely heavily upon workshops to carry out similar repairs⁸⁰. The only major railway workshops available were located at Gabbari, Alexandria. Consequently New Zealand railway artificers worked in very primitive conditions at the desert railway depots in order to carry out routine repairs and maintenance. These men often toiled long, monotonous hours to keep locomotives operable with limited tools and spares. In an effort to reduce wear, Babbit or anti-friction metal was used on all driving and truck bearing surfaces and in all main side-rod bushes, crosshead slippers and the valve rod guides⁸¹.

Another region where the railwaymen contributed to the war effort was at the Port of Suez. The Allied command suspected many

⁷⁹ Cody, p.55.

⁸⁰ These are similar views expressed by Bren Campbell, Bill Elliott and Jim Dangerfield, all former sappers from 16 and 17 Railway Operating Companies respectively.

⁸¹ 'Pelorous Jack', 'Memories of wartime railroading in the North African Desert', *Rails*, June 1974, p.19.

Egyptian railwaymen harboured anti-British sentiments and had an unhurried approach to work. So these railwaymen were joined by New Zealanders whose specific tasks involved supervision of staff and train-marshalling duties. The primary provisions of war material, petroleum products, railway rails, barbed wire, road vehicles, and ammunition were coming via Port Suez and railway staff worked 24 hours, seven days a week. The most important facility to be regularly shunted was the Shell oil refinery, which produced about 100 tank wagons and 70 wagons of tinned petrol and oil daily⁸². The Luftwaffe took an obvious interest in this area and bombing was a constant danger.

In August 1941, the ESR staff threatened to go on strike, thus forestalling plans to send the New Zealand staff out into the desert, where their services were urgently required. This also had the effect of bringing the 17 Railway Operating Company back from Palestine in case the strikes went ahead⁸³. German propaganda and intensified air raids increased the unrest amongst Egyptian railway employees. However, industrial stability was restored by November 1941, and 17 Railway Operating Company sappers were then sent out to the desert to assist the men of 16 Railway Operating Company. It was the policy of the railwaymen to marshal wagons together and disperse them to their various destinations around the Suez region or out into the desert rapidly, rather than leaving them concentrated around the port where they were vulnerable to bombing. Had the ESR employees gone on strike, the ramifications to the British supply build-up could have been very serious.

With the requirements of the railways diminishing almost daily, the rapid transition to a less stressful working environment came as a welcome relief to the men, who had been regularly working long, arduous shifts for the past two years. Many of them were unsure of where they would be sent to next. With the imminent invasion of Italy becoming more likely by the day, some thought their next posting would be to operate liberated Italian railways in

⁸² Diary of A.H. Martin, former Warrant Officer Class One, Headquarters Company, Railway Operating Group. Extract dated 16 October 1941. This diary is now in the possession of J.A. Dangerfield, Dunedin.

⁸³ *Ibid.*, August 1941.

conjunction with Italian railwaymen as they had done with ESR staff on their arrival in Egypt.

Eventually the railwaymen realised that their operational days were over, and that departure for New Zealand inevitable. However, their replacements were South African railway units, and these units lacked the hard earned experience of the New Zealanders. Therefore, the final task of the New Zealand railwaymen was to 'teach' their South African counterparts the rudimentary skills required in operating and maintaining a desert railway system. Not having had any exposure to American diesel electric locomotives, the task of several men from the railway operating companies was to demonstrate driving and maintenance techniques to the South Africans⁸⁴. The South Africans were by their own admission 'soon understudying 17 Railway Operating Company' at Geneifa on the Great Bitter Lake following their disembarkation at Port Tewfick⁸⁵. By this time, the New Zealanders had the distinction of being the premium railwaymen in the forward battle zones of North Africa, and the South Africans could have had no finer examples to follow.

The New Zealand Operating Companies contributed greatly to the Allied war effort during the long distance advances and retreats that characterised the North African Campaign. Having a railway proved extremely advantageous in rapid transportation of weapons, ammunition, troop provisions, water supply and ambulatory services. Had the British not been in possession of this important strategic asset, the war in North Africa may have become less fluid. Being able to deploy armoured fighting vehicles and war provisions as they arrived at the Suez ports meant that hard-pressed fighting units could at least rely on receiving equipment rapidly. In contrast, Axis troops were often unable to consolidate their successes simply because they were not being re-supplied fast enough. Without doubt, the New Zealand railwaymen provided an indispensable service in achieving victory in North Africa.

⁸⁴ Campbell, p.18.

⁸⁵ Neil Orpen with H.J. Martin, *Salute the Sappers*, Johannesburg: Sappers Association, 1982, p.209.

Chapter Four

Problems encountered by the Railway Companies

This chapter will examine the problems encountered by the railway companies building and operating railways within the North African and Middle Eastern regions. These problems included domestic difficulties involving pay and housing disputes between railway staff and their unions, and Railways management. The troops of the non-divisional units, including the Railway Group, did not come under the auspices of the General Officer Commanding (GOC), General Freyberg, instead, being under the jurisdiction of General Headquarters (GHQ) Middle East. This brought about minor problems in itself, issues such as mail and promotion being affected. Furthermore, Freyberg, despite his co-operation with GHQ, still felt it inappropriate that 'his' New Zealand non-divisional units were dispatched without his prior knowledge or permission.

This chapter also examines the more practical problems of railway operation in a desert region. Natural hazards such as the heat, sandstorms, flooding, unstable terrain and even darkness which plagued all military personnel in the Middle East were often exacerbated for the railwaymen. Added to these natural dangers were the effects of enemy attacks through bombing, strafing and sabotage. Moreover, the railwaymen found themselves working with unfamiliar railway equipment in lands that were very foreign to them. The construction sappers extending the desert railway had particular problems concerning the arrival of correct construction materials, and the monotony of hard labour and very basic rations.

Following the call to volunteer for the specialist railway formations, the question of pay scales was brought up by those enlisting. Although eager to offer their services to the war effort, the men and the unions who represented them were anxious to have their expertise recognised and retain something akin to their civilian pay rates. The authorities agreed to this, but did not comply with the agreement. The other questions most frequently raised revolved

around the continued tenancy of Departmental dwellings, as many of the railwaymen were married men with children¹.

Considering that railways are vital during wartime, engine drivers would have had a legitimate case for being exempted from military service² and thereby retaining civilian pay rates. Despite the inherent dangers of foreign military service, the pay was not commensurate with the risks involved.

However, once in training at Hopu Hopu Camp near Ngaruawahia, the government reneged on the deal, claiming that the additional payment was not economically viable. It appears that the Railways Department had made promises that it could not honour. Naturally enough, there was an outburst of complaints when it was realised that locomotive running staff were not receiving the additional payment and the unions became involved. The General Manager of the Railways Department, E. Casey, wrote to his minister on behalf of the affected railwaymen, pointing out that employees had been recruited under false pretences:

The pay in camp is 7/- (shillings) per day, with an additional sixpence after embarkation and, although the Army Regulations provided that engine-drivers, with members of other specified trades, would receive an additional 1/- per day while carrying out the duties for which they had enlisted, it was assumed that as these men were enlisted for a specific purpose in a specialist Company they would be granted the allowance during their term of service with the Expeditionary Force, and the officials of the New Zealand Locomotive Engine-drivers, Firemen and Cleaners' Association were also under this impression. In the circumstances, I would recommend that these men, who are all in the vicinity of or over forty years of age and who would not have enlisted at that particular time in the ordinary course, be granted the extra 1/- per day which

¹ R 501/71, Letter to the Minister of Railways from Head Office of the Engineers, Firemen and Cleaners Association (EFCA), 5 March 1941, National Archives, Wellington.

² See Chapter One.

they had certainly been led to expect they would receive on embarkation³.

Evidently the Minister of Railways approached the government departments relevant to the issue. In September 1941, the Army Secretary replied to the Railways General Manager:

The position is difficult in that in the NZEF provision is made only in our Pay Regulations for a small number of tradesmen who are actually employed at their trades to receive tradesmen's pay. To put the matter on a proper footing, a sum exceeding £100,000 per annum is involved, and so far the Government is not prepared to approve such additional expenditure⁴.

In following up the issue, EFCA examined the recruitment offers made by Sullivan following the request to form the Railway Operating Companies. It was confirmed that union officials had approached Sullivan to inquire about housing and pay issues, which they were assured would be protected. Having had their queries answered by Sullivan, the union had sent the following information to the various locomotive running depots throughout New Zealand:

Urgent appeal for Enginedrivers and Firemen. Interviewed Minister today re homes. No termination of tenancy without agreement between Management and Association. Military rates of pay equivalent to two pounds nineteen shillings and six pence weekly for single enginedrivers. Married enginedrivers one pound one shilling for wife plus ten shillings and six pence each child. Firemen one shilling per day less than single enginedriver plus above family allowance. Definitely loco running duties overseas with Special Unit. Government specially emphasises urgency for immediate voluntary

³ R 501/71, Letter to the Minister of Railways from E. Casey, General Manager of New Zealand Government Railways, 1 August 1940, National Archives, Wellington.

⁴ R 501/71, Letter to the General Manager of New Zealand Railways from the Army Secretary, 22 September 1941, National Archives, Wellington.

response from Loco men. Acting enginedrivers treated as enginedrivers. Post conspicuously. Signed Stephenson⁵.

It is obvious that certain allowances and special conditions regarding housing and pay were being used to draw railwaymen into these specialist units. Now the Railways Department was reneging on a brokered deal and this was a contentious issue for the railwaymen on the eve of their departure overseas.

Despite the protestations from the railwaymen, the government was adamant that no extra pay would be forthcoming. In October 1941, Semple, now the Minister of Railways, defended the Government's actions to the EFCA:

When the Companies took up overseas duty it was found that a number of the men concerned, on account of the positions allotted them in the establishment, did not qualify for the additional remuneration and payment in these cases accordingly ceased. As to this position it is explained by the Army Authorities that such payment is restricted under war establishment to certain numbers in every Company and these numbers in general may not be exceeded..... In the circumstances and much as I would like to see all the enginedrivers serving in the Railway Operating Companies placed on an equal footing I regret that it is not possible in the meantime to do anything further in the direction desired⁶.

The issue does not seem to have been pursued further by the railwaymen's union.

Railway housing and tenancy rights were another issue to resolve. Despite the assurances given by Sullivan regarding occupancy of railway houses by spouses of men on overseas duty, it became apparent by September 1940 that this tenancy agreement was also under threat. While men were employed with the Railways

⁵ R 501/71, Letter to the Minister of Railways, 5 March 1941 from EFCA, National Archives, Wellington.

⁶ R 501/71, Letter to General Secretary, EFCA, from the Minister of Railways, 22 October 1941, National Archives, Wellington.

Department, they were entitled to rent Railway houses at low rents. However, they were no longer technically employed by the Railways Department once they joined the army, and they therefore relinquished their entitlement to railway accommodation, despite what had been promised.

By September 1940, it was clear that housing was becoming a major problem:

Owing to the acute shortage of housing accommodation and the difficulty being experienced in replacing married employees with single employees it will not be practicable in future to allow the dependants of employees who join the military forces to remain in occupation of departmental dwellings, and, in this connection, married employees, who hold the tenancies of departmental dwellings and who desire to join the military forces, will require to make definite arrangements before being released for military duty for their families to vacate such dwellings⁷.

The railways had a system to operate, and replacing those men who joined the forces was of paramount importance. Often only one house was provided for the use of railway personnel in remote areas⁸ and alternative accommodation was simply not available, while single man huts were deemed unsuitable as they lacked any form of ablution or cooking facilities. Therefore, while the actions of the Railways Department appeared harsh, they were driven by the realities of a wartime situation. It is puzzling that such complications were not anticipated when the initial call went out for railwaymen to serve overseas.

The commanding officer of New Zealand's Expeditionary Force (2NZEF), Major General Bernard Freyberg, was granted a 'charter', by the New Zealand Government which was extremely concerned that New Zealand troops would be expected to fight in unrealistic

⁷ R 501/1, Memorandum Number 87, Enlistment of Railway Employees in Military Forces, National Archives, Wellington.

⁸ Personal letter to the author, from J.A. Dangerfield, former NCO, 17 Railway Operating Company, 9 August 1998.

battles and sustain massive casualties as they had in the First World War. In an effort to maintain a level of autonomy, Freyberg, despite being a British general, was given the role of overall commander of the 2NZEF, provided he consulted with the New Zealand Government about employment of his troops. Freyberg was satisfied with this arrangement, as he could deploy his men somewhat more independently than New Zealand officers had been able to previously.

However, the railway companies were non-divisional units and did not come under the auspices of the New Zealand military commander. Despite being raised within New Zealand and consisting exclusively of New Zealand personnel, these companies were to be utilised at the discretion of the Director of Transport, General Headquarters (GHQ) Middle East⁹. Indeed, the terms of their formation required them to come under the operational control of British authorities¹⁰. From Cairo, the railwaymen received orders and requests to carry out tasks appropriate to their specialised skills. As a result, the New Zealanders often found themselves being dispatched throughout the Middle East region at very short notice, sometimes not even entirely sure of their final destinations.

A real concern of Freyberg and his senior officers was maintaining the morale of the non-divisional troops, particularly those not directly associated with the main New Zealand Division. Freyberg worried that their contributions towards the war effort was being overshadowed by the publicity given to the fighting units. Similarly, he tried to ensure that their collective welfare was not neglected and even ordered a second mobile dental unit for the express purpose of serving the non-divisional units. When any extra rations or luxuries were available, Headquarters 2NZEF tried to ensure that all New Zealand troops shared in the spoils, despite this being a difficult task with units being widely scattered¹¹. Freyberg was all

⁹ Telegram 266, General Freyberg to the Prime Minister, 3 December 1940, *Documents, Relating to New Zealand's Participation in the Second World War 1939-45*, Volume I, Wellington: War History Branch, 1949, p.202.

¹⁰ W.G., Stevens, *Problems of 2 NZEF*, Wellington: War History Branch, 1958, p.175.

¹¹ *Ibid.*, p.133.

too aware of the importance of making himself visible and available to these men, and often lamented that he did not in fact get to visit them enough¹². Despite the non-divisional troops being under GHQ jurisdiction, matters arising such as promotion and alterations to established units were still the domain of the GOC 2NZEF, and subject to approval by Freyberg. Headquarters 2NZEF asserted its authority when British Headquarters began to have too great an influence in these matters¹³.

This created a problem in that a sovereign nation's military leaders were not being consulted by an ally, and their own government failed to support their protestations¹⁴. After lengthy and occasionally heated arguments with his British counterparts, Freyberg agreed that any troop detachments could be made of the non-divisional men, provided 2NZEF Headquarters were informed.

The men in question were usually facing more practical difficulties of their own. Having landed in North Africa, the two railway construction units initially had little direction as to their future. At this stage, Italian forces had not begun their tentative attacks on the Egyptian border, so most troops were engaged in preparing defensive positions or training. The railwaymen occupied their time by furthering their military skills and 'square bashing'.

After the successes of O'Connor and Wavell, which saw the British capture the ports of Sollum, Tobruk and Benghazi, it appeared that a railway 'Line of Communication' (LoC) would prove unnecessary. However, the nature of the campaign tended to be one of offensive and counter-offensive which saw these ports frequently changing hands. In light of the vulnerability of the ports, a railway into the Western Desert was again deemed viable, particularly once Tobruk was surrounded and besieged. Following General Claude Auchinleck's promotion to General Officer Commanding (GOC), he asked whether the railway could be extended quickly enough and far enough to improve the transport problem. 'Motor transport was

¹² Ibid.

¹³ Ibid., p.134.

¹⁴ Ibid., p.176.

none to plentiful in the Middle East, and a railway 75 miles further on would enormously ease the strain'¹⁵.

The commanding officer of the railway companies, Colonel J.E. Anderson, was tasked with the job by GHQ in Cairo, and planned a rapid advance into the desert, provided he was adequately supplied with materials. Unfortunately initial promises of plant machinery were dashed by a memo which 'hoped the Group would be able to handle the job with what machinery it owned plus some native labour'¹⁶. Eventually about 'one tenth of what was needed, did in fact arrive, plus 1200 native labourers'¹⁷. Due to the initial shortage of plant machinery, much of the rock cutting and track bed development was carried out by manual labour¹⁸. However, factions within the Egyptian labourers refused to work with each other due to tribal hostility, culminating in a pitched battle on Christmas Eve 1940¹⁹. Progress was hampered as a result.

The problem of labour was solved when the 1209 and 1212 Indian Pioneer Corps and a company of East African Pioneers were attached to the New Zealand railway companies. These men worked extremely well with the New Zealand sappers who supervised their work.

Machinery shortages were not solely limited to the construction companies in the Western Desert. The 21 engineers from Nine Railway survey company who were detailed to extend a railway line in the Sudan found themselves without even basic materials and construction tools, particularly those driven by any kind of power source. They had to resort to hard manual labour. At one point, they drilled 1200 holes through a steel girder bridge with hand ratchet drills, and had to forge and thread over 1000 hook bolts for holding the sleepers to the girders²⁰.

¹⁵ R.T., Smith, 'Military Railway Construction in Middle East', *Proceedings of The New Zealand Institution of Engineers*, Vol.33 (1947), p.488.

¹⁶ J.F., Cody, *New Zealand Engineers, Middle East*, Wellington: War History Branch, 1961, p.38.

¹⁷ Ibid.

¹⁸ Smith, p.469.

¹⁹ Cody, p.38.

²⁰ Cody, p.71.

There were many problems associated with constructing this line in the Sudan. Major Smith records: "Getting men promptly on the job and home again; supplying them up to time with food and water; the organisation of lorries and tractors distributing material in thick dust-storms to avoid collisions; the moving of camps so as to avoid loss of laying time and disorganisation of supply of rails and sleepers. At one stage several miles of track had to be laid without bolts for the joints because none had arrived"²¹. This was usually due to ships not being loaded correctly, hence materials arriving in an 'imbalanced state'²². That is to say, rails and sleepers were stowed in one hold and bolts and bed-plates in another with each being unloaded separately and thus being dispatched at different times on construction and supply trains. Smith planned for each supply train to arrive with balanced material for the complete construction of two and half miles of track²³.

Added to these problems, the track material was often of mixed origins. The construction sappers were faced with the task of joining rails coming from Britain to those coming from India, and Indian rails with Persian rails. This could be a difficult operation as these rails were usually varying in weight, size and gauge. To add to their frustration, rails of all sizes and grades had to be bolted to bed-plates designed for a particular rail size²⁴ - and even the bolts were often second-hand. These used bolts were usually quite rusty and dirty, and did not always fit the holes bored for them. Due to the irregularity of the ironmongery and rails, sleepers which had already been spaced out in anticipation of rails being set onto them had to be re-spaced to fit in with the uneven lengths of rail²⁵. Even the materials used were often very unfamiliar to the majority of construction men, with steel sleepers being the most obvious. These sleepers were designed to bed into the sandy surface as they had

²¹ Ibid.

²² Smith, p.471.

²³ Ibid.

²⁴ J.A., Dangerfield, Transcript of 'Sounds Historical', radio interview by Jim Sullivan, 30 April 1997, p.5. Mr Dangerfield was a NCO with 17 Railway Operating Company,

²⁵ Cody, p.263.

curved ends and a hollow underside, which enabled them to sink into the sand and thus not require ballasting²⁶.

Rain storms which occurred in the desert posed construction problems for the surveyors and sappers alike. These deluges could quickly overflow dry runnels and any low-lying depressions in the ground and spill over. This sometimes resulted in the track being undermined in wash-outs, causing delays and even train derailments.

Land mines were another concern for the sappers building the extension line. Minefields had been laid by both sides, and the engineers did not always know their precise whereabouts, and depended on mine sweepers to clear passages for them. Once a minefield had been cleared for track construction, a fence denoted the safe passage area and work could resume²⁷.

The construction gangs' gruelling day comprised of two shifts, the first beginning at 4.30 in the morning, and the second shift ending at 6.30 in the evening²⁸, often working six to seven days a week. They endured these long hours with high morale even though they were living on the plainest of rations and one bottle of warm, brackish water per man per day²⁹, and were suffering the misery that accompanied sandstorms. While not being in the direct front line, these men were still targets and endured sneak enemy air attacks, forcing them to try and find shelter in a largely featureless desert. Warning the construction gangs of imminent air attacks posed a problem in itself. Due to the men being widely spaced along the line, often using noisy construction machines, an effective audible warning device was required. Standard air raid sirens had a tendency to become choked by flying sand, and did not work properly³⁰. Experiments using Verey light flares proved ineffective, not being visible at the range of 200 metres, even if the men were

²⁶ Information supplied to the author by Mr J. Parata, 16 July 1998.

²⁷ Cody, p.260.

²⁸ Ibid., p.172.

²⁹ Ibid., p.258.

³⁰ Dangerfield, letter to the author, 1 August 1998.

constantly watching for them³¹. The most effective device proved to be a locomotive whistle to alert the gangers of impending attack³².

Despite the problems that beset the construction gangs, work progressed beyond expectations, with objectives and track laying records frequently being achieved.

The German and Italian military commanders realised the vital role that railways played in the Desert Campaign³³. Therefore they bombed the railway yards at El Daba, Mersa Matruh, Molhalfa and all the subsequent railheads as the Western Desert Railway progressed. Unfortunately for the aviators, bombing a railway line measuring 4'8" in width from a fast-moving aircraft from any altitude was no easy feat, and consequently it required a 'carpet bombing' technique to do any real damage. Furthermore, even rail yards constructed on the desert railway extension were designed to reduce possible damage from aerial attack. Large balloon loops of up to nine miles in length with spurs leading off them proved difficult targets.

Therefore the enemy pilots appear to have adopted a method of psychological warfare. Realising their actual bombing was not having a noticeable effect, they would randomly release their bombs over or near rail yards, causing men on the ground to seek cover no matter from whatever quarter the aircraft approached³⁴. This had the effect of halting railway yard work and creating train delays, thus upsetting schedules for numerous military units waiting for supplies to arrive. While they were not extremely dangerous to the men on the ground, these bombing sorties were very disconcerting, especially when engine drivers and firemen were inside locomotives' fireboxes 'cleaning the fire' when aircraft appeared. It took several minutes to extricate a person from these

³¹ WAI DA 128/1/22, Report by Lt.-Col. A.H. Sage to GHQ, MEF, 28 May 1942.

³² A., Moorehead, *The Desert War, The North African Campaign 1940-1943*, London: Hamish Hamilton, 1965, p.127. Corroborated by J.A. Dangerfield in a letter to the author, 1 August 1998.

³³ Field-Marshal Albrecht Kesselring, Rommel's superior officer in the Mediterranean Theatre was a Luftwaffe officer and no doubt realised the importance of disrupting the Allies' supply routes, particularly the railway.

³⁴ Information supplied to the author by Mr W.H. Elliott, 23 April 1998.

close confines³⁵. Due to the volume of rail traffic being moved, locomotive fireboxes were very rarely extinguished and as a result required frequent disposing of ash and other impurities.

Many of the bombs dropped failed to explode. For example, in raids carried out on Similla on 2 May 1942, 18 bombs were dropped with none actually detonating³⁶. In another mission by enemy aircraft on 18 May 1942, five aircraft released 18 bombs, of which only one exploded, and merely damaged an ESR water tank³⁷.

While these failures were naturally quite acceptable to the recipients on the ground, it then presented them with the danger of unexploded bombs in the vicinity of railway movements, again causing delays while bomb disposal experts de-activated the devices and then removed them. Sometimes these unexploded bombs lodged themselves beneath the rails, and exploded while being extracted³⁸.

The railwaymen built locomotive shelters away from fuelling and servicing areas, constructed from sandbags stacked up on either side of the holding track. These were very effective against both strafing and bombing, but as the locomotives were rarely stationary for any length of time, they were usually caught out in the open during the attacks, most often working in the yards³⁹.

Aerial attack while travelling was particularly unsettling. Being attacked whilst stationary or while shunting in the rail-yards enabled the men to at least seek protection in the slit trenches which had been dug for such eventualities. During the early stages of the campaign, Italian airmen dropped bombs from a high altitude on Mersa Matruh, which tended to be inaccurate and more of a

³⁵ Ibid., 'Cleaning the fire' means ridding the firebox of ash and soot build-up.

³⁶ WAI DA 128/1/22, War Diary, May 1942, Headquarters Company, New Zealand Railway Operating Group, National Archives, Wellington.

³⁷ Ibid.

³⁸ Diary of A.H., Martin, held by J.A. Dangerfield, Dunedin. Extract dated 4 September 1942. Martin was a Warrant Officer Class One, Headquarters Company, Railway Operating Group.

³⁹ Information supplied to the author by Mr B.L. Campbell 17 June 1998.

nuisance than being deadly. These attacks contributed more to broken sleep than material damage⁴⁰. However, with German intervention, attacks on trains out in the open became increasingly effective,⁴¹ creating a tense atmosphere in which to haul a train. The Luftwaffe pilots would mount strafing attacks at very low levels, usually in fast fighter aircraft, coming towards the train at right angles with the sun behind them. Combined with the low ground haze and dust, this made it very difficult for them to be seen. The only warning the railwaymen received was the sound of machine gun and cannon fire as it hit their locomotives and tenders. As trains did not travel at fast speeds, the crew would usually apply the locomotive's brake and then jump clear during the attack and try to find whatever sparse cover the desert offered, even old wheel ruts⁴².

The most rewarding targets on a train were the locomotives. The Luftwaffe aimed to disable as many locomotives as possible, particularly when their reconnaissance informed them of British supply build-ups. Prior to the 'Crusader Campaign', the enemy launched repeated attacks against trains in an effort to halt supplies reaching the troops, with 17 of the 23 available Class 8F locomotives being rendered unserviceable by aircraft cannon fire⁴³.

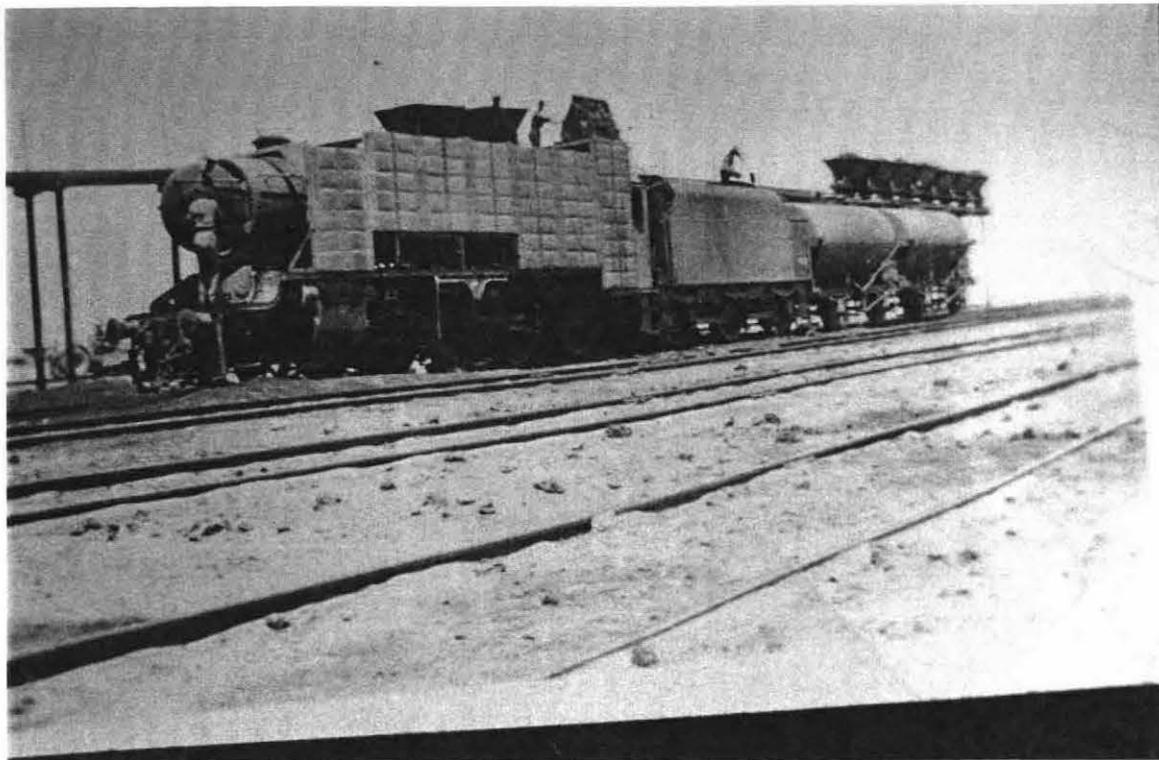
Machine gun or cannon rounds puncturing the boiler caused steam pressure to escape, thus stopping the train. Fortunately, cannon rounds failed to explode on impact as the boiler steel was not hard enough to cause the rounds to detonate and they passed right through. Had they worked as intended, the damage may have been serious enough to completely destroy the locomotives. Punctured boilers had to be reamed out and plugs inserted into the holes. New Zealand artificers displayed their expertise in repairing such damage with whatever equipment was available. One method employed to protect the locomotive was to shroud the boiler with

41 B.L., Campbell, 'One Sapper's War', personal memoirs, unpublished, 1997, p.6. Mr Campbell was a sapper-locomotive fireman with 16 Railway Operating Company.

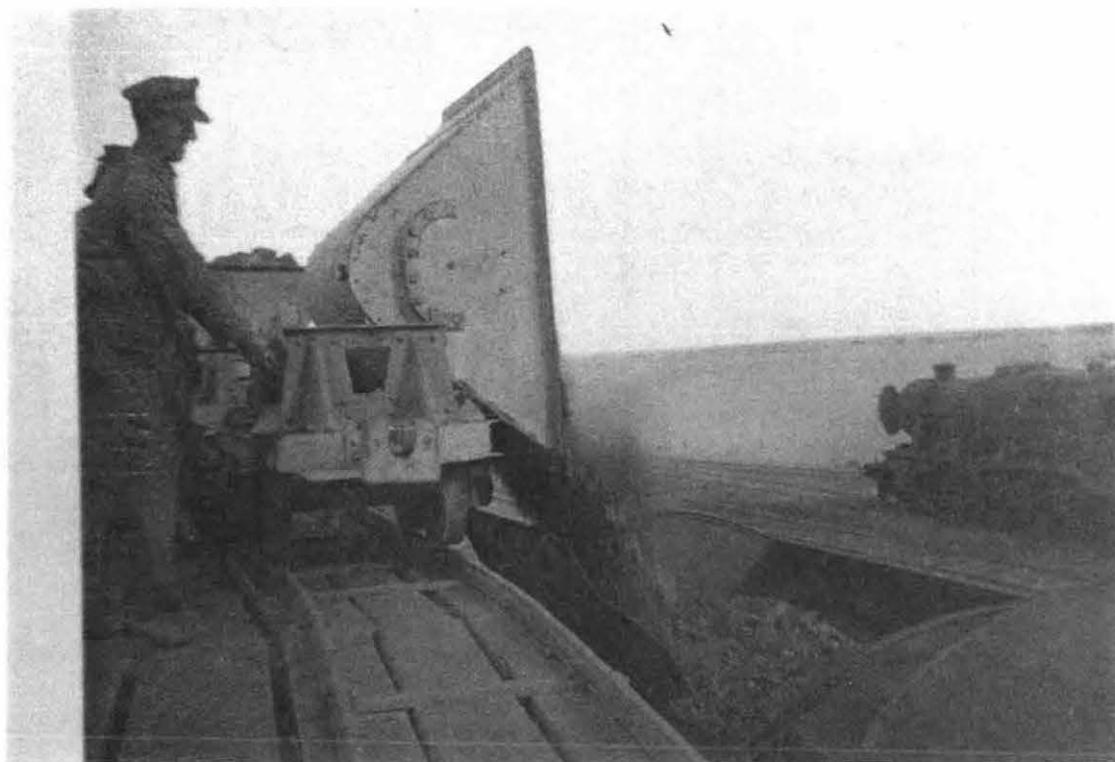
41 Ibid.

42 Ibid., p.14.

43 'Pelorus Jack', 'Memories of Wartime Railroading in the North African Desert', *Rails*, June 1974, p.23.



Armoured locomotive. This combination of asphalt and steel greatly affected the stability of the locomotives with the extra weight increasing wear on bearings and other moving parts. Coupled to the locomotive tender are the 4000 gallon water barrels necessary for steam locomotives to operate in desert conditions. Here coal is being loaded manually into the tender, a tedious task. McLenaghin Collection.



armour plating. This protection consisted of half-inch steel armour plating and splinter proof asphalt blocks (as used on shipping), or concrete blocks, increasing the weight of the locomotive by four and a half tons⁴⁴. Unfortunately the addition of this armour plating had the effect of making locomotives unstable at speeds above 30 miles per hour.⁴⁵ Although the recommended speed for trains using the desert extension was far below this figure⁴⁶, engine drivers would sometimes go faster, particularly when there was intensified aerial attacks. Moreover, the extra weight caused the delicate white-metal bearings, which had been specifically designed for the locomotive's weight, to overheat, leading to excessive wear or complete collapse⁴⁷. Furthermore, the locomotive crews had their forward vision seriously reduced by the added armour⁴⁸, a major problem given the hazards they frequently encountered.

As the lack of water was a problem in operating steam-powered locomotives in desert regions, despite the water pipeline extending from Alexandria to Misheifa, diesel locomotives were sought. Orders were placed with Whitcombe Locomotive Company of Rochelle, Illinois under the Lend-Lease scheme in May 1941. They were duly designed to operate in high temperature regions and were fitted with intricate air filters to guard against damage caused by sand. These locomotives had case-hardened steel surrounding the cab for crew protection. The diesel electric locomotives were introduced at the end of 1942, with engine drivers being withdrawn temporarily from service in order to become familiar with the new machines⁴⁹. Such was the urgency to get the diesel electrics into service, they were being operated within four hours of being landed at Suez⁵⁰.

⁴⁴ J.A., Dangerfield, 'Railway Life, Still in Khaki', *New Zealand Railway Observer*, Summer, 1979-80, p.136.

⁴⁵ J.W.P., Rowledge, *Heavy Goods Engines of the War*, Poole, Springmead Railway Books, England, 1977. This information was collated by J.A. Dangerfield from this book and forwarded to the author, page number unknown.

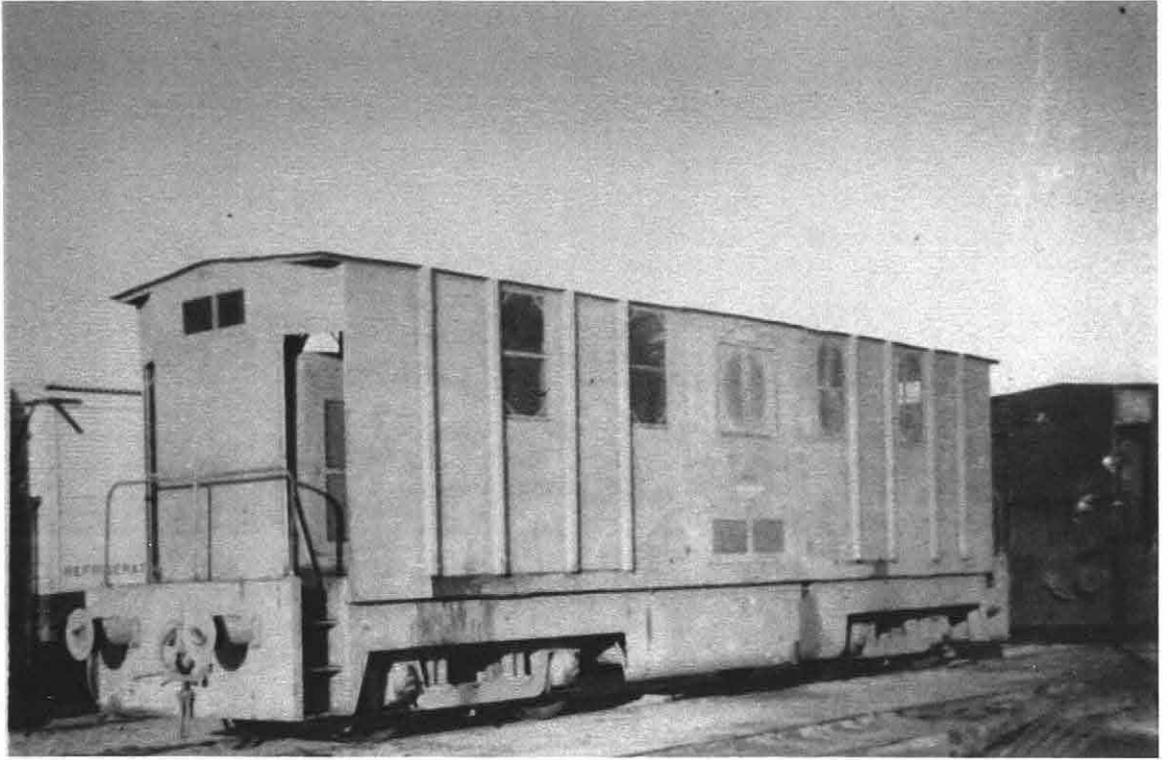
⁴⁶ Trains were restricted, theoretically, to 12 mph, but engine drivers often breached this regulation depending on circumstances.

⁴⁷ Dangerfield, 'Railway Life', p.136.

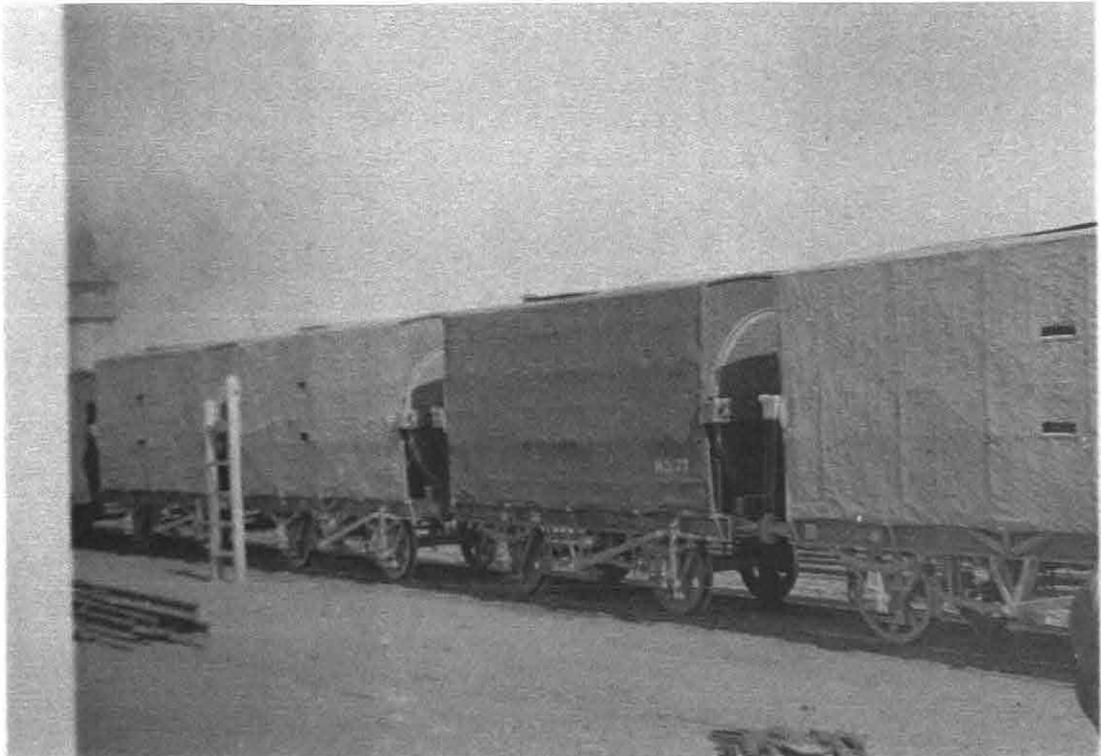
⁴⁸ *Ibid.*

⁴⁹ Martin, 18 November 1942.

⁵⁰ R., Tourret, *Allied Military Locomotives of The Second World War*, Tourret Publishing Ltd. Abingdon, England: 1995, p.97.



American Whitcombe diesel-electric locomotive disguised as an ordinary freight vehicle. McLenaghin Collection.



Petrol tank wagons disguised as box wagons. McLenaghin Collection.

The New Zealand engine drivers soon learnt how to operate them, and the new locomotives quickly proved their worth as the water pipeline beyond El Daba had been badly damaged and therefore steam locomotives could not work deep into the desert without hauling an adequate water supply⁵¹.

Unfortunately, these machines were not quite as powerful as the British steam locomotives, being rated at 650 hp⁵², which resulted in two diesel electrics being required to haul the same load as a single steam locomotive⁵³. However, diesel locomotives were easier to camouflage, making them appear more as general wagons rather than the main power unit. Sheets of light-weight steel were attached to make the locomotive look like a boxcar. For a period, these camouflaged locomotives were used in the middle of the train, 'a relatively inconspicuous position'⁵⁴.

Similarly, petrol tank wagons, another significant target, were also disguised to appear as general boxcar wagons to mislead the enemy aviators. Canvas sides were erected to hide the cylindrical profile of the tank wagons.

Another method to deter aerial attacks was the introduction of 'armoured railcars'. These railcars were used to patrol the rails, look for sabotage and mines, and fire on hostile aircraft. It was hoped that enemy airmen would expend their limited ammunition on these armoured 'decoys' rather than on the real train. By special arrangement a train followed a railcar, or vice versa, through a block section at a minimum time interval of 10 minutes⁵⁵. However, these vehicles offered little protection as the time delay between them and trains was too long and the airmen soon learned to differentiate between the decoy and the real targets. Similarly, trying to deceive the enemy pilots by 'placing the train engine behind three wagons on the train did not fool the enemy'⁵⁶.

⁵¹ Cody, p.397.

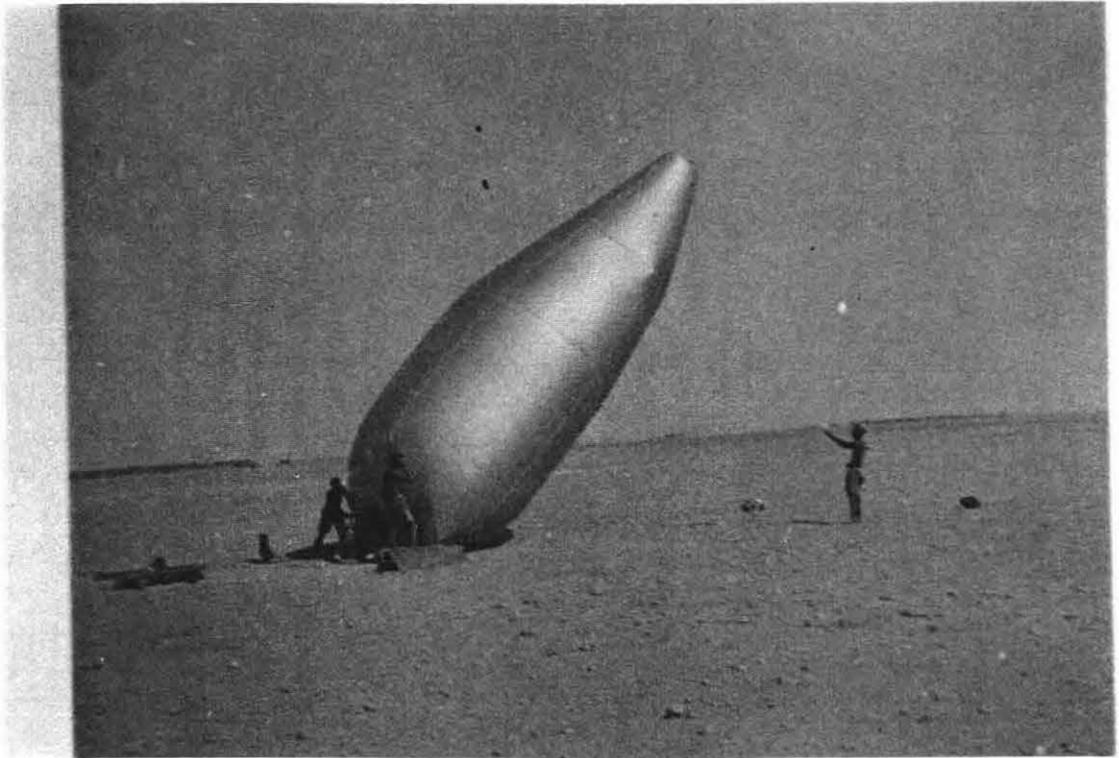
⁵² Tourret, p.98.

⁵³ Ibid., p.99.

⁵⁴ Ibid., p.98.

⁵⁵ Dangerfield, 'Railway Life', p.138.

⁵⁶ Ibid.



Barrage balloon being inflated at Mischeifa. These balloons were attached to locomotive tenders to deter enemy pilots from attacking trains from low-levels. Their presence did reduce damage inflicted during strafing attacks. McLenaghin Collection.

The engineers decided to arm trains with quick-firing 50 millimetre Browning machine guns. These weapons were mounted inside an old box car wagon which had circular hole cut into the roof, and was then towed behind the locomotive or sometimes at the rear of a train⁵⁷. While these guns appeared dangerous, they yielded little success⁵⁸.

In a bid to deter the enemy pilots, the idea of attaching a barrage balloon to the train was tried on 17 May 1942, after a considerable number of aerial attacks⁵⁹. These large balloons were 'suspended about 200 metres above a train, attached to the locomotive's tender by a strong wire cable. Attached was a small bomb with a percussion mechanism designed to blast off if the cable received any sudden strain'⁶⁰. This had the desired effect of making the German pilots fly significantly higher, which dramatically increased the attacking aircraft's trajectory, thus reducing the amount of fire directed at the trains. The balloon idea was feasible due to the open nature of the desert. Where telecommunication wires crossed above the rails, sappers cut them and re-routed them under the railway track, thus allowing the passage of the barrage balloon's cable⁶¹.

In yet another bid to damage the railway line, German aviators were discovered to be landing light Feisler Storch aircraft and demolishing sections of the track. On one occasion, they landed at 'mile 142 between Arad and Halfaya' and placed gun-cotton under the rails and between the sleepers. As a result, 27 feet of rail was blown out and required repair⁶². During another attempt, German aviators who had landed next to the line to plant mines beneath the track were disturbed by an Allied patrol. The Germans attempted to fly off, but the aircraft stalled and the men fled into the desert

⁵⁷ Ibid.

⁵⁸ Martin, 6 April 1942.

⁵⁹ WAI DA 128/1/22, Report by Lt.-Col. A.H. Sage to GHQ, MEF, 28 May 1942, National Archives, Wellington.

⁶⁰ Dangerfield, 'Railway Life', p.138.

⁶¹ Dangerfield, 'Sounds Historical', p.3.

⁶² WAI DA 128/1/22, Report by Lt.-Col. A.H. Sage to GHQ, MEF, National Archives, Wellington.

where they managed to evade the patrol. Their aircraft, however, was flown back to a British airbase as war booty⁶³.

Due to the regular patrols which guarded the important railway line, the Germans switched tactics. It was suspected by the railwaymen and GHQ, that German demolition experts were being put ashore from submarines with the intention of mining the track under cover of darkness. The Italians also tried to disrupt rail traffic by sending commandos ashore via small boats or submarines. It was discovered that a mine had been planted beneath the track but failed to explode when an ambulance train ran over it⁶⁴. On one occasion, a German officer, a sergeant and six other ranks were captured near Alamein station⁶⁵, although how they arrived there was not reported. While these infrequent attempts to wreck the track were unsuccessful, they did delay trains while patrols checked the line prior to train departures, and tended to make train crews nervous.

In addition to the efforts made by the enemy to disrupt railway operations, fifth columnists also created problems for the New Zealanders. One of the more common methods to sabotage railway workings was to leave points 'half cocked', that is being set for neither direction. This would derail wagons or locomotives if not noticed by station staff. Another method was to place 'brake slippers', devices used to stop runaway wagons within marshalling yards, onto main running lines, resulting in trains being derailed⁶⁶. Even massive 'rerailing slippers' were found in a reversed position on running lines with the intention of derailing locomotives and trains, which 'was disastrous and time consuming⁶⁷. While it was never proven, it was suspected by the railwaymen and Allied intelligence staff that Egyptians sympathetic towards Germany were providing the enemy with information, particularly train

⁶³ Campbell, p.12.

⁶⁴ Dangerfield, letter to the author, 30 September 1998.

⁶⁵ Martin, 18 November 1941.

⁶⁶ Cody, p.43.

⁶⁷ Ibid.

movements. However, they 'invariably miscalculated the timings',⁶⁸ as bombers frequently appeared after the trains had departed.

Egyptian State Railways were primarily designed upon British railway models, with much of their rolling stock being of British origin. However, an amalgamation of varying types of machinery greeted the New Zealand railwaymen upon their arrival in the Middle East and North Africa. This created problems when it came to marshalling trains together, as some simple variant such as in buffer and coupling equipment could require alteration to make the wagon useful. War operations called for increased rail demand, however, and the railwaymen were obliged to do the best they could with rolling stock and locomotives that came from 'almost every country in Europe'⁶⁹.

Fortunately, however, the principal system of allowing trains into 'block' sections was very similar to that used in New Zealand, and the railwaymen had no difficulty in operating increased traffic over the single line⁷⁰. The men employed at these isolated stations often originated from remote railway stations in New Zealand and were very capable at using their initiative as difficult situations arose.

However, this very safe system was suspended during the great retreat of 1942, when railwaymen were attempting to withdraw the bulk of railway rolling stock. In its place they operated by 'line of sight'. In other words, they followed the preceding train after a certain time elapsed⁷¹. Despite the flat and generally featureless terrain of the desert, which afforded the locomotive crews a good view of the track ahead, it was still hazardous to operate a train through a section without tangible authority.

⁶⁸ Campbell, p.8.

⁶⁹ Dangerfield, 'Railway Life', p.138.

⁷⁰ Basically the system worked thus: A train could not enter a section of track between two block stations without authority, in this case a 'staff'. This staff had the station names relevant to that section stamped onto the brass ends of the staff. Upon receipt of the staff, the engine driver could then enter the section in advance of his train as no other staff could be issued simultaneously. On reaching the next station, the staff was traded for the next one for the forward section, with the former being replaced into the staff machine until required by another train.

⁷¹ Dangerfield, letter to the author, 22 August 1998.

During the campaign, engine drivers operated locomotives built in Britain, Czechoslovakia, Germany and Italy⁷². Fortunately all steam locomotives are constructed and operated fundamentally the same, and the railwaymen soon learnt to use them to their best capacity. Poor quality coal posed a major problem for locomotive crews. This left a creosote residue which if not cleaned, blocked the firebox grate, thus reducing the all-important up-draught required for good firing. Unfortunately very little hard coal was available in North Africa, and the locomotive crews were plagued by excessive residue build-up from the 'soft' coal supplied. This resulted in heavy delays due 'to the necessity to clean fires en route'⁷³. Locomotive performances were improved by mixing superior quality Welsh coal with that supplied from India and Africa in equal proportions and removing two fire-bars from the locomotive's firebox, thereby increasing draught, ⁷⁴.

Due to poor maintenance and fuel, many of the locomotives the sappers were forced to operate could not raise adequate steam pressure to haul the loads expected of them, despite being converted to burn low-grade oil fuel imported from adjacent countries. This was particularly the case when the New Zealanders were sent to work the Palestinian Hejaz Railway. However, friendly native railway workers who were familiar with these temperamental machines offered the following advice: "watch your chimney and check that only grey smoke comes out. If the smoke is black, you are feeding in too much fuel"⁷⁵. The New Zealand railwaymen gladly accepted this advice and train performances improved accordingly⁷⁶.

Indigenous labour was not always so accommodating, however. Many native labourers and railwaymen objected to having to

⁷² Ibid.

⁷³ WAI DA 128/1/19, Operating Report No.6, Headquarters, Railway Operating Group, 17 February 1942, National Archives, Wellington.

⁷⁴ WAI DA 130/1/17. National Archives, Wellington.

⁷⁵ *Southland News*, 18 December, 1965, 'Narrow Gauge Railways of Palestine', page number unknown.

⁷⁶ Ibid.

increase their workloads under wartime conditions. New Zealanders working in the busy El Daba region believed the local staff would deliberately misinterpret intentions and requirements, thus causing delays to trains⁷⁷. Furthermore, when enemy aircraft appeared, the locals would run off to seek cover but fail to return even when the all clear signal had been given, thus forcing the New Zealanders to carry on with the work unaided⁷⁸.

Another ploy was for the Egyptian engine crews to develop 'language difficulties' when they were asked why they had to return to their locomotive depot when shunting work was required. With frustrating frequency, the Egyptian locomotive crews would retire from duty, claiming that the locomotive had become 'sick or just plain tired' In answer to the New Zealanders' inquiries, the Egyptians replied with the expression "mis maloum" (translating to "no understand"), when previously the staff had had no such difficulties⁷⁹. 'Often the engine crew found it easier to make the engine 'well again' and come to work in the marshalling yard rather than try to answer our persistent questioning'⁸⁰.

Many of the wagons used were not equipped with brakes, either automatic air brakes or hand brakes. Such shortcomings made for difficult and dangerous shunting operations and train running. Shunting staff resorted to using stones to chock wagon wheels in marshalling yards⁸¹. However, stones had the propensity to fall off the rails, thus making the wagon a potential runaway. This was extremely hazardous, particularly when yards often had petrol tank wagons present.

The lack of brakes on wagons also created major train running problems. Despite the desert terrain being reasonably flat, the problem of 'run in' and 'run out'⁸² was still very real. This 'ripple'

⁷⁷ Dangerfield, 'Sounds Historical', p.6.

⁷⁸ Ibid.

⁷⁹ Dangerfield, 'Railway Life', p.134.

⁸⁰ Ibid.

⁸¹ Ibid., p.47.

⁸² This is a term used to describe the concertina effect that occurs on a train which has few or no brakes when the engine driver applies or releases the brakes on the locomotive.

situation was not easy to rectify, as the engine driver only had a locomotive brake to slow or halt the train, which led to trains breaking in two if his train handling skills were not carefully applied. Depending upon the tension of coupling links and hooks and compression on the buffers, the distance between adjacent wagons could vary by more than one and a half feet, which could cause a long train to vary in length by up to 100 feet⁸³. To enhance a train's braking effort, the 'shebacks', or guard's vans, had handbrakes which the guard applied when signalled by the engine driver by whistle. Due to the increase of tonnage hauled by wartime trains, these wagons were supplemented by 36 tons of lead 'to prevent its jumping from the rails at times of a heavy run-in of slack in the wagon couplings'⁸⁴. During 1941, former London and North Eastern Railways brake vans were made available⁸⁵. These brake vans weighed 25 tons, and were superior to the ESR 'shebacks'⁸⁶.

As the shebacks were prohibited from displaying sidelights, or indeed any lights at all, and radio communication was not yet in use, the crew had no way of knowing whether their train was intact. During daylight hours this was not a problem, unless the dreaded 'khamseen' was blowing and thus reducing visibility. However, at night this situation could be disastrous. If a train parted, the rear half could follow the forward portion of the train, and run into it when the train eventually came to a halt. One example of this occurred during the early hours on 24 October 1942, when a petrol tank train parted. The rear half of the train eventually caught up to the forward portion when the train was halted at the station of Hawaria. Due to the impetus, the rear half telescoped into the stationary train, which resulted in a major petrol spillage and fire, destroying fifteen valuable wagons⁸⁷.

⁸³ Campbell, p.9.

⁸⁴ Dangerfield, personal letter to the author, 22 July 1998.

⁸⁵ Campbell, p.8.

⁸⁶ Ibid.

⁸⁷ WAI 128/1/27, Operating Report No. 25, Headquarters, Railway Operating Group, 18 November 1942, National Archives, Wellington.

During the Middle Eastern Campaign, New Zealand railwaymen were required to work the Hejaz Railway in Palestine⁸⁸. This metre gauge line had been constructed during the First World War to aid Allenby's advance. The line began at Haifa and went via Jordan to Medina, Saudi Arabia. Unlike the generally flat terrain of the Western Desert, the Hejaz line traversed steep, hilly country, particularly around the Samaria and Samakh regions, which again posed braking problems.

Whereas most of the ESR wagons were not fitted with any hand brakes, certain wagons on the Hejaz line were fitted with manually operated 'tiller' brakes. The tare weight of wagons on this line was approximately ten tonnes⁸⁹, extremely heavy vehicles not to be fitted with train brakes. This required men to ride in very cramped conditions in sentry-box-like shelters above the buffers⁹⁰. From their precarious positions, brakemen were expected to 'cross from one wagon to another en route to apply or release brakes as instructed by whistle signals'⁹¹. This was an extremely dangerous occupation, but no New Zealand railwaymen were killed or seriously injured while doing it.

The prohibition of lights on trains ensured an increased workload for many railwaymen, whether they were in isolated desert crossing stations or even in the larger rail yards. Locomotive headlights are usually very bright, and would have been easily seen at night by prowling enemy aircraft. All shunting at night had to be carried out with extremely low-light lamps, barely discernible unless very close. At the block stations, that were set approximately twelve miles apart, where trains could meet and safely pass, the men had to walk out past the 'station limits' points in order to signal approaching trains. As trains did not display lights, the station men often used to lie close to the ground in an attempt to see the approaching train silhouetted against the even darker sky⁹².

⁸⁸ See map 6, *History of the Corps of Royal Engineers, Vol. VI*. The Institute of Royal Engineers, Chatham, 1952.

⁸⁹ Dangerfield, 'Railway Life', p.49.

⁹⁰ See photo, *The New Zealand Railway Observer*, Winter 1979, p.48.

⁹¹ Dangerfield, 'Railway Life', p.49.

⁹² Dangerfield, 'Sounds Historical', p.4.

It is quite remarkable that shunting related injuries were rare, particularly as the shunting staff often had to 'feel around' for the points levers at night.

It was soon discovered that trains operating on moonlit nights were very visible from the air, as reported by the pilots of the Royal Air Force. The pilots stated that 'when the moon is up in the very clear desert skies the rails looked like shiny ribbons and any train identified itself as a moving dark patch'⁹³. During the phase of the full moon, night operations were suspended unless low cloud obliterated the moonlight. During night running, the locomotive crews shrouded the locomotives cab with blackout sheets, being very aware that the flashes caused by opening the locomotive's firebox door were visible to aircraft.⁹⁴ Due to operating under complete blackout regulations, the locomotive crews resorted to using extremely low light 'homemade' lanterns from disused kerosene tins to give enough light to read gauges and check water levels in the sight glasses⁹⁵.

Locomotive crews were faced with the prospect of operating trains over track which was not always well bedded in with stone ballast and subject to moving during the passage of heavy trains⁹⁶. Their anxiety was also increased by the knowledge that bomb damage might have gone unnoticed, resulting in derailings.

Ironically enough, one of the greatest concerns about track damage came from excessive rain. Despite being a desert region, the North African coast is still subjected to occasional heavy rain storms. The extension line traversed wadhis which were natural drainage channels from the plateau in the wet seasons. Where track embankments crossed the wadhis, two or three large diameter (six foot) concrete conduits were laid through the earth fills to drain the up-stream areas. The water run off often caused the earthworks supporting the permanent way to be washed away, leaving the rails

⁹³ Ibid.

⁹⁴ Ibid., p.3.

⁹⁵ Campbell, p.10.

⁹⁶ Information supplied to the author by Mr B.L. Campbell, 17 June 1998.

literally hanging above craters⁹⁷. Natural track subsidence and bomb damage also caused occasional derailments⁹⁸.

Another significant problem which confronted the railwaymen in Palestine on the Haifa-Beirut line, was unstable earth, in particular 'cotton' or 'chocolate' soil. This cotton soil was an 'extremely fine grained soil which had an extraordinary capacity for absorbing moisture'⁹⁹. Its stability then broke down and it would then 'only support the lightest distributed load.... A flat track had to be laid, for the first train could double or treble the cant'¹⁰⁰. A high degree of cant could possibly lead to trains actually 'tipping over'. There were few stocks of stone ballast and no construction trains available for over a month, so operating trains over these sections of track caused great anxiety amongst the railwaymen¹⁰¹. What little amounts of ballast that was available soon sank into a 'bottomless pit'¹⁰². Due to the lack of trees or even dense shrubbery, fascines could not be manufactured to be placed under the track and thus help to distribute a train's weight¹⁰³. It was not until January 1943 that the Haifa-Beirut-Tripoli railway line received any major attention, particularly the cotton-soil country, when construction units returned to the area¹⁰⁴.

Despite the vast open country through which the Western Desert Railway ran, 'level crossing' accidents still occurred. Motor vehicles were not permitted to cross the track anywhere except at authorised crossing points. This was due to heavy armoured vehicles and trucks damaging the permanent way where appropriate planking was not situated. However, this rule was broken occasionally and did result in accidents. On 7 October a light locomotive (a locomotive not coupled to any other rolling stock),

⁹⁷ Campbell, p.11.

⁹⁸ Ibid.

⁹⁹ Cody, p.399

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

¹⁰² Letter from Dangerfield to the author, 13 August 1998.

¹⁰³ Ibid.

¹⁰⁴ Cody, pp.401-2.

collided tender first with a 'armoured fighting vehicle' (AFV), better known as a tank¹⁰⁵. This derailed the tender and 'extensively damaged the tank'¹⁰⁶ and closed the line for approximately 15 hours, a long time in a war zone. In another incident, 'when WD engine 9334 (ESR crew) returning light, tender first, to Gabbary on 14 October 42 had reached kilo 12 a WD lorry struck the auxiliary water tank and knocked it clear of the track. The permanent way was fairly extensively damaged¹⁰⁷ Headquarters staff were concerned about these accidents and subsequently took action in an attempt to avoid a recurrence.

Wind storms also caused numerous problems for the railwaymen. The 'Khamseen' was the cause for derailments, blocking the mainline, clogging crossing points and reducing visibility, while making living and working conditions miserable for all. War correspondent Alan Moorehead remarked: 'The khamseen sandstorm... is in my experience the most hellish wind on earth. [I]t blocked visibility down to half a dozen yards'¹⁰⁸.

Not only did the sand irritate men, but the heat caused problems as well. A former engine driver, known colloquially as 'Pelorus Jack' recalled: 'Temperatures rose to 130-135 degrees Fahrenheit (55-58 degrees Celsius) and grab-irons, throttle, reverse wheel, brake valve and fire irons became too hot to touch'¹⁰⁹. Taking into account the heat generated by a steam locomotive's firebox, conditions inside the cab became extremely uncomfortable.

Added to the human discomfort inflicted by the khamseen, wear on machinery was increased due to the wind driving sand into working parts and then acting as a grinding paste. Areas particularly prone to wear were 'the axlebox collars, valve and crosshead guides, and the expansion-links and die-blocks of the Walschaerts valve gear'¹¹⁰. Keeping these areas dust free and well lubricated was

¹⁰⁵ Ibid., p.399.

¹⁰⁶ WAI 128/1/27.

¹⁰⁷ Ibid.

¹⁰⁸ Moorehead, p.3.

¹⁰⁹ 'Pelorus Jack', p.18.

¹¹⁰ Ibid.

essential to keep the locomotives in serviceable condition. Stanier's locomotives, the mainstay of desert train operations, had been designed for British climatic conditions, but proved to be surprisingly able machines in the desert regions. Regular servicing overhauls could be carried out in a short time due to the relatively simple design techniques, and they were returned for operations within a day or two.

Upon being given the task of extending the railway further westwards, the engineers realised the effect the shifting sand would eventually have on any slight rise in the ground or obstacle created a barrier where wind-borne sand could build up, and cuttings would soon fill with sand, requiring exhausting efforts to clear. Therefore railway cuttings were avoided wherever possible. Even the actual rails themselves acted as barriers, resulting in them being obliterated by sand and having to be dug out. Fortunately the frequency of trains helped to keep the line generally clear as the weight of the leading locomotive depressed the sand to a level over which the following wagons could safely travel.

However, sand drift was a constant concern following heavy sandstorms. During these storms, engine drivers would reduce their speed to as little as five miles per hour¹¹¹, being prepared to stop immediately if the line was thought to be blocked. Intense sand storms did cause the cancellation of trains, and 'adversely affected the running times of other trains on the Extension Line'¹¹². Despite the problems associated with railway cuttings, there remained areas where no other option was viable. One such area was the long climb from Similla to Sequeifa. On 30 January 1942, a west-bound freight train was derailed by excessive sand on the rails. As the engine driver was travelling at only five miles an hour, only the leading bogie wheels were derailed, but the track gauge was distorted due to the accident¹¹³.

¹¹¹ WAI DA 128/1/19. War Diary, Headquarters, Railway Operating Group, 17 February 1942, National Archives, Wellington.

¹¹² Ibid.

¹¹³ Ibid.

While not being as potentially dangerous to train running, sand blown into points ensured many laborious hours for the men tasked to clear them. Taking into account the number of points within a shunting yard and the distances often involved, it was possibly the most tedious job for the 'blockmen'¹¹⁴. The major marshalling yard of El Daba alone had over eight miles of track with points interspersed. When the points were blocked by sand, it took up to half an hour of 'heart-breaking back-aching' work to clear them¹¹⁵. Occasionally the drifts in the land depressions were too deep for safe running and also required clearing by the surfacemen¹¹⁶.

Ironically enough, enemy attacks, blackout conditions and sandstorms were not the only hazard to the railwaymen. Unit orders from February 1942 warn railwaymen of 'troops proceeding by rail throwing hand-grenades out of trains and causing injury to persons and property'¹¹⁷. Needless to say, this was not a practice appreciated by railwaymen and culprits were threatened with harsh disciplinary measures. While the isolated blockmen were pleased to see troop trains, particularly those carrying fellow New Zealanders, they were somewhat concerned by the hygiene problems incurred when they were halted at their stations. With up to 500 men de-training, they naturally used this break to relieve themselves, much to the chagrin of the station attendants. Such actions caused the blockmen to try and stop trains outside of their stations when required, in order for the surrounding 'countryside' be kept pristine. Some blockmen even went to the extent of placing notices outside their personal toilets warning of poisonous snakes and insects within¹¹⁸.

Many of the problems which the railwaymen encountered were commonly shared by all those who served in the Middle East Campaign. However, their particular occupation of operating a

¹¹⁴ This was the term given to the men who manned the isolated crossing stations and the more substantial desert marshalling yards.

¹¹⁵ Dangerfield, 'Railway Life', p.135.

¹¹⁶ Ibid.

¹¹⁷ WAI DA 128/1/19, Unit Order No. 58, Headquarters, Railway Operating Group, 11 February 1942, National Archives, Wellington.

¹¹⁸ Campbell, p.10.

railway system in a harsh and unforgiving environment multiplied their difficulties. The New Zealanders, along with their British and Indian colleagues, faced the challenges and duly overcame the problems in a manner which further enhanced the notion of 'Kiwi ingenuity' and ability to deal with difficult issues as they arise.

Chapter Five

Disbandment, 1943

This chapter explores the reasons why the Railway Group was disbanded in May 1943 and the men recalled to New Zealand. Relevant points examined include the limited tasks the various Railway Companies were involved in after the El Alamein offensive in 1942, the prospects for their deployment in Europe and the critical manpower shortages in New Zealand, additionally strained by the arrival of United States forces. The question of how Railway Group officers and men felt about having their units disbanded is also covered.

The British Eighth Army's successful 'Supercharge' offensive, which began at El Alamein on November 2 1942, resulted in the Afrika Korps beginning a general retreat from Egypt that was not to end until 10 May 1943, when German forces finally surrendered at Cap Bon, Tunisia. Following this offensive, the role of the railwaymen was greatly reduced.

With the United States entering the war, British forces in Africa received armoured vehicles and other essential war equipment via the Suez ports, enabling them to accumulate massive stock-piles. Initially the railways played a vital part in bringing up munitions, food, water and sundry equipment for Montgomery's winter offensive. From ship's holds to the men at the El Alamein positions, it was a matter of several hours transport by rail, and thence by lorry to individual units for distribution. However, as the British forces advanced westward, the ports of Tobruk, Benghazi and eventually Tripoli once again became available. With the threat of air attacks against Mediterranean coastal shipping diminishing, supplies could leave Britain or the United States and be carried directly to these ports rather than being unloaded at Suez. Since the desert railway terminated at Belhamed, railway operations were soon superseded by coastal shipping, particularly when the fighting

went deep into Libya. This raised questions about the future of the railway companies.

In contrast, German forces faced the problem that had been the cause of the British withdrawal in 1941, that of having over-stretched lines of communication. At El Alamein, the Germans' principal port of supply was Tripoli, over a 1000 miles distant in Libya, whereas British forces were supplied from ports a little over 200 miles away. The Allied offensive soon led to Rommel having to conduct a rapid fighting retreat, as his forces could not be regularly supplied with provisions and necessary war materials. When Anglo-American troops landed in Algeria on 8 November 1942, the Axis forces in North Africa faced the nightmare of every general, fighting on two fronts against better supplied forces.

As the British forces pushed the Germans inexorably further westward, the running of trains became extremely 'normal', as air attacks ceased to be a threat. The railwaymen were therefore able to utilise to the full the value of having a reliable system by running 374 trains during December 1942, conveying approximately 14,762 wagons and 140 coaches (for troop transport). All this tallied 65,000 tons alone being off-loaded at Tobruk, with many thousands of tons unloaded at various other railheads¹. With the occupation of Tripoli in Libya on 23 January 1943, the pressure finally came off the desert railway. The New Zealanders of the 16 Railway Operating Company were relieved by 115 (Indian) Railway Operating Company, and returned to the main New Zealand base in Egypt, Maadi Camp². However, men from 17 Railway Operating Company and Headquarters, Railway Operating Group, remained for the duration of the desert winter, and finally relinquished train running duties to 193³ Railway Operating

¹ J.F. Cody, *New Zealand Engineers, Middle East*, Wellington: War History Branch, 1961, p.398.

² Ibid.

³ According to Cody, the Railway Company, Royal Engineers, which relieved 17 Railway Operating Company, was 195. However, former block-station NCO, Lance-Sergeant J.A. Dangerfield has provided the author with a photocopy of the original Operation Order, and the British company is stated as being 193.

Company, Royal Engineers, on 14 March 1943⁴. The New Zealanders' connection with the Western Desert Railway Extension, which they had constructed, maintained and operated, came to an end.

Two American Railroad Divisions were among the units sent to North Africa to complement the British railway companies now operating the railway which had previously been under the jurisdiction of the New Zealanders. The arrival in of the Railroad Battalions, combined with the almost unlimited resources that the United States could muster, it seems unlikely that the New Zealand Railway Companies could have retained their 'unchallenged superiority' as the pre-eminent railwaymen in the Middle East or Southern Europe in the future. However, their future was still being discussed at very high levels. The New Zealand railwaymen felt they had been usurped, and resented the American arrival, particularly as it was felt that the difficult and dangerous work had been completed by New Zealand and Indian labour⁵. To the New Zealanders, the Americans were brash and overbearing. They often ridiculed the antiquated equipment which the New Zealanders had been forced to use, and by no means 'appreciated the efficiency of the men they were replacing'⁶.

The men from the Operating Companies found themselves back in Maadi Camp by March 1943, and were then sent on well-earned leave. Upon their return, in anticipation of being absorbed into fighting units, the men embarked on infantry training, with non-commissioned officers being sent off to learn the required skills of leadership at Schools of Instruction. However, railway duties had not ceased for all, as twenty sappers were detached to work with 169 Railway Workshops Company and 182 Railway Operating Company, Royal Engineers. These men found themselves working on the Kantara-El Shatt line, those with the Operating Company driving new diesel-electric locomotives⁷.

⁴ Cody, p.398.

⁵ Letter sent from J.A. Dangerfield to the author, 13 September 1998.

⁶ Ibid.

⁷ Cody, p.465.

Unknown to the sappers, high-level discussions involving the British and New Zealand governments, and Freyberg, were seeking to find a compromise as to what to do with the Railway Group. Rumour and speculation, which constitutes a large proportion of military life, was rife amongst the troops, who felt that their services would be required in the forthcoming campaigns in Europe. Most of the men were under the impression that they were to be sent to Sicily to carry out railway operations⁸. Despite having a somewhat uncertain future as a military unit, morale was reasonably high amongst the men⁹. They considered they had set out and achieved, against considerable odds, the building and operation of a railway exclusively for war purposes. In comparison to the rigorous life in the desert, the men now enjoyed a life of comparative ease, with their daily routine consisting of attending a morning parade and inspection, and having the rest of the day to themselves. While enjoying this relaxation, many still felt that there was an important role for them, and optimism was high.

During this period, the men from the Railway Maintenance and Construction Group were occupied in up-grading the Haifa to Tripoli (Lebanon) line. Their primary task was to crush and supply ballast stone for use in stabilising the track where it traversed the treacherous 'cotton soil'¹⁰ country. These men also stabilised hastily formed cuttings and similar terrain. The well-travelled 9 Survey Company, minus Number 3 Section, was again dispatched on 9 November 1942, with 'Paiforce', code word for the Tenth Army, which was being sent to Baghdad. A contingent of the survey men eventually arrived in the oil shipping river port of Khorramshahr, near Basra. There they began a topographical survey of existing rail facilities, and proceeded to redesign and peg out new marshalling yards¹¹.

The remaining unit, Number One Section, was dispatched north to Kirkuk, a pipeline terminal on a narrow gauge railway. Once there,

⁸ J.A. Dangerfield mentioned this rumour in a letter to the author, 13 September 1998.

⁹ Ibid.

¹⁰ See Chapter Three.

¹¹ Cody, p.400.

some of the men planned a station layout, with depots for stores and munitions, while the remainder went off on various survey inspections¹². The Headquarters section remained in Baghdad, draughting yard layouts and carrying out general maintenance¹³. However, their tour of duty in Iraq was cut short by the departure of Australian railway engineers from the Middle East. The men from the 9 Railway Survey Company were given the ignominious task of becoming maintenance labourers on the Beirut-Tripoli section of the Haifa-Tripoli railway due to the departure of the Australian railway engineers¹⁴.

The railwaymen found themselves picking up the work the departed Australians had left behind. As the railway line skirted the coast, sea walls required strengthening and railway cuttings further stabilising, while the cotton soil country needed constant attention. To these men, the future of the varied railway companies appeared assured, their presence was required and would probably remain so as the Allied armies advanced further into Europe. However, the situation in New Zealand was to influence directly the future of the railway companies in the Middle East.

The manpower shortage had become a major factor in New Zealand's domestic political agenda. Industry was experiencing the effects of a depleted workforce by 1943, with the Railways Department facing its worst-ever staffing crisis between February and March 1943¹⁵. This was primarily due to the influx of American servicemen and heavy demands being made on freight traffic¹⁶. With over 7000 railwaymen or 27% of the total pre-war staff being engaged in military service, the situation was becoming critical¹⁷. It seems inconceivable that the government did not enact greater degrees of protection towards industries which would become essential in war time.

¹² Ibid., p.401.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ J.V.T. Baker, *War Economy*, Wellington: War History Branch, 1965, p.406.

¹⁶ Baker, See graph p.72. Approximately 72,000 American servicemen arrived in New Zealand between 1943-44.

¹⁷ Ibid.

By 1943, oil, petrol and rubber were in extremely short supply¹⁸, so road transportation had to be carefully controlled, resulting in severe restrictions for both military and civilians. Fortunately, New Zealand's pre-war railway had been up-to-date, with locomotives and rolling stock being in very good condition. The most difficult aspect of operating the wartime domestic railway, apart from labour shortages, was obtaining coal on a constant basis. Due to many New Zealand miners volunteering or being drafted into the armed services, coal production suffered. Hence the railways could not 'build up stocks as a precaution against interruption of supply'¹⁹. Another major influence on coal production was the occurrence of industrial disputes which still occurred despite the war²⁰.

Despite these difficulties, the wartime railways geared up for a massive increase in traffic. Before the influx of American troops, transporting New Zealand servicemen had been well within their capability. However, by 1943 the situation was beginning to deteriorate. In the early stages of the war there were approximately one million troop movements by rail²¹. Between 1942 and 1943 rail movements reached their peak with over five million troops being transported by railways²². Throughout 1944 this figure remained at four million troop movements²³. In total, during the war, thirty-two thousand special trains were provided to move troops and 'over seventeen million individual journeys for members of the Armed Forces were made on these trains'²⁴. All this was carried out with staff levels over a quarter below pre-war numbers. Inevitably, this led to increased working hours for many within essential industries, railway locomotive drivers being some of the worst affected.

¹⁸ *NZPD*, 263, June 25 to August 26, 1943, p.536.

¹⁹ Baker, p.409.

²⁰ *Ibid.*

²¹ *Ibid.*, p.405.

²² *Ibid.*

²³ *Ibid.*

²⁴ *Ibid.*

Such was the concern about railwaymen working excessively long hours, that questions were raised in Parliament to the Minister of Railways, Bob Semple, about the issue. The primary question put to Semple concerned the fact that engine drivers were working an average of 60 hours per week²⁵, putting them under extreme strain²⁶. Semple pointed out that the average working week for engine crews throughout the Dominion was 55.3 hours per week, including Sunday duty, and at this stage, railways were operating at 12.5% below pre-war staff levels. He claimed that these hours were being reduced by rearranging rosters²⁷. The debate centred around not only hours worked, but the fact that engine drivers were amongst the lowest paid skilled workers²⁸. In addition to this, the point was made that many engine drivers had not had any holidays in the preceding four years²⁹.

The importance of retaining locomotive engineers from military service was raised very early in the war. In a memorandum to the General Manager, the Locomotive Superintendent warned of the problems that would arise from allowing large numbers of engine crew to volunteer for military service³⁰. He predicted the rise of train movements and the subsequent strains that would place upon operating staff. However, by this stage, the 16 and 17 Railway Operating Companies had been dispatched, leading to the depletion of locomotive crews. It appears that this memorandum was a warning of further possible depletion of locomotive staff due to their work not being deemed a reserved occupation. Considering that railways were the primary means of bulk transportation at this time, it is remarkable that the Government allowed so many skilled tradesmen and operators to leave New Zealand when war broke out.

²⁵ NZPD, 263, p.523.

²⁶ It is interesting to note that Semple, in reply to a question about the necessity of 'race trains', publicly stated that some engine drivers were working up to 'seventy hours a week'. NZPD, 262, February 24 to June 24 1943. p.939.

²⁷ NZPD, 263, p.524.

²⁸ Ibid., p.534. The National Member for Central Otago, W.A. Bodkin, maintained: "That Railways Department's engine drivers were the worst paid men in the country".

²⁹ Ibid., p.534.

³⁰ R 501/81/2, Memorandum from Locomotive Superintendents Office to Casey, 12 August 1940. National Archives, Wellington.

In comparison, Britain realised the vital importance of their railways very early in the war and, while not totally exempting railwaymen from military service entirely, it included railway service in a schedule of reserved occupations³¹. The purpose of this schedule was to 'ensure that men required for essential civilian work would not be recruited for forms of national service in which their skill and experience would be of no value'³². In New Zealand it was only at the end of 1940 that railway service took precedence over military service, albeit in a minor way. Railwaymen, while being invited to join the Home Guard, were cautioned that their 'railway duty as the first consideration'³³. Other Empire countries gave much greater protection to the retention of their railways staff than did the New Zealand government³⁴.

A former artillery soldier, and career railwayman, recalls observing, while on leave from the army, how exhausted his engine driver father had become while working long shifts during the war years. He stated how 'grey' and 'worn out' he had become in trying to meet the demands placed upon those engine drivers and firemen remaining in New Zealand³⁵. Railway work is notoriously irregular, with shifts never remaining static, and with much of the work being undertaken during the night hours, which can lead to disrupted sleeping and eating routines. By 1943 the strain of continual and unrelenting train running began to have an industrial effect. During a union meeting held in Canterbury in May 1943, the union 'viewed with alarm that locomotive running staff were working shifts of

³¹ O.S. Nock, *Britain's Railways at War*, London: Ian Allan Ltd. 1971, p.38.

³² Ibid.

³³ Memorandum sent out by G.M. Beck, District Engineer, Invercargill region, December 9 1940, informing railway personnel that their railway positions take precedence over Home Guard duties. A copy of this memorandum was supplied to the author by J.A. Dangerfield.

³⁴ Baker, p.406.

³⁵ Information supplied by R.D. Munro, Mr Munro's father was a career engine driver who had been asked to join the Railway Operating Companies, but realised that railways would become an essential service and decided to remain in New Zealand. Mr Munro was married and in his forties when requested to join the Operating Company. These details were related to the author in an interview with Ray Munro (son) on 14 August 1998.

between 16 to 19 hours' on a consistent basis. They stated that the annual rest period of six days (in lieu of normal annual holidays) was not sufficient to compensate these men adequately for the exceedingly long hours expected of them³⁶.

During an earlier union meeting of railwaymen held at Greymouth in March 1943³⁷, railwaymen had expressed their displeasure that too much of their time was taken up in the running of unnecessary excursion trains which had no military value whatsoever. They also questioned the proposed policy whereby vital staff who had completed their 40 years of service were to be retained as full-time employees rather than be allowed to retire. This policy was opposed by the railway union officials, particularly as it could affect the employees' superannuation schemes. This meeting also had union members asking the Government to release railwaymen from the armed forces to help ease the strain of New Zealand's domestic railway staff. Furthermore, they raised the issue of a pay review, as railwaymen were still considered underpaid for the tasks they were expected to carry out³⁸.

In common with their Canterbury colleagues, the Greymouth railwaymen stated that 'in many instances, breaking point has been reached' in regards to working long hours. By working locomotive running staff to the limits of their personal endurance, pre-war fatigue safety margins would have certainly been contravened³⁹. Following a train accident at Mercer, on the Main Trunk Line, the locomotive running branch union, the Engine Drivers, Firemen and Cleaners Association (EFCA) recommended to Railways management that the running time be extended for the Wellington-Auckland "Limited" Express in order to reduce strain on the engine crew and

³⁶ *The Press*, 10 May 1943, p.4.

³⁷ *The Press*, 23 March 1943, p.3.

³⁸ See *NZPD*, 263, p.534.

³⁹ By comparison, Trans Rail, The New Zealand Railways Departments' eventual successor, implemented a policy in 1993 which prohibits a locomotive engineers from exceeding eleven hours for night shift duty. This policy was based on guidelines set down for long distant road transport operators by the Land Transport Safety Authority. The author is unaware of any such restrictions during the war years.

to increase safety margins. However, their request was refused⁴⁰. Considering that these men were most familiar with track conditions and their own personal levels of fatigue, it would appear the Railways Department was less interested in safety and more in meeting traffic demand. EFCA sent a memo to the General Manager, E. Casey, in December 1943, expressing alarm at the number of derailments occurring on running lines due to the lack of continuous maintenance⁴¹. Their suggestion was to have more skilled maintenance men made available and for 'flying squads' to be created to move wherever vital maintenance work was required⁴².

With the advent of conscription on 22 July 1940⁴³, senior railway officials had become alarmed at the prospect of having their labour force further depleted. Casey faced the problem of having to cope with a massive increase in rail transport requirements with a reduced staff. In January 1942 he outlined the problems his Department faced. He argued that in wartime the railway system becomes somewhat of an extension of the military services. Casey claimed:

It is generally conceded that an efficient railway service is a vital adjunct to the defence organisation of the Dominion and the Department feels that the time has now arrived when it is essential that a limit be placed upon the release of its employees for service with the Armed Forces.... The Railways Department must be regarded as an integral part of the defence system and in a national emergency the demands upon the national transport system would, in all probability, be still further increased⁴⁴.

⁴⁰ R 300/730/3, Extract form Board of Inquiry, Mercer Railway Accident. National Archives, Wellington.

⁴¹ R 501/81/11, Copy of the memorandum sent from EFCA's Grand Council to Casey, 7 December 1943. National Archives, Wellington.

⁴² Ibid.

⁴³ David Grant, 'Out In The Cold: Pacifists and Conscientious Objectors in New Zealand During World War II', Auckland: Reed Methuen, 1986, p.80.

⁴⁴ R 501/81/3, Report compiled by Railways General Manager, E. Casey, regarding the importance of retaining men eligible for military service, 5 January 1942. National Archives, Wellington.

In this report, he gave evidence that the remaining staff were grossly overworked. For example, within the locomotive running branch, 'over a period of four weeks, a total of 46,184 hours of overtime was worked, this is equivalent to approximately 289 men in full ordinary employment'. In the workshops, over the same period, the overtime figure was '77,532 hours, equivalent to an additional 485 men on a normal 40-hour week basis'. Casey mentioned the contribution already made by the Railways Department when he stated:

The provision by the Railways Department in the earlier stages of the war of specialised companies comprising 858 trained personnel for service overseas imposed a severe strain on the operating branch of the service while the provision of some 150 members as reinforcements has increased the difficulties⁴⁵.

What particularly concerned Casey was the realisation that there were 11,432 men within the railways who were eligible for conscription⁴⁶. While he conceded that the war effort demanded fresh troops to reinforce those already serving, he appealed to the Manpower authorities for the retention of railway porters, as he has already lost 'over 50% since the outbreak of war'⁴⁷. It would appear that Casey was being unreasonable to expect such a large degree of latitude towards protecting his staff. However, it must be remembered that many railway positions required specialist skills such as signalling porters and locomotive operating, and could not be safely or practically undertaken by untrained labour. The farming community also requested manpower retention, but harvests could at least be gathered in by unskilled female or male labour. With railway transport, the wider implications were less readily solved.

Staff shortages became so critical by December 1942 that Casey pressed the Director of the National Service Department to get men

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ Ibid.

released from the army to return to their civilian railway positions⁴⁸. Complaints of staff fatigue, and reports suggesting that railway staff should be withheld from military call-up no doubt put pressure on the Minister of Railways. His options were quite limited, either bring qualified railwaymen back to New Zealand from the Middle East, or start reducing the number of trains operating, a quite unlikely prospect considering the wartime transportation situation. After Semple had been questioned in the House about railwaymen being expected to carry out extra duties, he conceded that the situation required rectifying, and stated that steps had been taken as early as April 1942 to have engine drivers serving in the armed forces released and returned to their civilian occupation⁴⁹. However, Semple defended the Railways Department's prior actions, and countered arguments of railwaymen being expected to work longer shifts by stating that the war situation demanded sacrifices from all those in the workforce.

In an attempt to alleviate the manpower shortage, women were employed in areas previously deemed unsuitable for female staff, but locomotive running was still very much a male preserve. Substitute female staff took up positions such as stores, station assistants, office work and light manual labour. By 1943, there were approximately 1400 female staff employed by the Railways Department⁵⁰. However, specialist skills were still absent, and neither men nor women could be rapidly trained to fill positions of men away overseas.

So critical did the situation become that the Railways Department resorted to appealing to retired staff to return to the workforce⁵¹. Casey had letters sent to those men who had prior experience in freight handling and general duties ordinarily carried out by station porters. Another suggestion raised was that recently retired engine drivers be brought out of retirement. This suggestion was

⁴⁸ R 501/81/3, Memorandum sent by Brigadier A.E. Conway, Adjutant-General, to the Director, National Service Department, 22 December 1942. National Archives, Wellington.

⁴⁹ NZPD, 263, p.524.

⁵⁰ NZPD, 262, 24 February to 24 June 24, 1943, p.799.

⁵¹ R 501/81/3, Letter sent to Mr E. Paull, a former railwayman, from E. Casey, 11 November 1942. National Archives, Wellington.

rigorously opposed by Semple, as he refused to have men who were receiving superannuation also work and receive wages⁵².

Further pressure was brought to bear upon the government officials to either repatriate railwaymen or reduce conscription from within the Department following two serious train accidents. The accident which occurred near Hyde, Central Otago, on 4 June 1943, was up to that point the worst in New Zealand's railway history, with 21 passengers killed⁵³. The subsequent accident report found the engine driver, Corcoran, to have been grossly negligent as he had been drinking prior to beginning his work shift, causing the train to crash through excessive speed. However, there were railwaymen who believed that Corcoran had been unjustly tried and sentenced⁵⁴. They felt that the Railways Department had been neglecting maintenance on the line, and that much of the blame fell upon Railways management for expecting so many locomotive running men to work the hours rostered, culminating in serious fatigue. While the findings of the official report prevailed, the sentiments of many railwaymen opposed what Railways Department accident investigators deemed the cause.

To compound the issue, another accident occurred on 8 November 1943, this time on the Hutt Valley-Wellington line. Three people died and twenty were injured. In this accident a locomotive was travelling bunker-first over well-worn track. Government Board of Inquiry Investigators discovered that there were significant variations in the track's cant, due largely to reduced line maintenance. Their report pointedly informed the Railways Department that reduced manpower was the primary cause of the accident:

The condition of the track cannot be dissociated from the weight and density of the traffic movement upon it, on the one hand, and the available strengths of the maintenance gangs, on

⁵² NZPD, 262, p.534.

⁵³ *Sunday Star Times*, 7 June 1998, p.A9.

⁵⁴ See R 501/81/11, National Archives, Wellington. These files contain numerous extracts from various newspapers, letters to editors and editorials. Most oppose the findings of the Railways Accident Report.

the other. It is disquieting, therefore, to find that, against large increases in train-miles, train-loads and gross ton-miles on the Hutt Valley Section from 1938-39 to 1942-43, there has been a marked decrease in the effective man-power of line gangs... We very strongly recommend that every effort be made by the Government and the man-power authorities to meet the requirements of the Railways Department for sufficient man-power properly to maintain the permanent way, locomotives, and other rolling stock⁵⁵.

Alarming, a similar, yet less destructive derailing had occurred three months previously at precisely the same place⁵⁶. It seemed that track maintenance had been neglected due to drastic staff reductions since the outbreak of war.

On 19 November, 1942, Peter Fraser cabled⁵⁷ Winston Churchill to discuss the future of the New Zealand Second Division. This cable set in motion the final stages of the role the Railway Group would play in the war. At this juncture of the war, pressure was being exerted on the New Zealand Government by Britain and even the United States to keep the Second Division in the Middle East in anticipation of the Allied invasion of Europe. In contrast, many New Zealanders perceived the Japanese as a greater threat to New Zealand and thought the Government should follow Australia's policy and bring the Division back to fight alongside the Allies in the Pacific region. However, Fraser's primary concern was the acute shortage of available manpower⁵⁸.

Churchill thought it desirable that 2NZEF should remain in the European Theatre of the war, and deployed praise and jingoistic

⁵⁵ Baker, p.407.

⁵⁶ R.D. Munro, 'Alec Munro and Son: Book Two', Unpublished, Upper Hutt, 1998, pp.196-7. Ray Munro was one of the first on the scene immediately following the accident, being stationed at Trentham Army Camp nearby. Being a career railwayman, Mr Munro took a keen interest in what caused the November accident.

⁵⁷ Telegram 176, The Prime Minister of New Zealand to the Prime Minister of the United Kingdom, 19 November 1942, *Documents, Relating to New Zealand's Participation in the Second World War 1939-45, Volume II*, pp.142-44.

⁵⁸ Ibid. See appendix to telegram 222, p.190.

rhetoric to argue that the New Zealand Division should stay in North Africa. Fraser was reluctant to make a decision without the full backing of Parliament and deferred the matter until later in May 1943⁵⁹.

In a telegram to Churchill on 29 April 1943, Fraser informed the British Prime Minister that:

I have referred already to my own difficulties, but should like to stress the following considerations. According to the present estimates of the manpower situation, the essential facts of which are contained in a separate note, it will not be possible for New Zealand to maintain divisions both in the Mediterranean and in the Pacific beyond the end of the present year⁶⁰.

Fraser faced the unenviable task of informing Churchill that it was the decision of New Zealand's parliament to replace twenty percent of the longest serving personnel of the Second Division⁶¹. The Railway Companies were among those to be returned to New Zealand. No doubt, the decision to bring the Railway Group back to New Zealand would have been heavily influenced by the acute manpower problems being experienced by the domestic railways. Fraser cabled Churchill:

On account of the heavily increased commitments on industrial manpower to meet the requirements of the Allied forces in the Pacific..... While every effort will be made to meet the overseas demands up to the end of the year, beyond that date the maintenance of two divisions, in addition to Air Force and Naval requirements, will not be possible. Indeed, the question must then arise in the most acute form as to which division is to provide further reinforcements for the other⁶².

⁵⁹ Ibid., Telegram 211, p.183.

⁶⁰ Ibid., p.189.

⁶¹ Ibid., p.190.

⁶² Ibid.

This clearly shows that Fraser was aware that New Zealand's industries could not continue to operate at the existing levels if he sent the number of troops requested by the various Allies. Therefore it came down to either fielding two large, well equipped divisions, and strip New Zealand's industries for manpower, or to maintain two smaller divisions and sustain the country's economical viability.

Following Fraser's initial proposal as to the future of the Division and its ancillary units, many telegrams were exchanged between the New Zealand and British governments. In an effort to clarify the issue, and discuss the viability of maintaining a New Zealand presence in North Africa, Fraser dispatched the Minister of Defence, Fred Jones, to meet with Churchill on 17 April 1943. Following his meeting with Churchill, Jones travelled to Tunisia in late April 1943 to hold discussions with Freyberg and to inspect the troops⁶³. The task for Jones was to report to Parliament on what should be done with the long-serving men of 2NZEF and to plan for their eventual repatriation to New Zealand. As the men from the Railway Group were amongst the first and second echelons, their return was inevitable. In his report, Jones makes the following observation:

At the present moment the Railway Construction and Maintenance Group is really employed only part time, and the Railway Operating Group is not employed.... It is for consideration whether the Government should now reduce overseas commitments by not providing relief's (sic) for this (sic) personnel. The two Groups would thus disappear⁶⁴.

Despite the reduction in actual work for the Railway Group, British military commanders still included it in their strategic planning. Brigadier Stevens advised the New Zealand authorities of British intentions after receiving a telegram from General Headquarters on 3 May⁶⁵. The telegram advised Stevens that General Headquarters, Middle East, proposed to use the Railway Construction and

⁶³ Ibid., p.228.

⁶⁴ Ibid., p.231.

⁶⁵ Ibid.

Maintenance Group and the Railway Operating Group in forthcoming operations, and inquired whether there would be any objection to their employment. Fraser declined to make a decision until consulting Parliament. In a cable sent to Headquarters, 2NZEF, on 5 May, Fraser informed them that the War Cabinet felt 'that no decision should in the meantime be taken on the breaking up of the units as suggested in Mr Jones (sic) message of 30 April until Parliament has come to a decision on their use in future operations'⁶⁶.

Fraser was also in contact with Freyberg, keeping him informed of what was being discussed between the respective prime ministers. Freyberg, like Churchill, was told that further use of the Railway Group was for consideration by Parliament after 19 May. In response to Fraser's cable, Freyberg made the suggestion that one Construction and Maintenance Company and Operating Company return to New Zealand while the remaining companies were retained in the Middle East for General Headquarters to use at their discretion⁶⁷. Freyberg also suggested that surplus railwaymen from the construction companies could be drawn upon and used as 'reinforcements for Divisional Engineers'⁶⁸. In November 1940, Freyberg had prudently cautioned the New Zealand Government about increasing the number of non-divisional engineer units⁶⁹. Headquarters 2NZEF thought that the 'government was overdoing it in this field, and that the manpower of the country would be unduly strained thereby'⁷⁰. At this stage, the Division had not even been in action, and the future of where they would serve was still uncertain.

Furthermore, he made the suggestion that surplus engineers, including railwaymen, could be retrained as infantry soldiers to help reinforce the Division⁷¹. Fraser pointed out that many of the

⁶⁶ Ibid.

⁶⁷ Ibid., p.239.

⁶⁸ Ibid., Telegram 268, p.243.

⁶⁹ W.G. Stevens, *Problems of 2 NZEF*, Wellington: War History Branch, 1958, p.32.

⁷⁰ Ibid.

⁷¹ Documents, Volume. II, p.239.

railwaymen were highly skilled and had also been amongst the first to volunteer for overseas service, and therefore deemed them too important to risk as fighting soldiers⁷². Fraser stated: "Actually their return to New Zealand might be advisable owing to the present very serious manpower difficulties which the Railways are experiencing at a time when petrol and rubber restrictions have thrown large additional burdens upon them"⁷³.

Despite the suggestions made by Freyberg and the planned utilisation of the British military planners, Parliament decided to disband several non-divisional engineer units, the Railway Group among them, and return them forthwith to New Zealand⁷⁴. In his telegram to Britain's Secretary of State for Dominion Affairs, Fraser remarked:

His Majesty's Government in the United Kingdom will be aware from earlier messages that this Dominion is facing serious difficulties through the exhaustion of its manpower, both in respect of fulfilling its overseas military commitments and the needs of essential industry. In particular, certain key industries with depleted staffs, such as transport, engineering, and construction, are becoming overtaxed in their efforts to cope with the demands of the demands of the United States Forces in this area.... His Majesty's Government in New Zealand would be grateful if you would advise the War Office of the position and inform them of the necessity for the gradual disappearance and ultimate withdrawal of the following non-divisional units, which up to the present have been under the control of General Headquarters:

Railway Construction and Maintenance Group
 Railway Operating Group
 18th and 19th Army Troops Companies
 21st Mechanical Equipment Company⁷⁵

⁷² Ibid., Telegram 267, p.243.

⁷³ Ibid.

⁷⁴ Ibid., pp.246-7.

⁷⁵ Ibid.

Despite having been involved in the desert campaign since 1940, the men from the railway units felt their expertise and presence were still essential to the war effort. Their obvious disappointment at being disbanded was summed up in a letter sent from Lieutenant-Colonel Smith, Officer Commanding 13 Railway Construction and Maintenance Group, to Brigadier Stevens at Headquarters 2NZEAF. Smith raised the point that when the war was eventually taken into Europe, the New Zealand fighting troops would be best provided for their lines of communication by fellow New Zealand railway troops. He stressed the point that his unit had more than adequately proven itself in North Africa, and that adaptability and resourcefulness would be essential in the 'rain lands of Europe'. Furthermore, he claimed that New Zealand railway troops were more capable than their British counterparts. Such was his desire to keep his company intact that he maintained that: "There is no evidence to show that skilled Railway Construction men are required in New Zealand in civil capacity, nor does it appear likely that they will be required in any pacific (sic) military operation"⁷⁶.

Stevens replied sympathetically, but stated that very little could be done to retain a military railway presence in the Middle East⁷⁷, particularly as Freyberg had received instructions by this time to repatriate the railwaymen to New Zealand. There was a genuine feeling of sympathy amongst the senior officers of Headquarters 2NZEAF over the manner in which the disbanded units were informed⁷⁸. While they realised that their repatriation to New Zealand was justified, they understood the attitude felt by the officers and men in question, 'who by that time had acquired a pride in their units and their work'. 'The action left a touch of resentment in the remaining personnel for some time afterwards'⁷⁹.

⁷⁶ All references in this paragraph are cited from a letter sent by Smith to Stevens on 29 May 1943. Letter held by School of Military Engineering Museum, Linton Army Camp.

⁷⁷ Letter from Brig. W.G. Stevens to Lt.-Col. R.T. Smith, 26 May 1943. School of Military Engineering (SME), Linton Army Camp.

⁷⁸ Stevens, pp.134-5.

⁷⁹ Ibid.

In the interim period, the railwaymen were required to carry out mundane work in the Suez Canal region, a task that was not accepted with enthusiasm. Smith wrote: "The most serious feature, and one on which I ask reconsideration, is the matter of condemning us to unimportant maintenance work outside the active operations field, and the proposal to let the Group die a lingering death"⁸⁰.

However, these were the views of officers, and not necessarily of the enlisted men. The Railways Department had convinced the government that men from the railway companies could better serve the war effort by remaining in New Zealand. Therefore, they were disbanded and allowed to return to their civilian railway occupations after their leave period ended. The total projected gross number of furlough troops to be returned to New Zealand, was predicted to be 2600 men, 713 of them railwaymen from various units⁸¹.

While men from the railway companies were to be retained, other railwaymen serving outside of the Railway Group became reluctant to return overseas as they learned of able-bodied grade-one men working in reserved occupations earning high wages. Consequently many of those not deemed essential to remain in New Zealand refused to return to the war after their three month leave had expired, at least until the reserve men had been called up. Many of those who refused to return had their pre-war railway positions revoked⁸² and their superannuation payments stopped by the Government⁸³. It had been agreed prior to railwaymen enlisting that their railway superannuation would be maintained by the Government during their absence. However, despite having their former railway positions denied to them, these men were to be

⁸⁰ Letter from R.T. Smith to Brig. Stevens, 29 May 1943. SME Linton Army Camp.

⁸¹ S.H. Capon, 'The Hamilton Furlough Mutiny: An Analysis of the Implementation and Consequences of the 1943 Furlough Scheme', MA Thesis, University of Waikato, 1986, p.79.

⁸² R 501/70/371, Memorandum sent to Casey by H.R. Bockett, Controller of Manpower, 13 April 1944. National Archives, Wellington.

⁸³ Ibid., Letter sent to the Chief Engineer from Casey.

utilised in 'essential industries of high priority' but not to be 're-employed in the Government in the meantime'⁸⁴.

The increased level of rail traffic and decreased operational maintenance suggests that by allowing the formation and dispatch of so many railwaymen, the New Zealand government made a grave error of judgement. However, the New Zealand Government could not have foreseen the war in the Pacific developing with the subsequent arrival of American soldiers and the strains this would place on the country's railway system. Furthermore, New Zealand was placed in the position of trying to appease both major Allies, Britain and the United States. Pressure to retain men in the European theatre of war, while attempting to assist the Americans in both the Pacific and in New Zealand, placed enormous strain upon this country's domestic infrastructure. It is a measure of the practical thinking of the wartime Labour Government that they decided to repatriate the Railway Group from the Middle East despite what British military planners had in mind for them. While their return did not have a monumental transformation upon the railway scene, it did serve to ease the pressure which had increased so dramatically since 1941.

84 R 501/70/371 Casey-Bockett memorandum.

Conclusion

For as long as humanity has taken up arms, the victor has usually been the one who was better provisioned and supplied. Even short conflicts rely upon reliable supply if ground is to be held or military objectives achieved. Therefore transport became the linchpin of success, particularly when long distances were involved. By the end of last century, railways had become the most significant method of military land transport.

The advent of motor transport posed a challenge to the primacy of railways, but they remained of central importance for rapid haulage of reinforcements, supplies and heavy war material over long distances. This was particularly the case in the North African Campaign of 1940-43. Only a single coastal road linked Italian occupied Libya with Egypt. Apart from the more temperate coastal region, the terrain west of Alexandria was extremely hostile, with little water or vegetation.

With little exception, the war in North Africa was to be fought in the relatively narrow confines between the desert and sea, an area usually only 160 kilometres wide. However, as narrow as this front may have been, it was extremely long, extending nearly 2000 kilometres westward. Both the comparative narrowness of the front and the long distances to secure rear areas enhanced the value of the railway. Therefore, as the fighting progressed westward, it was a logical move to extend the railway as well.

Traversing desert roads was incredibly hard on motor vehicles, as sand and badly paved areas ensured rapid deterioration of engines and tyres. In comparison, a locomotive, along with rolling stock, can make numerous long journeys before requiring major repairs or maintenance.

In asking the New Zealand government to raise rapidly a specific composite railway 'task force', the British Government showed great foresight. Britain could thereby retain more of its own railway

personnel for domestic use, while maintaining and even improving railway systems abroad, particularly where Britain had strategic interests. Whether by design or good fortune, London chose railwaymen from the appropriate country. New Zealand during the 1920s and 1930s was in the throes of developing its transport infrastructure, with massive public works schemes being undertaken. Workmen from both the Public Works Department and the Railways Department were well practised in road and rail construction, with all the necessary skills required in earth formation and building bridges.

The initial quota of men sought was filled within 48 hours of the recruitment notices being distributed. However, the New Zealand Government showed a distinct lack of foresight in allowing so many skilled tradesmen and railway operating staff to resign and join the military. In the latter war years, this shortage of railway personnel meant that those remaining worked inhumanly long hours, and possibly contributed to several railway accidents.

The contribution to the North African and Middle East Campaign made by the Railway Group was extremely significant. Egyptian State Railways operated a railway system which was an amalgamation of European and British locomotives and rolling stock, some of which was almost obsolete. Moreover, the prevalent attitude of their neutral Egyptian counterparts was unenthusiastic. Nevertheless, the railwaymen collaborated with the ESR personnel, and soon had more trains running and the railway system operating efficiently. The construction companies extended crossing loops in anticipation of the larger trains which would soon be run, and carried out any general repairs as required by the railway.

Military trains began to increase in tonnage, and were frequently operating at peak capacity of 1300 tons, with over 4000 tons per day being delivered to the railheads. When the Axis forces were in possession of the railway, they could only operate 250 ton capacity trains. Many of the trains operated by the New Zealanders carried armoured fighting vehicles which otherwise would have had to be transported by road transport or under their own power. The saving of both fuel and wear by being railed to the front was

enormous. Furthermore, the railway was extremely reliable. Provided that supplies were available at the Suez ports, trains could keep the units in the field provisioned regularly, with minimum delays.

One of the most significant advantages of possessing the railway, was being able to rail fresh water deep into the desert and store it in reservoirs reasonably close to the fighting formations. Although this water was strictly rationed to the troops, it saved them having to scour remote areas to find wadhis or desert oases.

Without doubt, many wounded soldiers survived due to the efficiency of the ambulance trains which were always given priority on the line. From the first aid dressing stations, the wounded could be transported in relative comfort to hospitals in the rear. Had the injured been forced to endure arduous journeys in motor ambulances, casualties would almost certainly been higher.

Such was the value placed upon the railway, British military planners requested the New Zealanders to further extend the line. During this busy period, new track-laying records were set, with up to four miles of track being constructed in one day. In total, the railway construction companies built 275 miles in 265 days. In constructing the railheads, new, large circular yards with relevant sidings were designed, which made it difficult for the enemy to bomb concentrated targets.

Track construction was not only limited to the desert, a gang of sappers travelled to Safaga, a Red Sea port, to build a rail link from there to the Sudanese railway at Qena. Despite the often primitive conditions and tools, they completed accurate surveys for proposed railway lines and port facilities. Elsewhere, men from 9 Railway Survey Company were engaged in surveying in Greece and later Iran, Iraq and Eritrea. These men were probably amongst the most travelled of New Zealand servicemen during the war.

The railwaymen were used extensively throughout the Middle East, with sections of 17 Railway Operating Company being dispatched to Palestine to operate the narrow gauge Hejaz Railway during the

campaign against the Vichy French forces. The New Zealand railwaymen were renowned for their adaptability and resourcefulness. Being used to working in remote areas in a self-sufficient way meant these men could design and repair vital machinery with whatever tools and parts were available. These tasks could be carried out in rudimentary conditions, as the men were accustomed to 'having to make do'.

When Benghazi was first captured, railwaymen were flown there to operate the narrow gauge railway which had been built by the Italians to ferry supplies from the port area. Railwaymen also volunteered to act as lightermen and ferry supplies from ships to shore at Tobruk and Alexandria. Each day while at Tobruk, the railwaymen manhandled in excess of 900 tons of stores. In contrast, Rommel's watersiders could only manage to unload 600 tons per day. By using railwaymen as watersiders, the Royal Navy did not have to divert sailors away from important coastal shipping duties.

Another notable feat of the railwaymen was the removal of nearly all the rolling stock and locomotives from the desert extension during the retreat of 1942. This denied the enemy the ability to move supplies from distant Tripoli to the El Alamein positions. This improved the chances of Montgomery's counter offensive.

Such was the value in which the senior military planners held the Western Desert railway and its extension, that the former General Officer Commanding all British forces in North Africa, General Claude Auckinleck wrote in a letter of appreciation to the Railway group: "I cannot sufficiently express to you and your staff and the Railway construction and Operating Companies, labour and transport, my deepest appreciation of your wonderful and unceasing work. Without your and their efforts the Advance of the army could not have been maintained"¹.

Following the British counter offensive at El Alamein in late 1942, Montgomery is reported to have said: "Now it's railways versus

¹ Aickin, F.W., 'Desert Railway', unpublished personal account of former Officer Commanding 16 Railway operating Group. (No date or page numbers given).

Rommel"². It was now a matter of delivery to individual units rapidly at a increasing distance from that base area. The railway companies performed this task excellently.

Nevertheless, these operations were not without their problems. Water shortages and low quality coal meant that engine crews had to adjust their train handling methods to suit, all the while operating machines that required frequent attention in hostile desert conditions. Minor sabotage carried out by anti-British elements did not usually hold rail traffic up, but again constituted a concern.

As it was prudent to operate trains at night, many of the railwaymen were forced to rest during the day when temperatures rose dramatically. This made making sleep deprivation a major concern. The railwaymen worked long and arduous shifts, with engine drivers often being on duty for up to four days at a time in order to keep the railway operating and their fighting colleagues well supplied.

Construction troops found themselves building a railway line using assorted rails, sleepers and sundry equipment. As with all troops serving in North Africa, the railwaymen suffered the privations of desert life, including flies, heat, cold, repetitive food, suffocating sandstorms and a shortage of the warm brackish water they were forced to survive upon.

While the railwaymen usually enjoyed harmonious relations with the local people, they did have problems with some of the contracted Egyptian labourers that initially assisted the construction gangs. Tribal infighting resulted in the Egyptians being replaced by the more disciplined Indian pioneer troops.

Possibly the single greatest problem was aerial attack. The desert offered little protection from marauding enemy aircraft, with trains, railway marshalling yards and construction troops receiving little or no warning of impending attacks. With the aid of the RAF, the

² Ibid.

railwaymen devised methods to try and thwart aerial attacks by attaching barrage balloons to trains to constructing realistic decoy rail yards which dramatically reduced the number of bombs actually dropped on the intended targets. The enemy also tried to disrupt rail traffic by sending commandos ashore from submarines to mine the track. However, the damage inflicted was always promptly repaired, and proved to be no more than a nuisance to the railwaymen.

The Railway Group, who were deployed at the discretion of the Director General of Transportation, were often dispatched at very short notice to various destinations. 9 Railway Survey Company was particularly affected. This presented a problem as New Zealand Headquarters were not always informed, much to their annoyance. The men, however, were generally very enthusiastic about moving around.

The New Zealand Railways Department had a pre-war staff roll of 25,000. Of this number, over 26% left for war service. The combined strength of the Railway Group averaged around 1400 men, including a high proportion of maintenance and operating men. Therefore, with the arrival in New Zealand of American servicemen in 1942, New Zealand's domestic railway system was seriously understaffed. This severe shortage placed a great deal of strain on those still working for the Railways Department and the issue was debated in Parliament on numerous occasions. It soon became obvious that New Zealand economy could not afford to maintain the various military units in service without serious constraints on its primary producing industries.

Therefore, decisions had to be made in late 1942 as to which units could be returned to New Zealand. The personnel of the Railway Group were deemed essential to New Zealand's domestic war effort, and the Group was duly disbanded in March 1943 and arrived home in July 1943. This was a bitter blow for many of the railwaymen, as they felt their efforts had greatly assisted in the victory of North Africa and had expected to be employed in future theatres of war. Despite Freyberg's suggestion to the Government that some railwaymen be retained and similar protestations from

some of the Railway Group senior officers, the Government decided to bring the complete formation home to address the critical staffing shortages.

This effectively ended the existence of New Zealand's first and only specific military railway formation. Many of the returned men simply resumed their pre-war occupations. However, their contribution to the war effort was ongoing, with troop trains and freight still requiring rail transportation.

Despite the important contribution made by the Railway Group during World War Two, their exploits were overshadowed by those of the more high-profile fighting units, and did not receive many accolades from the Government. Nevertheless, the contribution made by the New Zealand Railway Group in North Africa and the Middle East can justifiably be listed as being one of the most significant achievements made by a New Zealand military unit in the war.

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