The Trampers' Map of the Tararua Mountain System, 1936

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ABSTRACT

The production and publishing of T*he Trampers' Map of the Tararua Mountain System* by the New Zealand Department of Lands and Survey in 1936 was a remarkable achievement. The development of tramping as a recreation, and the initiative of individuals, combined with a positive attitude in the Department resulted in a map which was startlingly ahead of its time, and remained in use in various editions for fifty years. This paper briefly documents the history before and after the map was published, and gives some detail of the cartographic techniques in use at the time, as a foil for modern thinking and cartographic practices.

Keywords

Tararua – mountain – mapping – history - 1936

BACKGROUND

The Tararua Range is a rugged mainly greywacke massif north of Wellington, extending from the Rimutaka Saddle to the Manawatu Gorge between the Kapiti Coast and the Wairarapa plains, straddling the 41° South parallel. In pre-European times the Māori knew of routes across the range, but living off the land and the rugged travel cannot have been much fun (Barton 1994 p.52).

Other than pioneering explorations looking for valuable minerals there was little point in early European settlers wasting effort in such an unproductive wilderness. From 1872 land surveyors explored and marked high points for the major triangulation network which was completed in 1881. This can't have been much fun either – cutting tracks through thick bush, waiting out the weather for sightings, and carrying heavy survey equipment, food and shelter. Little was known about the ridge and river systems between the trig points.

Around the turn of the century social changes enabled hardy men and women to begin exploring the range for recreation. Maps of limited, more accessible areas began to be compiled. Hunters following open deer trails also extended the geographic knowledge of the backcountry (Davidson and Dean 1960). During 1922-1934 twelve maps were compiled combining official information and the observations of tramping club members and others. (Barton 1997 p.42).

Within this period, a significant stimulus to mapping was the large scale search for Diedrich and Scanlon in the northern Tararuas in 1927. Following this, G. L. Adkin and H. R. Francis (from Levin and Masterton) pooled their knowledge and made tracings available to those who wanted them. In February 1930 Adkin, Francis and Brockett published 200 copies of an improved version in two colours incorporating information from Tararua Tramping Club members. This map was initially sold for seven shillings and six pence, which was later reduced to five shillings (equivalent to about $18 and $12 in 2012).

Other maps of various parts of the range were also published during this period and updated by deliberate field observation from time to time. An example is the map of the Northern Tararuas by W.C. Duncan believed to have been compiled about 1934 (Figure 1). The efforts of the amateur cartographers to resolve the geographic puzzles of the range with prismatic compass, altimeter and camera were appreciated by the official map makers.

THE 1936 EDITION

The New Zealand Department of Lands and Survey published a new map of the entire range in 1936 (Figure 2). This *Trampers' Map of the Tararua Mountain System,* which is the subject of this paper, was compiled from official records with additional, extensive

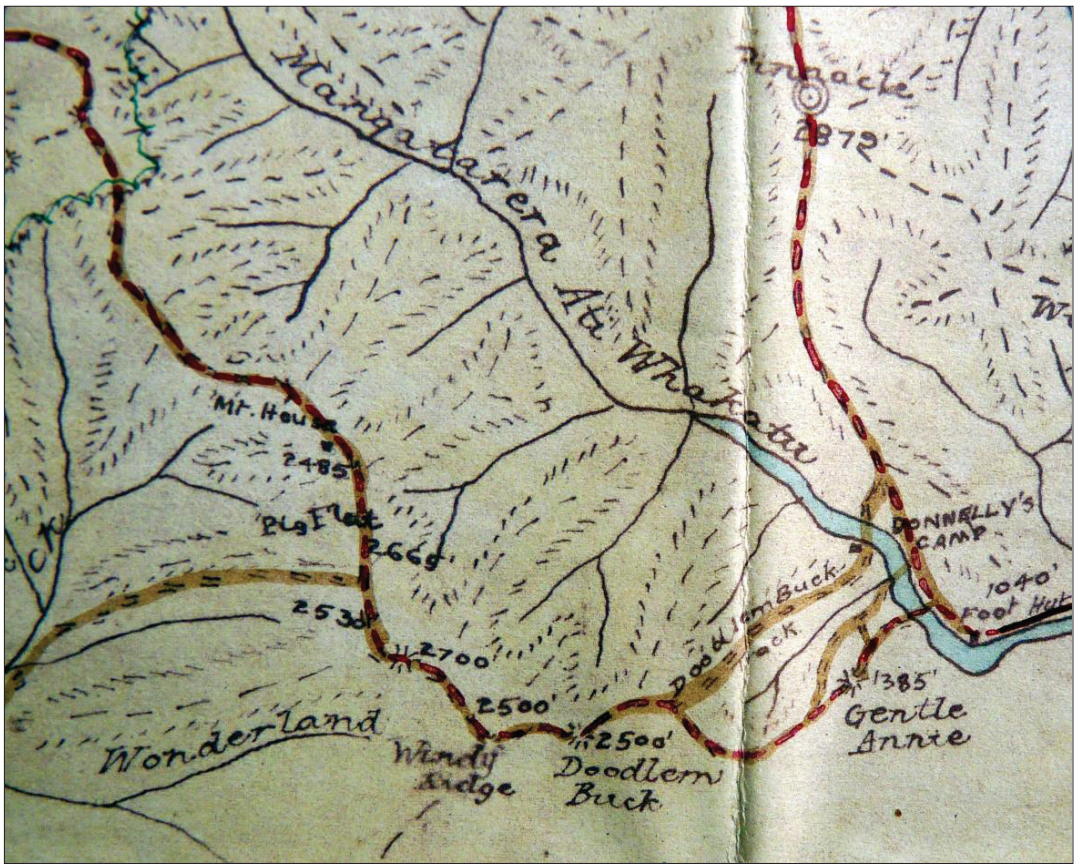

Figure 1. Northern Tararuas. Scale unknown. W.C. Duncan c1934. Detail (reproduced at 1:50,000).

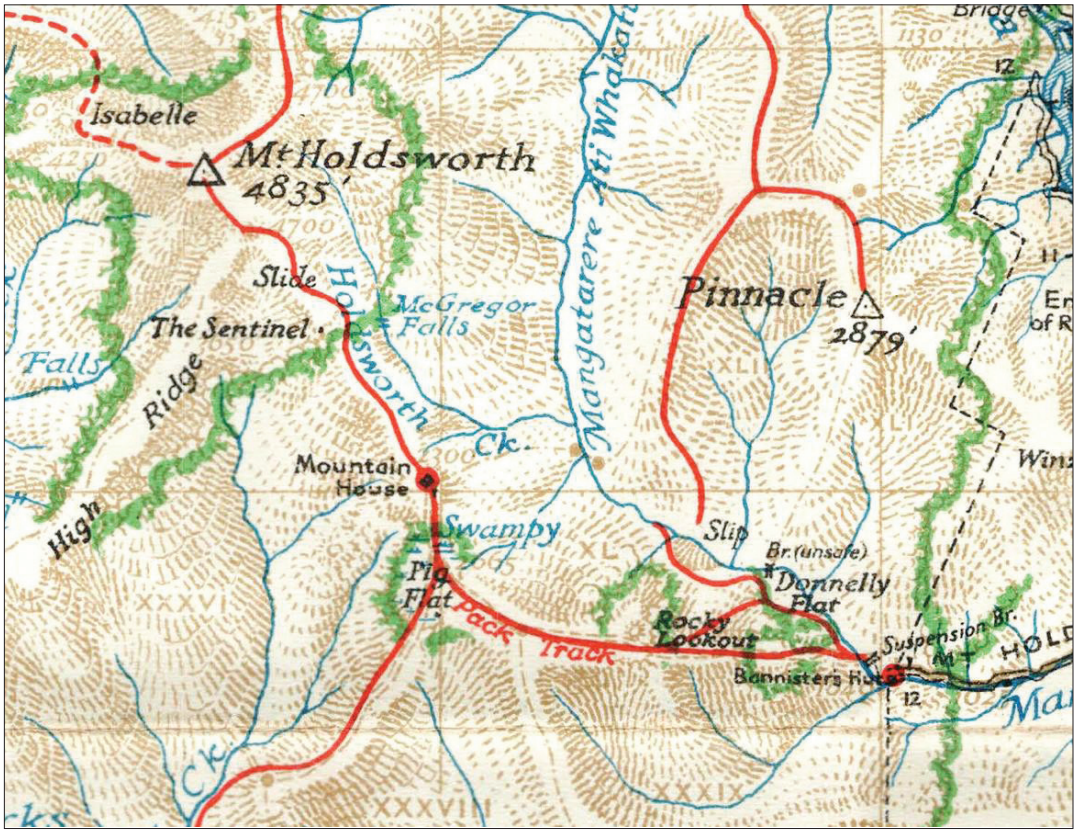

Figure 2. The Trampers' Map of the Tararua Mountain System. 1:63 360 1936. Detail (reproduced at 1:50,000)

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and comprehensive input from trampers, tramping clubs, and private individuals. It took almost a year to produce, and was a milestone in mountain mapping in New Zealand. The new map became 'an essential item in every tramper's pack for the next fifty years' (Dreaver 1997 p.152). Dreaver includes in his 'fifty years' the period from 1950 when map was reduced to 1:100 000 scale and published as New Zealand Mapping Service (NZMS) 57 in six editions.

The Hutt Valley Tramping Club newsletter in August 1936 asked for the names of those wanting copies of the new map when it was available, and the *Evening Post* announced its imminent publication on Friday December 18th 1936 in an article that took most of a page, and included the background to many of the topographic names on the map. The new map was eagerly awaited.

Although referred to as the '1936 Map' it was actually published in 1937. It was described in the Wellington newspaper the *Evening Post* as *'probably the finest of any district ever prepared in New Zealand'*. (Maclean 1994, p.170).

The Lands and Survey Annual Report (31 March 1936) records: *'The topographic map of the Tararuas has now been completed, and will be published in the New Year. This map, which is well up to date, should be of great benefit to trampers in this region.'* (A to J, 1936. p.5).

The Lands and Survey Annual Report (31 March 1937) also records: *'Tararua Trampers' Map (completed). This map comprises an area in the Tararua Mountains and was drawn to supply the need for a compilation showing tracks in the area for the guidance of trampers.'* (A to J, 1937-38. p.5).

At a scale of 1:63 360 (one mile to an inch), the map measured 50x31 inches including the covers (1275x791mm, folded 304x127mm). The map was printed in five colours on linen-backed paper for 'permanence', and sold for five shillings – about $11 in 2012 . Its size was found to be so cumbersome that future editions were printed at smaller scales on smaller sheets of paper.

It is not known how many were printed, but it was reported to be 'out of print' in September 1943 (Barton 1977 p.44). Reduced photographic copies at about 1:115 000 scale, with minor amendments, were made available around 1944.

Collaboration

Members of the Tararua Tramping Club, which was formed in 1919, and others were encouraged to take prismatic compass bearings, 'work out' heights using an altimeter, take photographs (including panoramas), and provided much of the detailed ground work for the Department. Individuals would offer their findings to cartographer Guy Harding[1] and compare data in their lunch times. (Maclean 1994 p.170, Barton 1994 p.53, Barton 1997 p.42). Even with such dedicated and painstaking work there were still errors, some of which were frustrating for subsequent search and rescue missions.

Compilation

Compilation of the various surveys and sketch maps proved difficult. Attempting to reconcile sketches and photos from each side of the range only provided more gaps requiring more field trips. Possibly, for some people, this was more reason for exploration! Even at the relatively small scale of one mile to an inch the crude methods available could not provide a definitive geography. Changing scale would have required the skilled use of a precision mechanical pantograph or a Photostat camera (see below).

Copying

Both tracing paper and tracing linen were in common use at that time and remained in use until the 1960s. Both could accept ink or pencil drawing. For proofing, sun-prints later superseded by ammonia developed diazo prints, would have been easiest and cheapest for copying traced maps, but far from permanent. The Photostat camera process was available in New Zealand at the time of compilation, and would have provided an efficient and accurate means of copying and changing scale, and a more permanent photographic image. (A to J, 1937-38. p.6).

Drawing

The drawing materials and production methods available at that time were limited. Whatman's Hot Press paper was widely used for cadastral drawings and was surely used for all the drawings for this map. The compilation would have been photographed and printed on the Whatman's in pale non-photographic blue using a flat-bed press. Each colour would have been hand drawn (with Mitchell pen and rubbed up Chinese stick ink) over the blue image. The elegant letter-

1 William Guy Harding 1883-1978.
Referred to as a 'cartographer' at the time, although the term was not in common use in New Zealand.

ing, combined with carefully considered composition, offers a clear, attractive and informative image. Training, experience, and mastery of technique shows in every line….

The use of hachures in a topographic map was not uncommon at that time. There are earlier New Zealand examples at smaller scales. (Aston 1910). However the use of detailed coloured hachures at this scale may be unique in the New Zealand context. The hachures would have been drawn in the same way as the other plates, on Whatman's paper with a blue image. Ex-Chief Cartographer Doug Francis has commented: *"This excellent example of the technique …is a masterpiece."*[2] Relatively stable transparent synthetic drawing foils did not become widely available until the 1950s. More permanent, much more stable, polyester drawing foils became progressively introduced into mapping during the 1960s.

Reproduction

Drawings would have been photographed onto a wet-emulsion glass plate as a negative. This negative would then be combined with graduated BenDay Screens to provide the individual zinc offset printing plates. Reproduction of the drawings would have required the use of a very large format camera similar to the Hunter Penrose camera in Figure 3.

Figure 3. The Hunter Penrose camera installed in the Queensland Lands and Survey Office in 1924 (pres2m-sia1201.blogspot.co.nz/).

2 Personal communication, July 2012.

Printing

Offset printing would have required a 'Double Quad Crown' machine which has an image size of 60x40 inches. Presumably the New Zealand Government Printing Office had such a massive machine at that time.

LATER EDITIONS

The 1936 edition ran out in 1943 and was not reprinted due to the paper shortage and other priorities for map production. Around 1944 a revised monochrome edition was produced as a photographic print 560x410mm at a smaller scale – around 1:115 000. This was a photographic reproduction of the 1936 map with some additions.

The 1936 map was superseded in 1950 by NZMS 57 at 1:100 000. This map was based on the detail of the 1936 map but showed black ridgelines instead of hachures. The map retained its legibility at the reduced scale. There were at least six editions of NZMS 57, each improving on the last. Early editions still carried errors from the 1936 map, some of which hindered search and rescue efforts in 1957 (Barton 1994, p.53, Figure 4).

In 1977 the map was converted into a map of the Tararua State Forest Park as NZMS 274/2, still at 1:100 000 scale. This map was published in seven editions being updated and redrawn as new mapping became available. The last edition was in 2006.

Although provisional first editions in the NZMS 1 series (1:63 360) were published during the Second World War it was not until 1960-70 that photogrammetric contouring was published and the intricacies of the mountain range definitively revealed.

NZMS 260 sheets S25 and S26 covered the Tararua Range at 1:50 000; fully metric new mapping with 20 metre contours. 22,409 copies of S25 were printed in three editions during 1984 to 2001. 27,596 copies of S26 were printed over three editions during 1984 to 2005. (Jupp 2011) These two maps were printed back-to-back on Tyvek synthetic paper as a trial. Although successful for users (some are still in use today!) the printing was wastefully uneconomic and was discontinued.

The 260 series topographic data was also used as the base for the double-sided *Tararua Recreation Area* map, produced by Terralink International as part of its recreation map series from 2002 to 2006. This map

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reintroduced park boundaries, and included thematic symbols and historical annotations only previously seen on DOC park maps. The map proved popular but is now out of print. Terralink is no longer in the map publication business.

Land Information New Zealand replaced the 260 series in September 2009 with the Topo50 series, in which the Tararua Range is covered in four smaller format sheets. The Topo50 series is digitally derived from the 260 series but on a different datum and projection (Figure 5).

NewTopo NZ Ltd published *Tararua Tramps* in 2005 as a skew single sheet at 1:75 000 scale on synthetic paper, and republished it as a double-sided map at 1:55 000 scale in 2012 on high-wet-strength paper (Figure 6).

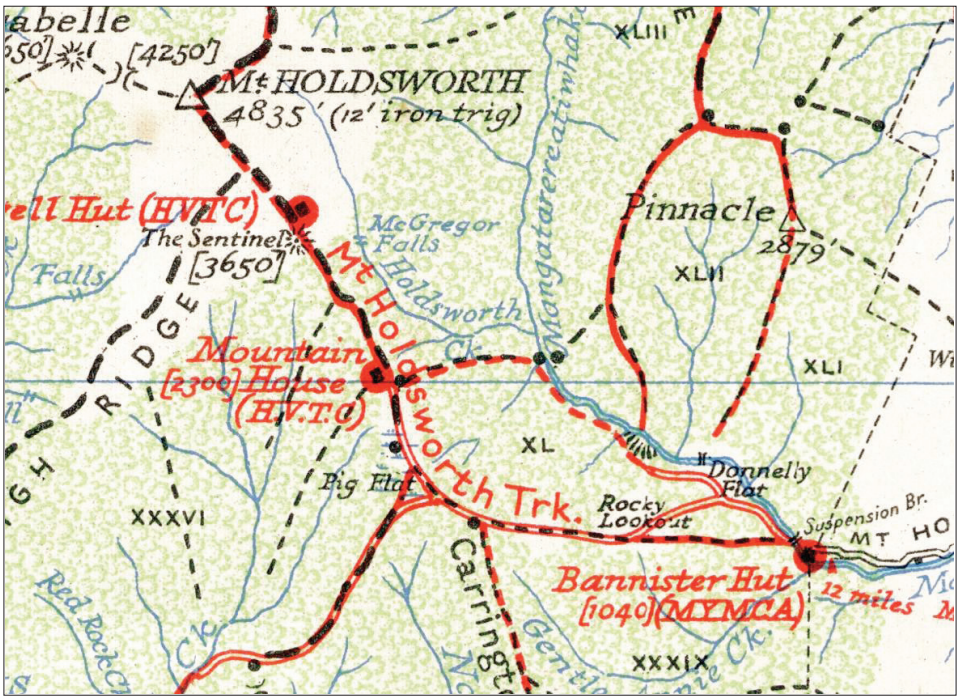

Figure 4. NZMS 57 Map of the Tararua Mountain System. 1:100 000 1950. Detail (reproduced at 1:50,000).

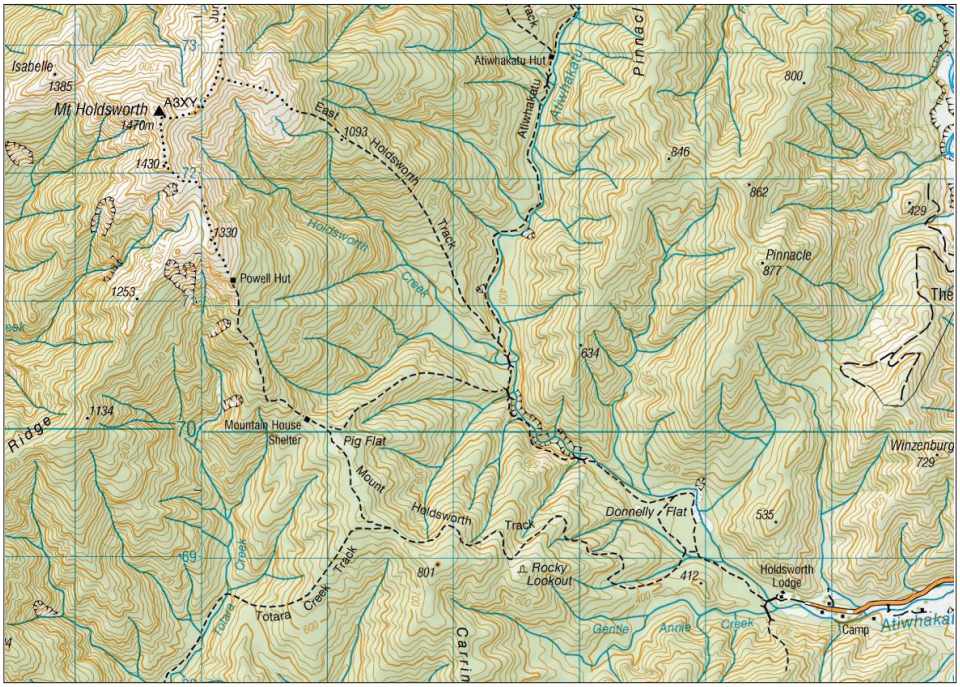

Figure 5. Topo50 sheets BP33 and BP34 1:50 000 2011. Detail (reproduced at 1:50,000).

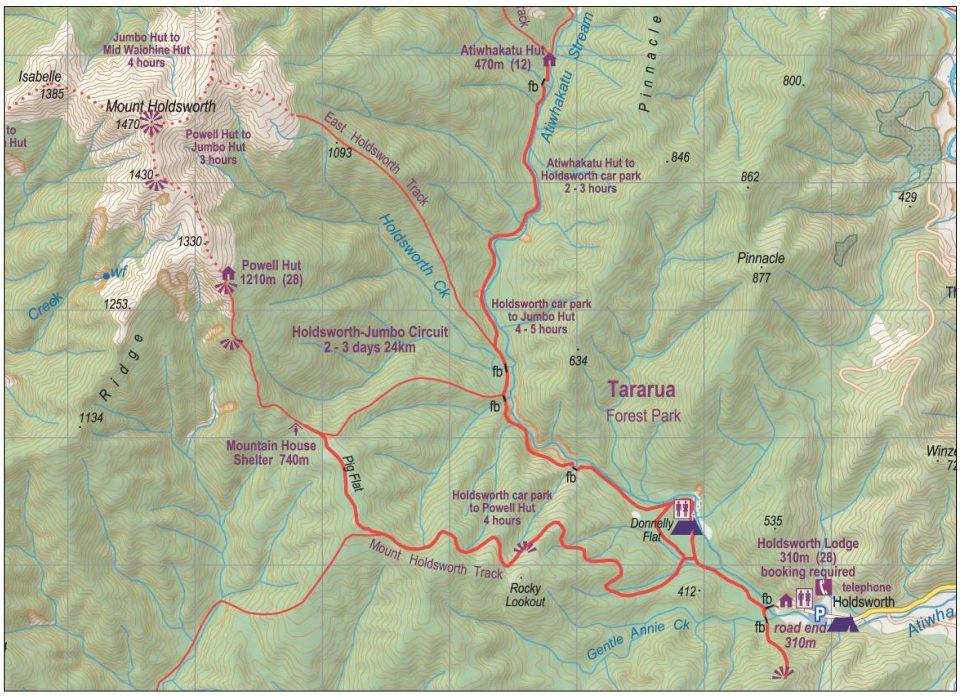

Figure 6. Tararua Tramps. 1:55 000 2012. Detail (reproduced at 1:50,000).

CONCLUSION

The 1936 map of the Tararua Mountain System was a triumph of collaboration between the tramping fraternity and the Department of Lands and Survey. The map was widely acclaimed at the time and reflects a very high standard of conception and skill in execution. The map will remain a classical benchmark in New Zealand mountain cartography.

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