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OBSERVATION POSTS AND MAGAZINE AREAS: FURTHER NOTES ON WELLINGTON MILITARY SITES

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Military sites, particularly fortifications, have been a major focus of historical archaeological studies in New Zealand (Smith 1990). In recent years, interest in military sites has extended beyond the redoubts and stockades of the New Zealand Wars to encompass the coastal fortifications of the late nineteenth and early twentieth centuries. Coastal defences are works 'designed to combat warships attempting to raid or bombard shore installations' (Hogg 1988:117). Interest has also spread to a range of different sites constructed during and between the two World Wars including both coastal and anti-aircraft defences, military camps, and magazines. An account of Wellington's coastal defence works from the 1880s to the 1940s has been published (Walton 1990) but since then considerable further information has come to light. Some of this was incorporated in a paper for *New Zealand Historic Places* (Walton 1992) but, given the recent public interest, and given that the topic is still unfamiliar to many archaeologists, a further follow-up to my original 1990 article is appropriate.

The impetus for work on recent military sites is coming from a number of different sources. Amongst archaeologists, site management requirements have been a significant factor. Such requirements lie behind Coster and de Lambert's (1987) work on the World War II magazine area on Motutapu Island, behind Brassey's work on gun emplacements and other military sites on Motutapu Island, and behind Veart's (1990) on the fort at North Head. Veart's investigation provided the first detailed historical and archaeological study of a coastal defence fortification in New Zealand. The work on the Wellington fortifications (Walton 1990) also arose from management needs and was intended to provide an inventory of sites. On the other hand, not all current work is for management purposes and Auckland's early coastal defences are the subject of a detailed study by John Mitchell, a PhD candidate at the University of Auckland (see also Young 1992).

Historians have produced a number of publications dealing with recent military history, and considerable further material will be published in the near future. Much of this work is based primarily on an examination of archival material, and is concerned with the actual sites themselves to varying degrees. McGibbon's (1991) comprehensive study of the development of defence policy in the period 1840-1914 places the planning and implementation of coastal defence policy in the wider political and historical context and discusses the coastal defences around the the four main centres in general terms. **More site**

orientated in approach is a detailed study of Wellington's coastal defence fortifications being prepared by Major W. Fraser (N.Z. Army, Rtd). One notable study already available is Spyve's (1982) account of the military base at Mount Cook. This is a detailed documentary study focusing on a base which served a number of purposes, particularly in the area of administration and training. There is still a military base at Mt Cook but it occupies only a small part of the area involved in earlier times. The National Museum was built on part of the old base and was itself taken over by the military during World War II to provide extra space for administrative staff.

The amount of defence construction work undertaken during World War II both in Wellington, and throughout New Zealand, was particularly remarkable (Grattan 1948). Old bases were upgraded or extended and many new facilities commissioned. This work was done in spite of shortages of labour and materials, although many works became less urgent, and were reviewed or stopped, as the threat of attack gradually receded after 1943. Evidence of this programme of construction can still be seen in many parts of the country.

A detailed study of World War II air force bases and facilities is under way by G.H. Burns of Wanganui. There has also been considerable recent interest in the subject of United States Forces in New Zealand during World War II (Bioletti 1989, Bevan 1992). Bioletti (1989) provides a detailed listing of the facilities and installations associated with the U.S. Forces. The recording of what remains of all the World War II structures would represent a major task. Even restricting attention to the Wellington area, the task has proved a large one and has had to be based on recording selected sites.

Military sites in the Wellington area recorded to date are listed in Table 1 and their locations are shown in Figure 1. I begin the discussion with some further observations on some of the coastal and anti-aircraft defence sites covered in my earlier account (Walton 1990). I then discuss some sites and classes of site neglected in that paper. It is important to see coastal defence works in the wider context of defence facilities and installations generally. I have used archival sources sparingly. There is a considerable volume of archival material available but I have chosen to use this simply as a minor adjunct to field visits.

WELLINGTON'S COASTAL DEFENCES: FURTHER NOTES

Coastal defences required heavy and accurate weapons capable of breaching the armour of warships at long ranges (Hogg 1988:117). In the 60 years between 1885 and 1945, the range and accuracy of guns improved markedly necessitating the regular improvement of coastal defences, the construction of new emplacements, and the upgrading of the weaponry. New Zealand coastal defences of the 1880s and early 1890s were a mix of obsolete guns such as 64 pounders, which were largely useless against armoured warships, and newly-purchased heavy guns. The ranges of the guns were

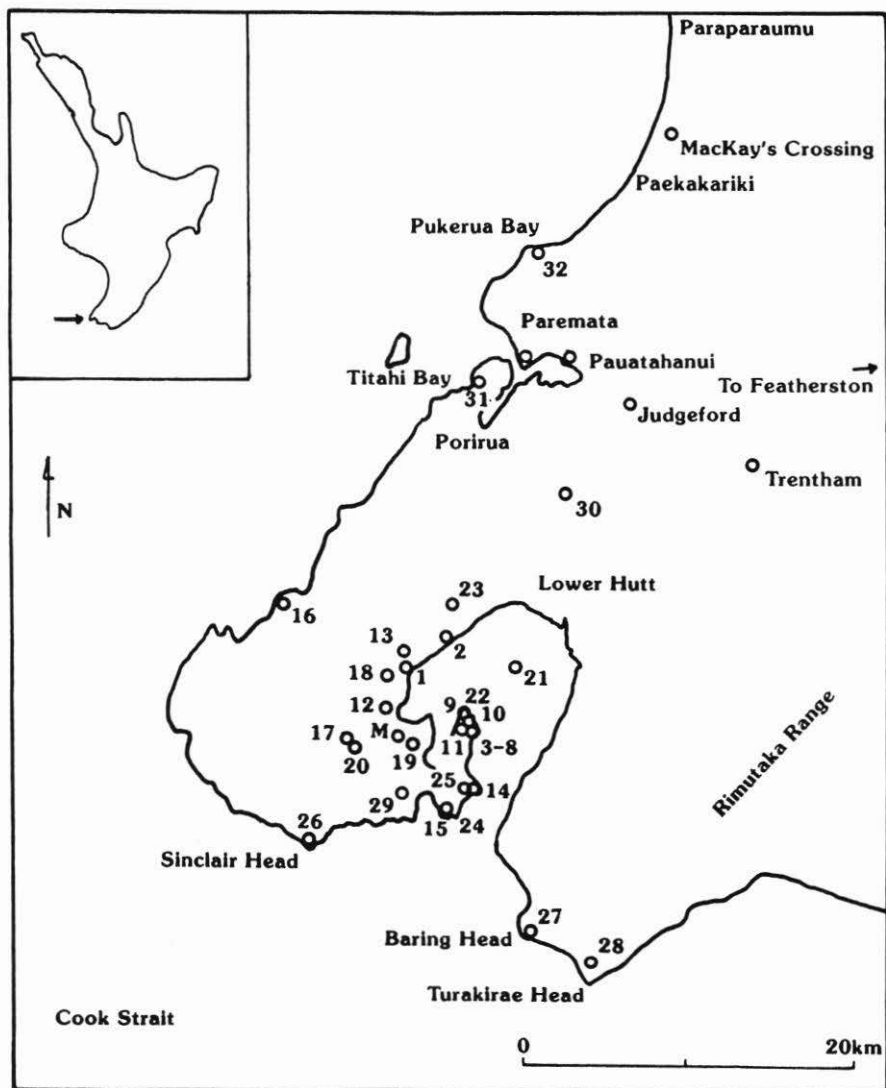


Figure 1. The Wellington Coast showing the location of sites. Numbers identifying sites correspond to those in Table 1. M=Mount Cook.

TABLE 1: RECORDED POST-1880 MILITARY SITES, WELLINGTON

Site	Site Number	Grid Reference
<i>1880s and 1890s</i>		
1. Fort Buckley	R27/159	597924
2. Fort Kelburne	R27/163	620940
3. Fort Ballance	R27/161	636885
4. Controlled mines observation post and ignition room (Gordon Point)	R27/193	636886
5. Gun Emplacement (Fort Gordon)	R27/180	636884
6. Searchlight Emplacement (Gordon Point)	R27/169	636884
7. Gun Emplacement (Gordon Point)	R27/170	636885
8. Gun Emplacement (Low Battery, Gordon Point)	R27/177	637886
9. Gun Emplacement (Point Halswell)	R27/167	629896
10. Gun Emplacement (Kau Point)	27/168	633891
11. Musket Parapet (Mt. Crawford)	R27/151	631886
12. Gun Emplacement (Botanic Gardens)	R27/166	580898
13. Kaiwharawhara Magazine	R27/198	591927
<i>Early 20th Century</i>		
14. Fort Dorset	R27/178	637847
<i>Mid 20th Century</i>		
15. Gun Emplacement (Palmer Head)	R27/171	620836
16. Gun Emplacement (Fort Opau)	R27/175	522969
17. Gun Emplacement (Wright's Hill)	R27/173	556886
18. Tinakori Hill A.A. Battery	R27/165	583918
19. Mount Victoria A.A. Battery	R27/160	598880
20. Brooklyn A.A. Battery	R27/164	566876
21. Somes I. A.A. Battery	R27/179	663924
22. Point Halswell A.A. Battery	R27/174	630895
23. Johnsonville A.A. Battery	R27/184	620964
24. Moa Point Radar Station	R27/172	616836
25. Beacon Hill Observation Post	R27/183	630847
26. Sinclair Head Observation Post	R27/182	535816
27. Baring Head Observation Post	R28/ 40	670762
28. Turakirae Head Observation Post	R28/ 41	705741
29. Mt Albert Position	R27/185	592848
30. Belmont Hill Magazine Area	R27/195	698034
31. Titahi Bay pillbox	R27/197	641099
32. Pukerua Bay pillbox	R26/259	689180

limited and the guns were concentrated on the Miramar Peninsula and guarded the channel into the harbour. There were also guns to protect the inner harbour. The 6 and 8 inch disappearing guns ordered in the mid 1880s were the major weapons until the early years of the 20th century, and continued in service in some cases into World War II. Disappearing guns sank into their pits for re-loading and were very well protected from enemy fire, but it was soon appreciated that this level of protection was unnecessary. When New Zealand upgraded its coastal defences before World War I, the guns allocated to Wellington were placed at Fort Dorset near the harbour entrance and, with their much greater range, they could engage warships in the harbour approaches rather than in the channel into the harbour. The guns at Fort Dorset were put in barbette¹ emplacements. There were further developments from the 1930s on when the Palmer Head, Fort Opau, and Wright's Hill Fortress were constructed. The guns could engage enemy warships in Cook Strait at very long range. By then, some form of overhead protection for the emplacements was considered necessary as they were vulnerable to air attack.

The following notes add to the earlier discussion of the sites at Point Gordon, especially Fort Ballance, and the other batteries of the same period at Kau Point, Point Halswell, and Fort Buckley. This is followed by notes on the 20th century sites including Fort Dorset, Palmer Head, Wright's Hill, and the anti-aircraft defences.

The central role played by a handful of people in designing and overseeing the construction of coastal defence works in the 1880s and 1890s means that forts of that period throughout New Zealand were built to similar designs, although often with interesting variations. There are also many parallels with the defence works built in the Australian colonies around the same time. Major Henry Caughtley was responsible for the design of Fort Ballance, Wellington's main fortification, as well as many of the other defence works of the mid-1880s. He left New Zealand in 1885, just as the construction programme was getting under way, and he was replaced by Lt. Colonel Boddam. Boddam had earlier worked on coastal defences in Tasmania.

Fort Ballance is only one of a number of emplacements intended to protect the channel leading into the harbour. It was the mainstay of the Wellington defences until the early years of the 20th century. Point Gordon, where it was situated, was also the site of an 8 inch emplacement (Fort Gordon), a 64 pounder battery (the lower battery), a 12 pounder battery, a searchlight emplacement, and the controlled mines observation and ignition room. The 12 pounder emplacement was constructed in the late 1890s and was one of a number of changes made around that period to upgrade the defences. The cluster of sites at Point Gordon was given an 'A' classification under the Historic Places Act 1980 in 1990. The army recently (April 1992) made available a team of men to empty filled-in gun pits and open underground structures at Fort Ballance. This was done under the direction of Major W. Fraser (N.Z. Army, Rtd.). Some old tracks were also cleared and some of the different areas on

Point Gordon opened up. It is widely hoped that eventually the sites on Point Gordon will be given historic reserve status.

A number of features at Point Gordon were not positively identified in my 1990 paper. The large half round emplacement (R27/169) at Point Gordon has since been identified by John Mitchell and Major Fraser as an electric light (searchlight) emplacement. The feature dates to the early 1890s and is very unusual: no other examples are known in New Zealand and even overseas counterparts now appear to be extremely rare. It is likely that this emplacement was the scene of an accident in August 1899. An old searchlight mounting was being demolished with explosives when the accident occurred. Three men were killed and one severely injured in an explosion (Spyve 1982:180-181).

The controlled mines observation and ignition room (R27/193) was in a subsurface, bomb-proof structure at the northeast corner of Fort Ballance. The structure is in good condition. I had initially thought that the mines were controlled from a structure (R27/170) on the forward slopes below Fort Ballance but this has now been identified as a 12 pounder emplacement constructed in the late 1890s. It should be noted that the mine field planned for the channel off Fort Ballance was to be laid only in the event of war and was not a part of the peacetime defences - a point left ambiguous in the earlier discussion.

On the ridge behind Fort Ballance a large block of concrete is now the only trace of a set of unidentified structures which once stood there. Aerial photographs taken on 13 January 1938 (SN 70 A/2-3) do not show the structures clearly enough for them to be positively identified. The position has a commanding view over the harbour entrance and channel and it is possible that the structure was intended to control the gunfire. A warship was a moving target and instruments had to locate and track the target, pass the information to the guns, and direct their fire (Hogg 1988:117). Each battery had its own observation and fire control post.

Two 4 inch guns were emplaced in the old 12 pounder gun position during World War II. Exploration of the immediate area has revealed the remains of a number of minor features belonging to the World War II period. These include depressions lined with corrugated iron and sometimes containing concrete pillars: the latter presumably intended to support range finding instruments.

A large terrace was cut at the rear of Fort Ballance to house barracks during World War II. Additional accommodation was provided on the flats below the fort. Some parts of Point Gordon are still overgrown by vegetation, and further minor features may well be hidden there, but most of the major extant field remains have now been identified.

Further visits to the 8 inch battery site (R27/168) on nearby Kau Point have located a second gun pit. This is a small pit intended for a Q.F. (Quick Fire)

Hotchkiss or Nordenfeldt gun. The pit is half round and there is a small, roughly 3 x 3 m, concrete chamber, presumably the magazine, cut into the spur behind and entered through a door to the rear of the pit. The pit appears to have been used, not as a gun pit, but as the battery observation post. This is suggested by a concrete pillar in the front of the pit which would have been used to support range finding or other instruments. The names of other posts are painted in a regular fashion around the walls of the chamber at the rear of the pit as if it were also a communications post.

It was suggested in my earlier paper that the Point Halswell position had been substantially destroyed by the construction of the Massey Memorial but subsequent investigation has shown otherwise. With permission from the Massey family and the Department of Internal Affairs, John Mitchell and I inspected the interior of the memorial on 3 March 1993. The gun pit for the 8 inch disappearing gun has been lined for use as a crypt and the adjacent artillery stores and magazines, through which there is access to the gun pit, have been left intact. The memorial was built over the gun pit and its magazines. The memorial was classified 'B' under the Historic Places Act 1980 in 1984 but the relevant file (NZ Historic Places Trust 12018-006) suggests that the earlier military history of the part of the monument below ground level was not considered in the assessment made by the Trust. Exploration of the area immediately around the monument has not turned up any remains of the battery observation post nor the gun pit for the secondary armament. The concrete foundations on the terraces behind the monument are believed to be of World War II vintage and were probably associated with a harbour defence boom that was in place between Ward Island and Point Gordon.

Further exploration at one of the two surviving emplacements on the inner harbour has also turned up additional features. At Fort Buckley part of the palisade at the rear of the fort has been found lying on the ground. On a path cut into the side of the hill and leading up the fort are the remains of a gate. Fort Buckley was one of the first forts completed, but it housed obsolete 64 pounder guns and was abandoned in the early 1890s after only a few years of service. Nearby, in the valley, is a powder magazine built in 1879-80 (Bremner 1984). The magazine (R27/198) was comprised of two stone buildings each 50 feet by 25 feet. Two corrugated iron sheds were added about 1900. The army left the site in 1921. One of the stone buildings remains, in a damaged and dilapidated state, but the other was largely demolished to make way for a factory in the 1980s and it now exists only as some lengths of stone wall. The Kaiwharawhara magazine replaced an earlier one at Mt Cook which could only be serviced by carting explosives through the town.

Fort Dorset became Wellington's main fort in the period from just before World War I to the 1930s. Two 6 inch Mk VI guns were installed there. The 6 inch battery and its observation and fire control post occupied a high point overlooking both the channel and the approaches to the harbour entrance (Fig. 2). The ridgeline was extensively re-shaped. The gun pits were originally open

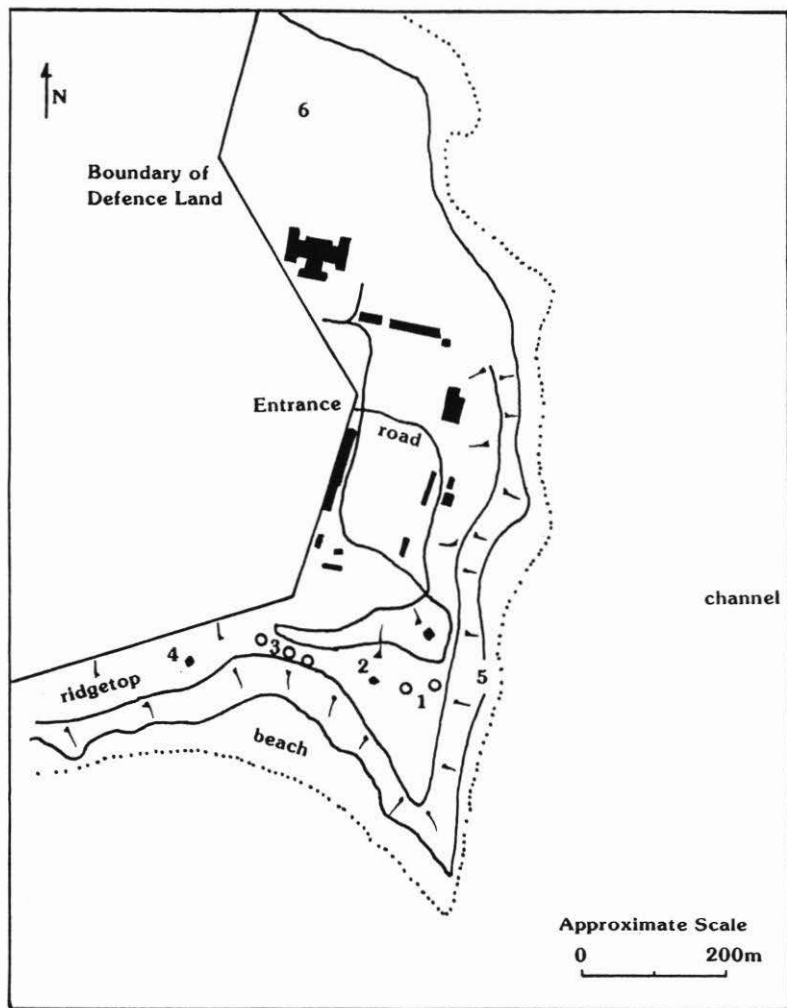


Figure 2. Fort Dorset in January 1938 showing the location of batteries, observation posts, buildings, and roads. 1 = 6 inch battery; 2 = 6 inch battery fire control point; 3 = three gun emplacements for smaller calibre guns; 4 = battery fire control point. Other areas mentioned are: 5 = gun emplacements on shoreline and 6 = the lower playing field. Drawn from aerial photograph SN70 A/9.

(McGibbon 1991 reproduces a photograph of the guns in the 1930s facing page 178) but in the 1940s concrete shelters similar to those surviving at Fort Opau were constructed over both gun pits for added protection. Three emplacements for smaller calibre guns were added in the 1930s and these occupied the adjacent saddle to the west of the main battery. The battery observation fire control post occupied a high point still further west. A third battery was later installed at the base of the ridge below, and to the east of, the main battery position. This position was right on the shoreline and looked out directly over the channel. The rest of the facilities developed on the flats below the ridgeline. There were few buildings at the base in the 1930s, but the 1940s saw many new buildings added.

The 6 inch gun emplacement, which was built to the same design as one which still survives at North Head in Auckland, was destroyed some 20 years ago. The associated observation and fire control post survives, however. The other gun emplacements, and their observation posts, are intact although they are in varying states of disrepair. Excavations in 1992 by Science and Research Division, Department of Conservation, looking at coastal stratigraphy and prehistoric occupation uncovered a thick and extensive deposit of rubbish some 40 years old which had been used to build up the ground under the fort's lower playing field. The base has been vacated by the army and currently awaits sale.

Further exploration of Palmer Head (R27/171) has failed to turn up any additional surface remains associated with the gun emplacement. The location and general layout of the installation is shown on survey plan S.O. 25712 (1963) not long before the site was bulldozed. The site originally mounted two 6 inch Mk XXI guns but a third gun was added during World War II. The position of the emplacement is marked by a large area of bare greywacke bedrock. It is still not clear how much of the underground part of the installation remains intact.

It is just over 50 years since the construction of the fortress on Wright's Hill began. This was designed to hold three 9.2 inch guns, although only 2 were ever mounted. The design of the fortress is similar to that at Stony Batter (S10/362) on Waiheke Island which was built at the same time. The Wright's Hill Restoration Society began emptying one of the filled-in gun pits in March 1993 as part of its programme to restore and open up the fortress to the public. The Society also hopes, in the long term, to complete and publish a history of the fortress (*Evening Post* 27 March 1993, 24 April 1993).

A further heavy anti-aircraft battery site (R27/184) has been identified from documentary sources but the site, at Johnsonville, is now under housing. This battery was the last one completed and mounted two 3.7 inch heavy anti-aircraft guns (the five other batteries each contained four such guns). This brings the number of heavy anti-aircraft emplacements identified to six and there are substantial field remains of three of these. A perusal of the file on 'AA Defences

Wellington' (AD 12 25/2/3) indicates that six heavy anti-aircraft batteries were constructed in the Wellington area and that these were supported by numbers of light anti-aircraft guns and searchlights around the city, and around the port in particular. The light anti-aircraft guns were mounted in temporary positions and no traces of these positions have survived.

During World War II pillboxes were constructed at many potential landing sites around the New Zealand coast. In the Wellington area, pillboxes at Titahi Bay (R27/197) and Pukerua Bay (R26/259) have survived.

OBSERVATION POSTS

Observation posts which were associated with gun emplacements were noted in my earlier papers. As the ranges of guns increased, there was a need for more remotely-situated observation posts. By World War II, there was a network of posts around Cook Strait. The posts were an important part of the coastal defence system as they provided essential information on enemy movements. The advent of radar in the early 1940s further improved surveillance. Most of the posts are in rural areas and this has helped substantial remains to survive. One post, Palmer Head or Moa Point (R27/192), was mentioned in my earlier paper but to this can be added Sinclair Head (R27/182), Beacon Hill (R27/183) near Fort Dorset, Baring Head (R28/40), and Turakirae Head (R28/41)(Fig. 1). The posts were abandoned and stripped of anything usable after World War II but most of the concrete structures and foundations are still in place. Plates 1 and 2 show the Palmer Head (Moa Point) Observation Post/Radar Station in 1945 and 1991.

Sinclair Head (Fig. 3 and Plates 3 & 4) has a concrete observation post (which is two thirds below ground level), a structure which appears to have housed radar, two above ground concrete structures, and three large cut and fill terraces containing concrete piles. The post was expanded after the outbreak of World War II and the changes of this period are documented to some extent on a file at National Archives (W1 23/497). This file mainly contains documents relating to contracts, completion of contracts, and obtaining financial authorities for the work. A number of contracts for new structures and for the maintenance and repair of existing structures were signed in 1940-41. A contract for the erection of a wireless hut, for example, was signed on 26 January 1940 and the contract was completed on 15 March for a final price of £380-3-5. This is about \$30,000² in today's terms. The contractor was a Mr H.W. Pearson. The archival information also helps identify the largest terrace as the site of a building housing a kitchen and living quarters. A contract for this building was signed on 5 February 1941. A plan of the proposed building, subsequently modified, has survived. The contractor was H.G. Field & Co and contract price was £1562-8-0 or about \$125,000 in today's values. The contract included provision for improvements to water supply, installation of a septic tank, and conversion of an existing building to a shower/ablution block. As part of the work a dam was built across a small stream and an overhead cableway



Plate 1. Palmer Head (Moa Point) Radar Station in 1945. War History Collection, Alexander Turnbull Library, Wellington, Reference F82286½.



Plate 2. Palmer Head (Moa Point) Radar Station in 1991.



Plate 3. Sinclair Head, 1992. One of the two concrete huts of similar design at the site.



Plate 4. Sinclair Head, 1992. Terrace with concrete piles: remains of the kitchen/living quarters built in 1942.

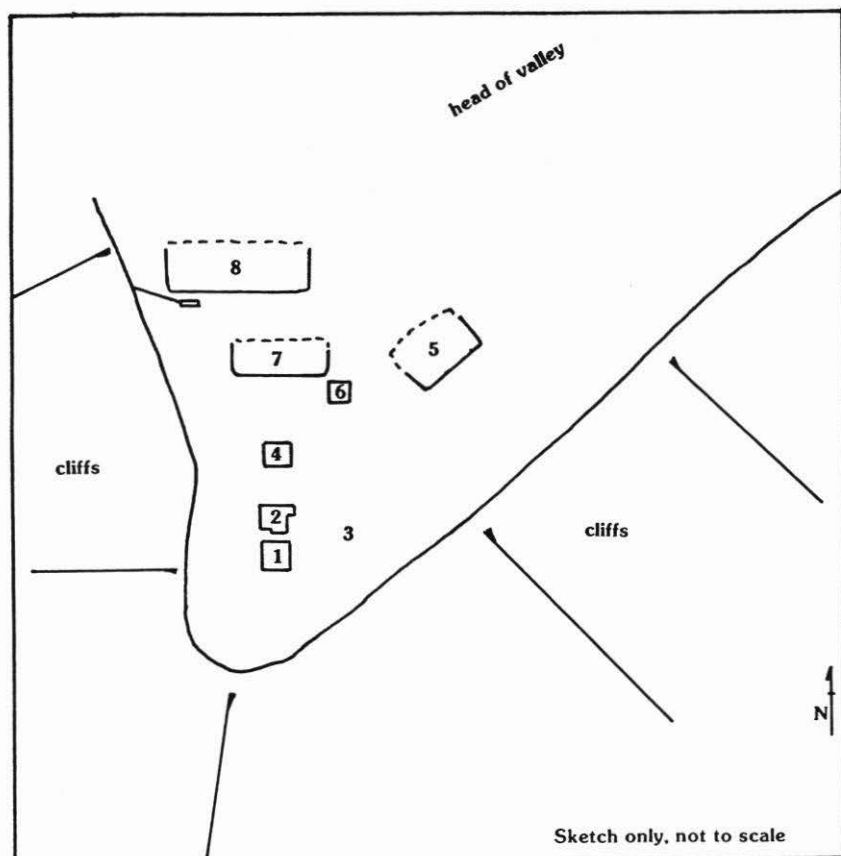


Figure 3. The Sinclair Head Observation Post: a sketch plan of the field remains. 1 = observation post (5 x 5 m); 2 = concrete foundations, probably radar installation; 3 = concrete foundations; 4 & 6 = reinforced concrete buildings (4 x 4 m and 4 x 3 m); 5 = cut and fill terrace (11 x 11 m) with concrete piles and other concrete features; 7 = cut and fill terrace (15 x 7 m) with rows of concrete piles; 8 = cut and fill terrace (20 x 9 m) with rows of piles and concrete steps.

from the beach to the site was installed. This work was substantially completed by early May 1941. The Beacon Hill, Baring Head, and Turakirae Head sites are smaller but contain structures of similar design to some of those at Sinclair Head.

Two unidentified reinforced concrete structures at Mt Albert (R27/185) may be part of the coastal or anti-aircraft defence system. The structures are

octagonal in shape and are about 2.5 metres across and 2 metres high. They are about two thirds below the surface. They are possibly observation posts or searchlight positions.

MILITARY CAMPS

A class of site entirely neglected in my earlier account was the military camp. Little work has yet been done on what now remains of the various camps in the Wellington area. The Trentham Military Training Camp was constructed at the beginning of World War I, played a major role in both World Wars, and is still used by the military today. By 1917 there were over 300 buildings on site (Lawson 1917a) and many of these were still in use in World War II. Many of the men were accommodated in tents. The large numbers passing through the camp necessitated the provision of additional space at nearby Maymorn, but this was only ever a satellite camp. The Trentham camp as it was on 19 May 1943 shows clearly on vertical aerial photographs (RN183/21-22). Buildings, vehicle parks, and tent sites are visible along with some earthworks, the most prominent of which is a section of trench on the slopes of Fern Hill, to the south of the camp.

The Featherston Military Training Camp in the Wairarapa (S27/078072) lies outside my chosen geographical area but, like Trentham, it played an important part of the military history of the Wellington area. Construction of the camp began in August 1915 and it was completed in January 1916 (Lawson 1917b). By 1917, the camp contained some 250 buildings including 90 double huts for the accommodation of officers, 16 officers' cubicle huts, 16 dining halls, 6 cook-houses, 31 buildings making up the hospital facilities, 17 shops, 20 stables providing accommodation for 500 horses, and over 40 buildings for administration purposes and stores. A railway siding serviced the camp. As at Trentham, many men were housed under canvas both at Featherston itself and at satellite camps. The camp operated in conjunction with the Trentham Military Training Camp to train infantry, but it also specialised in training artillery, signallers, and mounted troops. Thousands of volunteers and conscripts, including my paternal grandfather, passed through Trentham and Featherston before being sent on service overseas.

In 1942, the old Featherston camp, closed down after World War I, was converted into a prisoner of war camp. The camp shows clearly on vertical aerial photographs taken on 13 February 1943 (RN250/6-7). It was here that, on 25 February 1943, 48 Japanese prisoners of war and a guard were killed, and many others wounded, in the well-known 'Featherston Incident'³. Today (1993) the site is in rough pasture with shelter belts of young pines. There is scattered surface evidence of the camp roads and buildings including concrete piles and concrete pads. A dig for artefacts by Heritage Featherston recently produced a range of material (*Evening Post* 18, 21 January 1993). There is a small, well-kept reserve opposite the camp and this occupies one of the areas

which housed men in tents. The reserve is a memorial to the servicemen of World War I, and to the Japanese prisoners of war who died there in World War II.

There were a number of United States military camps in the greater Wellington area during World War II (Bioletti 1989, Bevan 1992). As Phillips (1992:5) notes, 'at any one time between June 1942 and mid-1944 there were about 50,000 American servicemen in camp in New Zealand'. The American troops were accommodated in camps near Auckland and Wellington. The three largest camps in the Wellington area were near McKay's Crossing (Camps McKay, Russell, and Paekakariki)(Bioletti 1989: Appendix E). In addition to sleeping accommodation, provision had to be made for such things as roads, paths, water supply, sewerage, electric power, and vehicle parks. There were also camps at Paraparaumu, Titahi Bay, Pauatahanui, Judgeford, and elsewhere. Anderson and Central Parks in Wellington City, and Hutt Park at Lower Hutt, were also used as camp sites. Space was also rented in a number of buildings in downtown Wellington as residential or office accommodation and for storage. A hospital being built at Silverstream for the New Zealand Army was handed over to the United States Navy for their use and was enlarged. After the war, it was handed over to the Wellington Hospital Board and it remained in use as a hospital until 1988. There was a comparable range of sites in the Auckland region (Bioletti 1989:Appendix E - like many other Aucklanders, I was born in an ex-United States Army hospital, and later maternity hospital, at Cornwall Park).

The camp on the Pauatahanui Inlet was visited during the 1990 NZAA Conference field trip. At one time something of the layout of this camp could be clearly seen in the paddock but a new road and housing has encroached on the site in recent years. There is a plinth adjacent to the nearby road commemorating the marines. A plinth was recently unveiled at the site of the camp in Titahi Bay (*Evening Post* 23 April 1993) and this was just one of a number of such ceremonies and exhibitions held in the Wellington area in 1992-3 to mark the 50th anniversary of the arrival of the First and Second Marine Divisions. There are rumours of large amounts of ammunition and equipment being buried at Camp McKay when it was evacuated but this has never been confirmed and to date there have been only isolated finds of material (Wellington Regional Council 1992). In addition to the U.S Forces camps, there was a N.Z. Army camp at Paremata situated in the Ngati Toa Domain.

MAGAZINES

Another class of site not covered completely in my earlier papers is magazines. Magazines were provided at gun emplacements as an intergral part of the installation but they are also found as unaccompanied features. Reference has already been made, for example, to the Kaiwharawhara Magazine. The Belmont Hill Magazine Area (R27/195) is another example. It was one of

the largest magazine areas constructed during World War II. Sixty-two concrete magazines were constructed at regular intervals along a well defined system of loop roads in hill country west of the Hutt Valley (Fig. 4). The roads encircle the broad ridges and the magazines are on terraces cut deeply into the slopes so that there are high scarps to the rear and sides and the magazines are isolated from one another in case of accidental explosions. In some places, dirt has been piled up in a bank for added safety. Only in one place, towards the north east corner of the complex, are magazines side by side and here they are separated by high banks of earth.

All 62 magazines were built in 1943-4 (AD 1/203/317 V1). In September 1942 the War Cabinet approved plans for the urgent construction of some 244 magazines nationwide. They were badly needed because ammunition was being stored in the open and was deteriorating rapidly. Of the 244 magazines, some 50 were to be built at Belmont Hill, making it one of the larger complexes. Although the magazines were designed for speedy erection, construction throughout New Zealand was much delayed by shortages of labour. Ten further magazines were built, to a different design, at Belmont Hill in 1944. A demolition area was added at the north east end of the complex in 1947.

The magazine structures at Belmont Hill come in two main forms:

- (1) The vast majority of the magazines, 52 in number, were built in 1943 and are known as 'Type P' magazines (AD 1/203/317 V1). They have concrete floors and flat reinforced concrete roofs. Much of the construction was done using precast reinforced concrete columns, beams, and slabs. The magazines produced are all similar in appearance even though they differ somewhat in size and shape. Most are oblong but some are quite broad, nearly square. The construction of the Type P magazines themselves cost £145,000 but a further £8500 was spent on site preparation and a further £32,00 on roading. The total cost was about £210,000 (AD 1/203/317 V2). This is roughly equivalent to about \$16.5 million today. The work was contracted to Certified Concrete Ltd and Fletcher Construction Ltd.

The form and layout of each magazine is tailored to its site. The shorter oblong magazines are usually sited at right angles to the road and there is only one entrance. The longer oblong magazines are usually sited parallel to the road and there is an entrance at either end. Each entrance has an associated loading dock in front. The oblong magazines have three rows of pillars in the interior. The nearly square magazines are usually sited at right angles to the road and have two doors in the front. They have five rows of pillars inside. In both oblong and nearly square magazines, there are regularly spaced vents along both the top and bottom of the side walls. One Type P magazine is unique. There is reference to this as a special magazine in the National Archives file (AD 1/203/317 V1) but there is no indication of its purpose.

Most of the magazines held explosive shells but two magazines at the

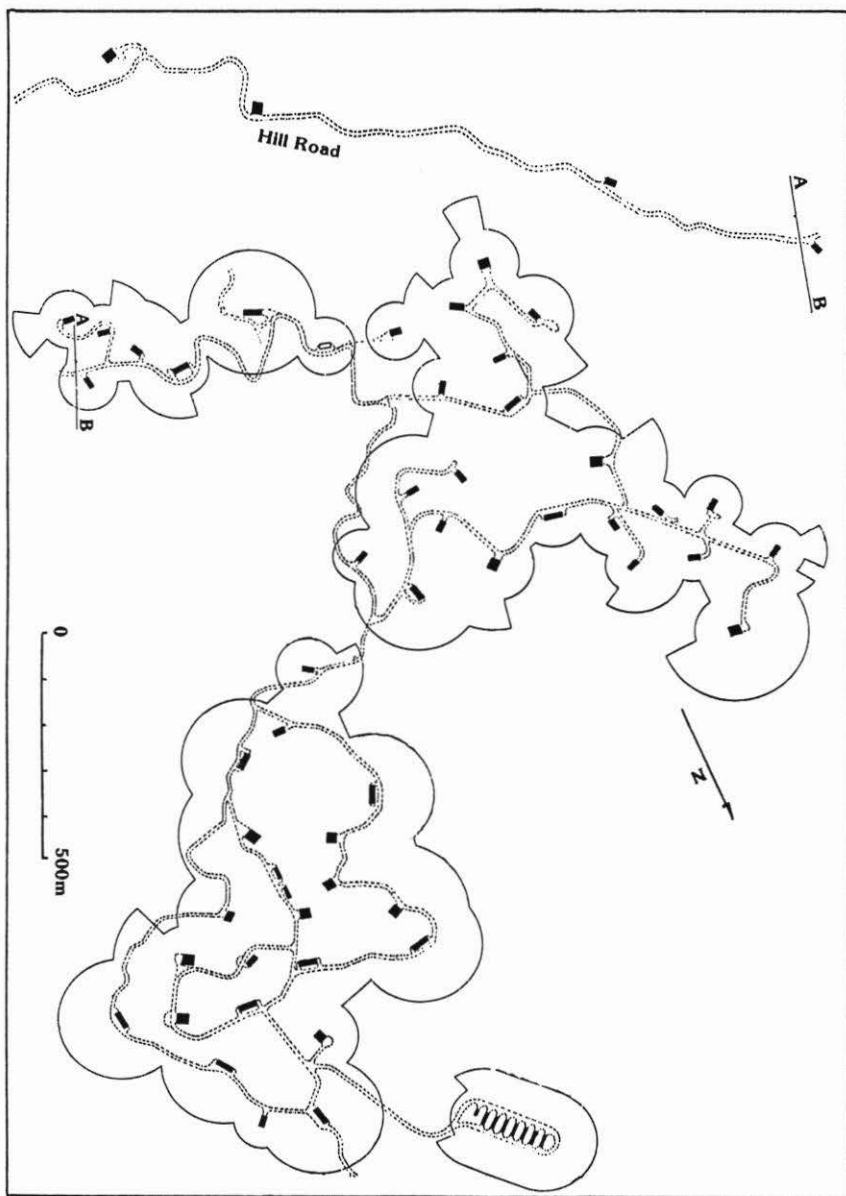


Figure 4. Plan of the Belmont Hill Magazine area, 1947 (after WDO 14373). A-B is a joining line. Solid line = Safety Distances; double dashed line = roadways.

north west end of the Magazine Area were chosen, because of their isolation and position relative to the prevailing wind, to hold chemical shells, presumably containing mustard gas. New Zealand is known to have held stocks of this weapon. The stocks were disposed of at sea at the end of the war (Hubbard 1993).

- (2) Ten magazines at Belmont Hill were built in 1944 and are known as 'Macallan' magazines. They were built of prefabricated interlocking concrete panels on a steel frame and have a pitched roof and a concrete floor. There are no internal pillars supporting the roof. All are oblong in shape and most are about 60 feet long and 15 feet wide. There are regularly spaced vents in the lower wall. The magazines themselves cost £18,500 to build and the all-up cost of the work was £23,100 (AD 1/203/317 V1, V2).

Eight of these magazines are located side by side at the north east end of the magazine area. They are unusual in being located so close together. These eight magazines were originally built for the Ministry of Supply (AD 1/203/317 V1). A series of seven trench-like terraces, longer than they are wide, have been cut into the top of the ridge to provide sites for the magazines. Earth has been piled high on the ground between the magazines so they are relatively isolated from one another. A road encircles the cluster so providing access to both ends of the magazines. A magazine at one end of the group is slightly different: it is smaller than the others and has an entrance at one end only.

The other two Macallan magazines are elsewhere, in the midst of Type P magazines. As with the Type P magazines, these two Macallan magazines were built for the Army (AD 1/203/317 V1).

The Macallan magazines are less sturdy constructions than the Type P magazines and in places some of the the prefabricated components are broken. Interestingly, many perfabricated parts were freighted in from the Northern Military District and breakage in transit proved a problem (AD 1/203/317 V1).

The Belmont Hill Magazine Area continued in use after the war and through into the 1960s. Residents in the Hutt Valley remember the sound of ammunition being disposed of as being a regular occurrence in the 1950s (W. Nelson pers. comm. 1993).

The Belmont Hill area is farmland, although housing is steadily encroaching. A small farm air strip has been constructed in the midst of one cluster of magazines in the north west corner of the area. This air strip has destroyed the pattern of roads but left the magazines themselves intact. Most magazines are open to stock, which use use them for shelter. Six have been put to farm use as tool, vehicle, and general storage sheds. Of these six, three

have been modified, generally by enlarging the entrances or adding additional ones or both. The other three appear unmodified. In addition, one magazine is within a high pressure natural gas compound and has been considerably modified. One magazine is used as a store for library books and periodicals.

The Belmont Hill Magazine Area is a major feature of the landscape. In terms of cost, the expenditure is comparable to that on the Wright's Hill fortress. The Magazine Area cost about £230,000 compared with some £250,000 for the Wright's Hill Fortress (or about \$18.4 million and about \$20 million respectively in today's terms.) Belmont Hill, with 62 magazines, is larger than the Motutapu Island Magazine Area described by Coster and de Lambert (1987) which has 50 magazines. The Motutapu magazines are different in form from those at Belmont Hill. The Motutapu magazines are semi-subterranean structures, having been constructed in pits and then covered with a layer of soil leaving only part of the front wall, the doorway, and vents exposed (Coster and de Lambert 1987). These magazines were built for the United States Forces but were never actually used (Bioletti 1989:Appendix E).

There is a smaller World War II magazine area consisting of about eight magazines behind the Shelly Bay Base on the Miramar Peninsula. The magazines are scattered along a road which runs up the side of the hill behind the base and each magazine occupies a terrace carved out of the hillside.

CONCLUDING DISCUSSION

As a result of recent surveys, Wellington is one of the few parts of the country with a strong, and still growing, inventory of military sites of the last 110 years. This information is now being used for advocacy and site protection work. Anything to do with the military is regarded with hostility in some quarters but it is important to insist that the military have played an important role in New Zealand history and that a matter-of-fact approach to, and acceptance of, military remains as part of that history is appropriate. That said, interpretation of historic places should never be allowed to become simply a public relations exercise on behalf of just one part or section of the community.

A number of military sites in New Zealand have reserve status. In some places in Australia voluntary groups with an interest in military history play a significant part in the management and interpretation, particularly through re-enactments, of forts such as Fort Glanville (Adelaide) and Fort Lytton (Brisbane). At both Fort Glanville and Fort Lytton, there are entrance fees but both have visitor centres with displays of photographs and explanatory text. At Fort Lytton visitors can see a video and then go on a self-guided tour with the aid of a pamphlet. Both forts hold special days with volunteers doing re-enactments of drills. The interpretation at such sites is well in advance of anything done in New Zealand and may perhaps indicate the potential for interpretation of comparable historic reserves here.

ENDNOTES

1. In a barbette emplacement most of the gun, and its crew, is protected within a concrete structure but the barrel of the gun is permanently exposed above the parapet (see Hogg 1988:117).
2. The values in today's terms quoted are approximate only. They have been calculated by multiplying the 1940s figures by 2 to convert them to dollars and then multiplying by 40 to convert the figures to something approximating today's values.
3. The 'Featherston Incident' caused considerable concern amongst the Allies about possible reprisals against POWs in Japanese hands. Atrocities committed against POWs and civilian populations by the Japanese military (Brackman 1989) was, however, already a well established fact by February 1943.

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