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The original Scott Base buildings

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Research Note

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Abstract

Scott Base was built in the summer of 1956/7 at Pram Point, Ross Island, initially to provide accommodation for the Ross Sea Support Party of the Commonwealth Transantarctic Expedition (NZ TAE) and for the New Zealand International Geophysical Year Antarctic Expedition (NZ IGY). It has generally been accepted that it was built primarily by and for the Ross Sea Support Party. This is reflected in naming one of the last, conserved, original huts (Hut A) after the NZ TAE and also in ignoring the existence of the other original huts (Hut G and H) still in use. The contribution of the NZ IGY programme to Scott Base (SB) has received little recognition. Furthermore, SB provided a presence in the Ross Dependency to support the New Zealand claimant position. The specifications for the base buildings were developed by a joint committee from both expeditions with final design by the Ministry of Works of the New Zealand Government. The base was constructed and largely paid for by the New Zealand Government. This note briefly reviews what occurred during the conception, design, construction and payment for the base.

Introduction

Scott Base (SB) was built in the summer of 1956/7 at Pram Point, Ross Island for the New Zealand Government. It has generally been assumed that it was built primarily by and for the Ross Sea Support Party of the Transantarctic Expedition. However, it was designed, constructed and largely paid for by the New Zealand Government. In the 1940s and early 50s, there had been discussion within Government circles (Templeton, 2000, pp. 88–114.) about the need to have a presence in the Ross Dependency to support New Zealand's claimant position, particularly given the extensive exploration that had been undertaken in the region by the USA. Two major events provided the necessary impetus to build a base somewhere within the Ross Dependency: The International Geophysical Year (IGY), in which observations in Antarctica formed a significant part of the planned global programme, and The Commonwealth Transantarctic Expedition (TAE), a nominally private expedition planned by Dr Vivian Fuchs to emulate Shackleton's plan to cross Antarctica, and, incidentally, making geophysical measurements of use to the IGY. The British (UK) Government supported the TAE expedition as this exploration activity could enhance their claimant nation position (Templeton, 2000, p. 105). The UK encouraged other Commonwealth nations to contribute to the expedition, particularly New Zealand as TAE planned to finish at Ross Island. New Zealand supporting the TAE in the Ross Sea region would also enhance their claimant position.

Extensive use is made in this paper of original meeting minutes, letters and other material in Archives New Zealand in Wellington and Christchurch. These are not available online. The location of the material in Archives New Zealand is given in the References list.

SB was planned to provide accommodation for the New Zealand led Ross Sea Support Party of the Commonwealth Transantarctic Expedition (NZ TAE) for the duration of their expedition (1–2 years) and to accommodate the New Zealand IGY Antarctic Expedition (NZ IGY) – a New Zealand Government expedition of at least two years duration and part of the much larger New Zealand IGY programme. The role of SB in providing an ongoing "presence" in the Ross Dependency that New Zealand claimed has often been understated in past narratives, although from the start the SB buildings were to be of a permanent or semi-permanent construction (Hatherton, 1961, p. 27; Ponder, 1996, pp. 97, 98; Ross Sea Committee, 1956a). Support for both projects was approved by NZ Cabinet on 5 February 1955 (Templeton, 2000, p. 109 #82), with an allocation to NZ TAE on 26 April 1955 (Templeton, 2000, p. 114 #103) and one to NZ IGY in August 1955 (Hatherton, 1961, p. 12). The later date for IGY funding resulted from the Government requiring a detailed scientific programme to be developed and costed for the whole IGY programme by a government Inter-Departmental Committee (IDC) before the funds could be allocated to the appropriate Departmental Vote (Department of Scientific and Industrial Research (DSIR) or Air Department for NZ Meteorological Services).

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Organisation

The NZ TAE expedition was organised by the Ross Sea Committee (RSC) that was set up by the New Zealand Government on 27 May 1955. RSC comprised of representatives of government departments and private individuals and was chaired by C M Bowden, a recently retired New Zealand Government Minister (Helm & Miller, 1964, pp. 49, 50). The RSC office, staffing and operations were directly funded and supported by the New Zealand Department of Internal Affairs and Ministry of Works (MoW) (Ross Sea Committee, 1955a). The NZ IGY Antarctic Expedition was part of a larger enterprise as New Zealand's contribution to the IGY covered the range of geophysical and meteorological studies at existing and new observatories and stations from the equator (Tawara) to Antarctica (Ross Island and Cape Hallett). The Royal Society of New Zealand (RSNZ) was the New Zealand adhering body to International Council of Scientific Unions that were organising the global IGY project. However, as most geophysical and meteorological observations in the New Zealand region were being made by the New Zealand Government (primarily DSIR and NZ Meteorological Service), they set up an IDC on 26 May 1955, chaired by Dr E I Robertson (DSIR), to plan and carry out the IGY programme on behalf of the NZ IGY Committee of the RSNZ (Markham, 1955).

The NZ Government decided that a shared base was required as both expeditions were to occur at the same time and in the same area. A base would also support the Government's desire for a presence in the Ross Dependency. Significant interaction between the two expeditions was essential for the Antarctic base and its requirements, so Dr E I Robertson (IDC) was co-opted onto RSC (Ross Sea Committee, 1955b) and, with Dr T Hatherton (Chief Scientist, NZ IGY Expeditions (Antarctica)), onto the buildings and other RSC subcommittees. The buildings committee was very important to the NZ IGY expedition as it required specialist observatory buildings for its work – a Science Laboratory building, two magnetic observatory buildings (Absolute hut and Variometer hut) and a Seismograph hut – in addition to the general base living requirements. The IGY party also required a dependable power supply for their instruments, so reliable generator capacity was of great importance for them. Thus, the base design had two components – living and support buildings and the science buildings. The buildings subcommittee agreed on the specifications for the base including – the number of huts; the use of the Australian Antarctic programme (ANARE) designed huts (ANARE, 2020; Hatherton, 1956a) as used at Mawson Station in 1954; and linking the huts by a covered passage of canvas over dexion frames (Ross Sea Committee, 1955c). The subcommittee originally planned that one of their independent members would do the final design details of the huts and organise the build (Ross Sea Committee, 1955c) but subsequently decided that was not possible. Dr E Marsden, on behalf of the building committee, therefore asked the New Zealand MoW to organise the detailed design and construction of the new base. Frank Ponder, architect division of MoW, who had broad experience of designing and constructing new buildings in remote locations (e.g. Pacific Islands) for the New Zealand Government, was tasked with the project in February 1956 (Hatherton, 1961, p. 27; Ponder, 1996, p. 97). The brief called for "a base of a semi-permanent nature, with accommodation, laboratories for scientific work and other specialist activities with the characteristics of a permanent hostel" – "a permanent base was required" (Hatherton, 1961, p. 27; Ponder, 1996, p. 97). Realising the very short time frame, Ponder took on Randal Heke, who he had worked with in the Islands, as construction foreman, and Bill Mitchell as stores man to organise the delivery of materials for construction. Ponder agreed that the buildings had to be prefabricated (Ponder, 1996, p. 98), and he followed the ANARE design that was modular and comprised standardised prefabricated panels bolted together by longitudinal steel rods through the panels. The panels followed cool store concepts and comprised a sandwich structure of thick insulation with a protective cover on the inside and on the outside. Foundations for each hut were formed by a grid of railway sleepers. The two magnetic huts required special design as no magnetic fastening could be used. The steel tie rods were replaced by brass rods; copper nails and wood dowels were used in their construction, with tie-down guys made of copper wire (Cochrane & Davey, 2018; Ponder, 1996, p. 101). The seismograph hut was a simpler construction. The non-magnetic huts and seismograph hut were to be located separately at a distance from the main buildings to reduce vibration and the magnetic influence of these buildings. Ponder made the tunnels joining the other six huts of curved corrugated iron panels as this was more robust than the original concept of canvas over dexion frames. The panels were bolted together, a difficult job according to Heke (R. Heke, personal communication, 13 August 2020). These tunnels enabled movement between huts without going outside (a similar arrangement to that used at the US South Pole Station erected earlier in the season) (Siple, 1959). The layout of the base (Fig. 1) and details of the construction are given by Hatherton (1961, pp. 27–34). On 13 March 1956, the RSC approved the Ponder design for the base buildings and for MoW to place the order for them (Ross Sea Committee, 1956b). The panels for 5 huts were ordered from Explastics Insulations Ltd of Melbourne, which had supplied huts for ANARE in 1954 (Ross Sea Committee, 1956b), but they could only deliver 4 (mess/office, 2 sleeping, science) and the other 5 huts (2 generator huts, the two non-magnetic huts and the seismometer hut) were constructed in NZ by Hitchens Ltd at Renwick near Blenheim in NZ (Cochrane & Davey, 2018; Hatherton, 1956b; Hatherton, 1961, p. 31). The tight time frame for building the four prefabricated huts in Australia meant that the sailing of the *SS Wanganella* from Sydney had to be delayed so the huts would arrive in NZ in time for test assembly in November 1956 at Rongotai (near Wellington) before loading on ship for Antarctica (Ponder, 1996, p. 103).

Construction of the base

Pram Point was recommended by Captain Ketcham (US Navy and commander of the US air facility at Hut Point) for the location of the base. The base site was chosen in consultation with Lt. R Bowers, US Navy Seabees commander, who had just returned from constructing South Pole Station, and the site was initially levelled using a US D8 bulldozer from Hut Point (later McMurdo Station) (Miller, 1957, diary for 9/10 January 1957). The precise hut site foundations were surveyed in by Bob Miller and Randal Heke (Miller, 1957, diary for 12 January 1957). The base was constructed by a NZ government team led by Randal Heke (MoW) and comprising six New Zealand Defence Force staff (3 army, 3 navy) with Bill Mitchell (MoW) organising the unloading of the hut material in the optimum order. They were supported by expedition members who transported the building material from HMNZS Endeavour to the building site. Hut A (mess and radio office) was constructed first and completed on

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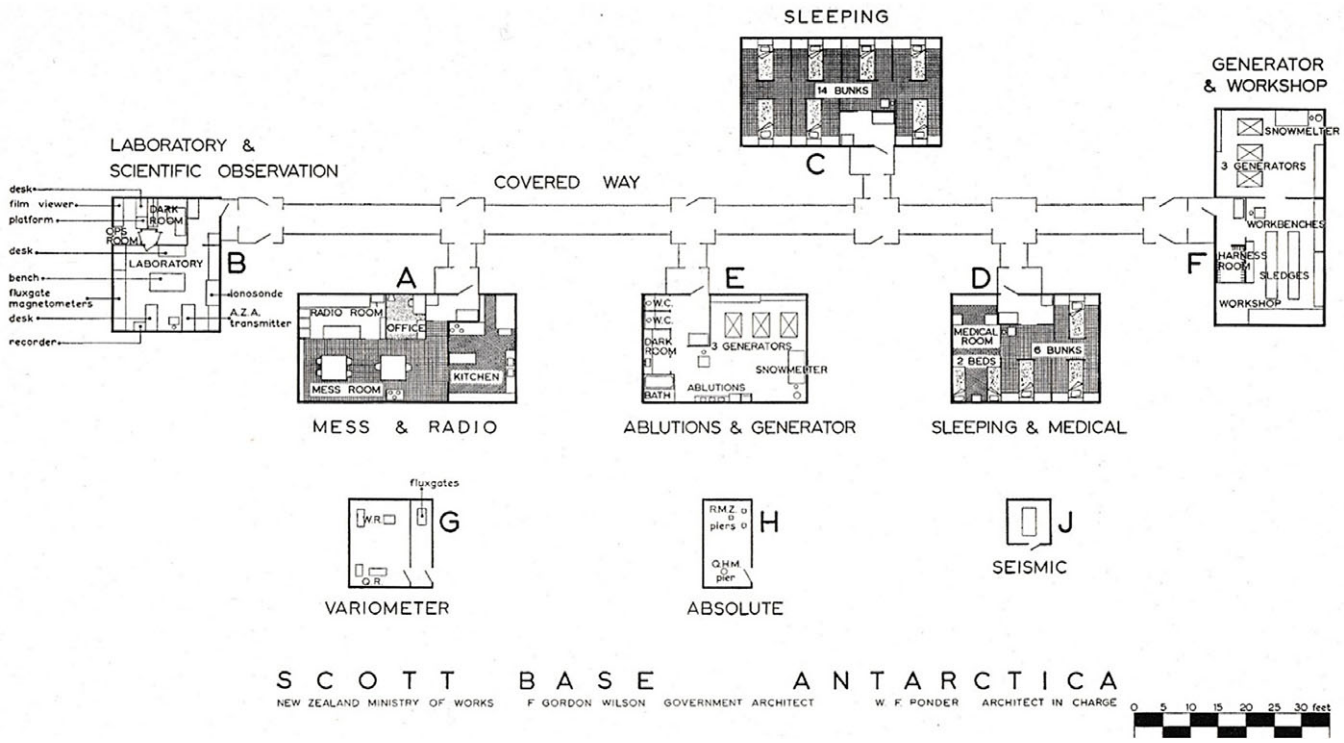


Fig. 1. Base buildings (Hatherton, 1961, p. 29). Note: Huts G, H were located about 60 m west and Hut J about 200 m northwest of Hut B (see Fig. 2).

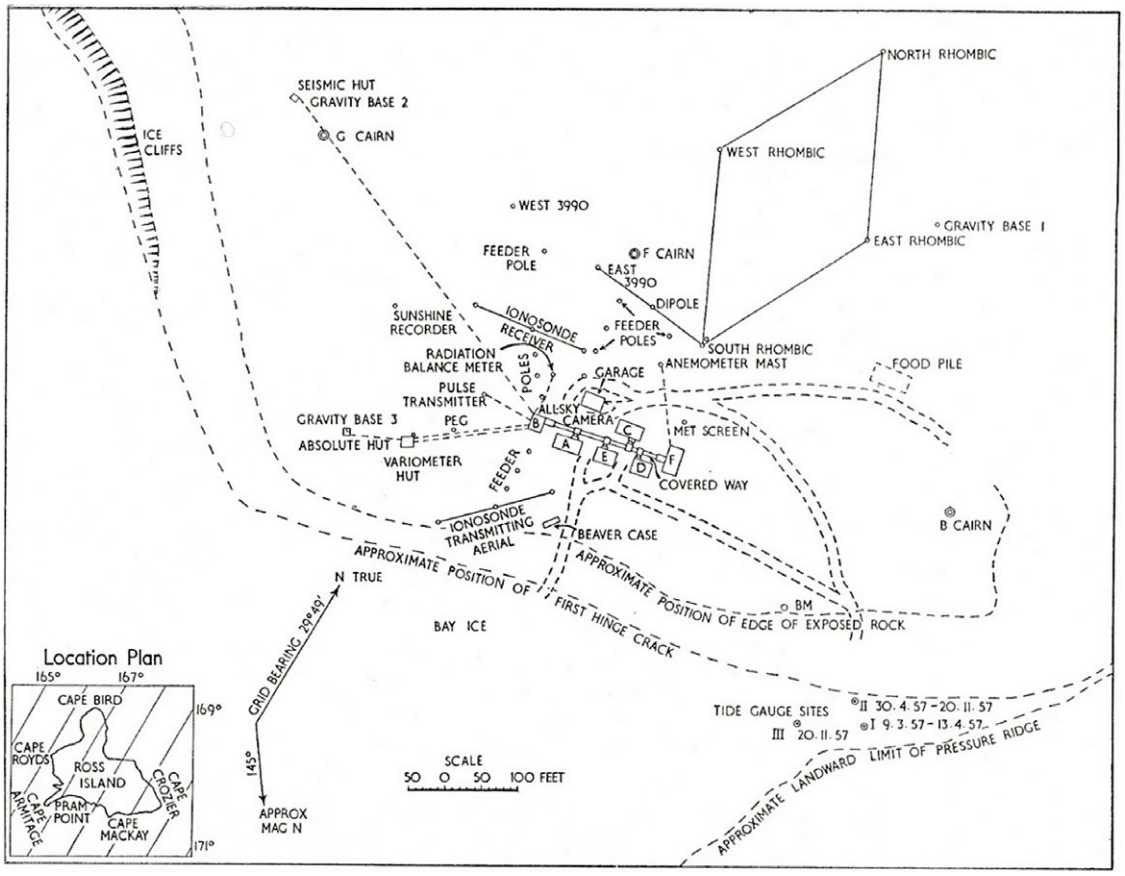


Fig. 2. Base site layout (Hatherton, 1961, p. 28).

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Fig. 3. Scott Base – building the base. (Photo: WJP Macdonald).



Fig. 4. Scott Base – Building variometer hut. (Photo: ©Antarctica New Zealand Pictorial Collection 39752).

20 January 1957, when the NZ flag was raised (Helm & Miller, 1964, p. 159). Thereafter the remaining buildings were constructed (Fig. 3), the last being the scientific huts (G, H and J) (Fig. 4) which had the more complex requirements (non-magnetic material used and piers for instruments installed through the floor onto solid ground). Although Heke recalls his team constructed all the huts (R. Heke, personal communication, 13 August 2020), others (Macdonald, 1957, diary 6 February 1957; NZ National IGY Committee, 1957; Orr, 1957, diary for 4 February 1957) note that the IGY party assisted in the construction of the science huts. Jack

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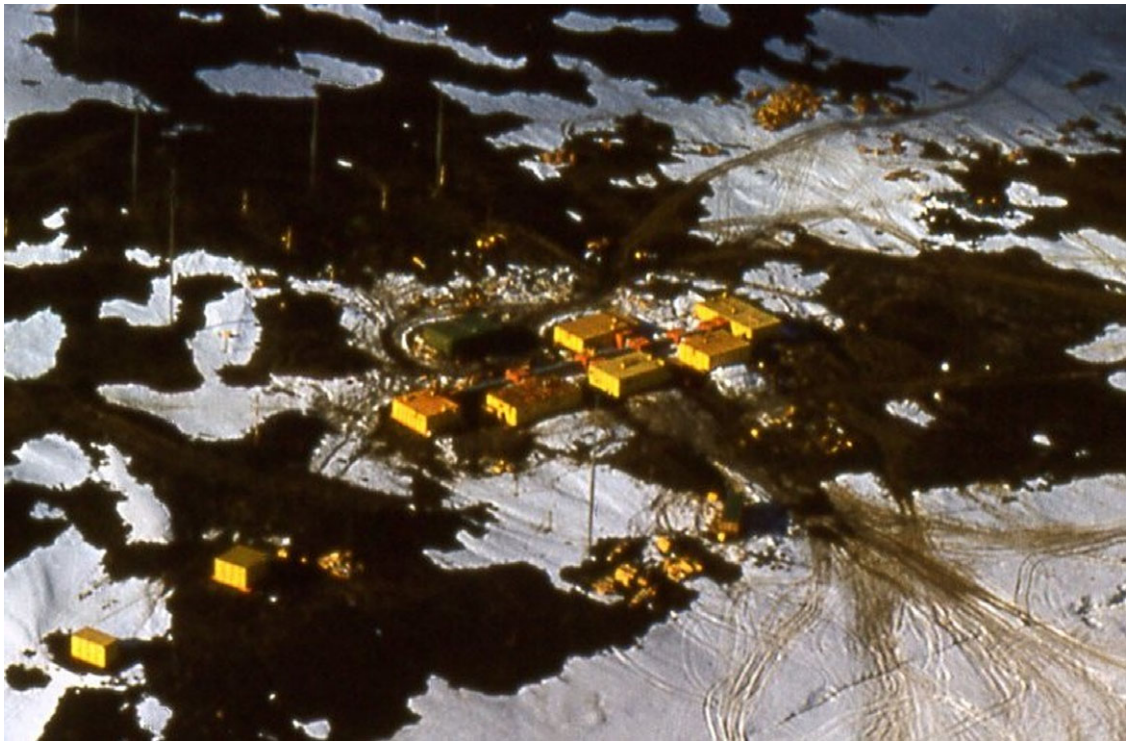


Fig. 5. Scott Base 1957. (Photo: H Orr).

Hoffman drilled the holes for the tie-downs using a novel method of compressed air as drilling fluid for clearing the holes of melt water produced by drilling that could freeze, as well as any drilling fines.

Payment

It eventually turned out that payment for the huts was most, if not all, by the New Zealand Government. The huts cost a total of £39663-10s-4d (Ross Sea Committee, 1960). Early on (20/4/56), the IDC (IGY) had agreed to pay for their share of the base and all the science huts (Interdepartmental Committee, 1956). DSIR directly paid fully for the four science huts (B, G, H and J) and 4 of the 6 generators, plus its share of the rest of the base (5 persons out of 22 persons planned for the base). This totalled £16850, well over 40% of the total cost of the base (Ross Sea Committee, 1956c). Although this passed through the NZ TAE accounts, it appears to have been paid directly to MoW as the NZ TAE accounts show an accrual of only $21222 for the huts in their 1958 accounts (TAE NZ, 1958). By April 1956, the RSC found that they were not attracting enough funding for their expedition so they applied to the New Zealand Government for additional support, setting out their income and expenditure and suggesting the Government should provide the base and shipping/logistics support for both (TAE and IGY) expeditions, and noting further that the RSC had committed their New Zealand Government donation of £50,000 towards the base (£20,000) and Beaver aircraft (£30,000) (Ross Sea Committee, 1956d). On 23 April 1956, the Deputy Prime Minister (K Holyoake) notified RSC that government had approved further support through taking over (under-writing) all the logistics support for the combined expeditions (Ross Sea Committee, 1956e). This would involve New Zealand Navy being responsible for organising transport to get to Antarctica and establishing the base in McMurdo Sound, the New Zealand Air Force providing aircrew for the NZ TAE Beaver and for an Auster aircraft that they (government) would buy, and for radio equipment. As a condition of this additional support, the Beaver aircraft and base would revert to the NZ Government at the conclusion of the TAE. RSC noted on 9 April 1959 that the residual of the bill for the base from MoW was finally approved for payment (Ross Sea Committee, 1959). At the end of the TAE crossing, the RSC wrote off £72,193 from their asset list (TAE NZ, 1960) – nominally the Beaver aircraft and the base (a large part of which had been paid for by DSIR). After paying final accounts, the NZ TAE (RSC) had a deficit of about £11,695 on 1 July 1959 when their project was wound up by UK TAE, with the deficit covered by the UK TAE (Ross Sea Committee, 1961).

Post NZ TAE

Although NZ TAE was in charge of the base and responsible for the effective running of the base until they left McMurdo for NZ on 3 March 1958, DSIR had to send down a diesel mechanic, R M Robb, on 16 October 1957 (Orr, 1957, diary for 16 October 1957), to maintain the generators at SB when the two base engineer/mechanics (with most of the mechanics tools (Macdonald, 1957, diary for 10 September 1957)) had to accompany the tractor train from 14 October 1957 and keep the tractors going on their travel south to all the depots and further.

The combined (UK and NZ) TAE expeditions departed SB (Fig. 5) on 3 March 1958, at which time the base transferred to DSIR control (Geophysics Division, DSIR). Lin Martin, base leader for 1958, arrived with most of the new IGY party on HMNZS Endeavour on 31 December 1957 and moved onto the base on 1 and 9 January 1958. He noted a poorly itemised handover of the base – from NZ TAE to DSIR – the casual dumping of vehicles and other items, and other issues (Martin, 1958).

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He had to document the items of base equipment for a formal handover. SB was then operated by Geophysics Division, DSIR through an Antarctic section headed by Trevor Hatherton, with Bob Miller as Executive Officer. DSIR Head Office realised that the running of SB and the NZ Antarctic Programme was placing a major stress on the operations of the normal research programme of Geophysics Division, and therefore set up an Antarctic Division within DSIR on 5 May 1959, under Geoff Markham, to support the new expanded NZ Antarctic Research programme to which responsibility for SB was transferred.

Conclusion

There is no doubt that SB was always a NZ Government Base providing a permanent New Zealand presence in the Ross Dependency, as well as supporting the New Zealand science programme and initially providing accommodation for NZ TAE. The nominal independence of the NZ TAE and their leadership of the base during the TAE appears to be a mechanism whereby the NZ Government would have no direct responsibility for the activities of the NZ TAE party, should something untoward happen, but the Government had ownership and control of the base and facilities and hence the long-term presence in Antarctica needed for its claimant position. On the latter issue, Hillary, Hatherton and Kirkwood all had appointments to "exercise jurisdiction in the Ross Dependency" (as Stipendiary Magistrate, Postmaster, JP or Coroner, (Helm & Miller, 1964, p. 125)).

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Conflict of interest. The author(s) declare none.

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