

INDEPENDENT SAROP REVIEW

Operation Myers

Location: Tararua Forest Park, New Zealand

Date: 2nd – 12th June 2019

Report version: FINAL

Reviewer(s): *Joanne Holden, on behalf of NZSAR Secretariat*

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Executive Summary

The New Zealand Police is responsible for all Category I Search and Rescue Incidents.

On Saturday June 1st 2019 Police were notified that Darren Myers was overdue from a solo tramp in the Tararua Forest Park. An extensive SAR Operation commenced the following day utilising Police, LandSAR and AREC Volunteers, Defence assets and personnel and a commercial helicopter operator.

The search continued until June 12th when he was located deceased.

While this search ran into several Operational Periods, it was in reality an Initial Response that took a number of days to complete due to the challenging weather conditions. There were limited windows of opportunity to deploy teams into the field, and there was a lot of down time where no searching was possible due to the adverse weather.

Safety of teams was managed well; conscious efforts were made by the IMT to ensure Field Team members deployed into the field were competent and suitably equipped to operate safely in the environment into which they were being deployed.

Family liaison and support was managed particularly well.

Media interest was handled well; key messages were disseminated.

This SAROP highlighted a shortcoming in the awareness of existing and emerging technology that either is or should be available to SAR Managers.

Communications failures restricted the ability of Field Team Members to radio back to the IMT in some search areas. Alternative means of communication when HF and/or VHF comms fail are required for every SAR Operation. This is not unique to the Wairarapa and it is recommended that this be addressed at a National level.

The Operation also illustrated the need to improve the capabilities within the IMT both within and beyond the District; more training in CIMS and SAR exercise exposure is recommended to build a good base of competent IMT members who can be deployed beyond the Initial Response period.

While the outcome of the Operation was tragic, the focus on searching key corridors of travel, the analysis of clues, and the determination in particular of the local helicopter operator resulted in Darren being returned to his family.

1. Recommendations

1. All members appointed to function management positions within a SAR IMT to be trained and competent in CIMS (level 4) and Manage the Initial Response (Land) / Manage the Marine Response (as appropriate) at a minimum.
2. Investigate alternative means for teams to communicate with the IMT when HF and/or VHF comms fail; consider options that can also integrate radio messages, cellphone calls, text messages and email.
3. Investigate procedures for SAR Managers to obtain relevant cellphone handset data outside business hours; socialise the process to SAR Managers.
4. Instigate means for SAR Managers to be made aware of new technologies and developments in current technologies that are applicable to SAR;
5. Undertake the review of any extended and/or complex Category I SAR operation in accordance with Police Instructions, using a suitably qualified and experienced SAR Manager who has had no prior involvement with the search. Documentation should be presented in a suitable state for review.

2. Introduction

Darren Myers left the Poads Road, Levin entrance of the Tararua Forest Park on May 28th with the intention of undertaking a solo Northern Crossing of the Tararua Range.

The Northern Crossing links the Ōhau and Waingawa catchments in the Tararuas. Depending on weather conditions, it can take between three to five days to complete. It is recommended for experienced trampers only, and requires good navigation and map reading skills.

The route involves travelling along the open tops and takes in a number of peaks over 1300m, including Mitre (1571 m), which is the highest peak in the park. The open tops section from Pukematawai to Mitre peaks is not marked.

The main overnight shelters are Te Matawai Hut in the west and Mitre Flats Hut next to the Waingawa River in the east. The main alpine huts are Arete Hut (also known as Arete Bivouac) off Arete peak and Tarn Ridge Hut northwest of Girdlestone.¹

Darren stayed at Te Matawai Hut on May 28th and Arete Bivouac on May 29th. Evidence suggests that he left Arete Bivouac on the morning of May 30th but failed to arrive at Holdsworth Lodge on Saturday June 1st as planned.

He was reported overdue to the Police SAR duty officer on June 1st; at that stage he was 2 hours overdue. An initial search of his intended route and hut checks were completed the following day (June 2nd).

An extensive SAR Operation commenced on June 3rd with 9 LandSAR Field Teams deployed to the field by NZDF 3SQN. A local helicopter operator was also utilised. The Enquiry/Investigation phase commenced at the same time to gather relevant information.

Spells of atrocious weather over the duration of the search significantly affected the ability of Teams to complete their taskings; Teams were pulled out of the field on June 4th (3 days into the search) for safety reasons. Search activity recommenced on June 6th.

Significant clues were located on Saturday June 8th; analysis of those clues gave weight to the likelihood that Darren turned back some time after leaving Arete Biv to seek shelter from the weather and dropped into Arete Stream. This area had previously been partially searched, but efforts were reinvested into searching Arete stream and its tributaries; as a result of those activities, Darren was located in Arete Stream by the local helicopter operator on June 12th.

¹ Tararua Northern Crossing Brochure, Department of Conservation

3. Terms of Reference

The agreed outcomes of this review are:

To gain an understanding of the sequence, times of events and key search decisions relating to the Search and Rescue Operation (SAROP) for Darren Myers.

To ascertain the appropriateness of the search and rescue arrangements, capabilities, documentation and procedures utilised for this SAROP, its Incident Management Team (IMT) and SAR teams.

To identify areas of excellence, sufficiency, lack, relevance, appropriateness and those that may need improvement.

To review and consider the appropriateness and/or utility of the following specific aspects of the SAROP with a view to confirming, improving and/or refining SAR documentation, systems, processes, skills, equipment and technology:

- a. The IMT tools and arrangements including search tools, planning, investigation, intelligence, information flow and information analysis used and applied during this SAROP.
- b. The positions and sizes of areas to be searched and the capabilities, teams, skills and equipment applied to those search areas, given the information available at the time.
- c. The ability to scale, resource and support the search with appropriately trained personnel throughout the SAROP.
- d. Search conclusion and transition to the recovery phase (exclude the conduct of the recovery phase itself).
- e. Family and Iwi liaison and support arrangements.
- f. The management of family and other spontaneous volunteers.
- g. The SAR capabilities, skills and equipment of SAR personnel involved.
- h. Media relations.

To identify any skill, equipment, technology, document, process or procedure that may contribute to a significant information and / or performance improvement for this SAROP or a SAROP of this nature.

4. Findings

The IMT tools and arrangements used and applied during this SAROP

The initial action was appropriate and aligned with the Land SAR Response Guidelines and Police Instructions. Search Urgency was assessed appropriately; planning was undertaken collectively and appropriate Hasty taskings were completed. Consultation with LandSAR was timely.

The Operation was managed from a designated Incident Control Point (ICP) which is used specifically for SAR Operations; the facility appropriately accommodates the Incident Management Team (IMT), Comms, and Equipment and also serves as a Staging Area for Team assembly and briefings. Its proximity to the Airport facilitates speedy deployment of teams by air into the field.

The IMT was established promptly at this facility; Police assumed Incident Control; LandSAR members were appointed to key positions within the IMT.

Police Incident Controllers were appointed during all Operational Periods

Planning for the ongoing search commenced in a timely manner; joint consultation was undertaken to determine scenarios which initially concentrated on lineal features along the Northern Crossing route. Search teams were alerted, assembled and deployed. Taskings reflected the scenarios.

OBSERVATIONS

The level of awareness of the Land Search and Rescue Guidelines varied among members appointed to the IMT over the duration of the SAROP.

The level of experience and competence within the IMT also fluctuated; whilst many IMT members were very experienced, some members within the IMT were either untrained in CIMS/MTIR and/or had little to no IMT experience. This adversely affected their ability to function effectively in the IMT.

Operational Timeframes were very long – people were working in the IMT for up to 18 hours for several days in some instances. The resulting fatigue potentially affected the efficiency of the Operation.

Span of control needs to be taken into account to ensure effective management of Search Teams.

Information was gathered and assessed; further enquiries were undertaken to corroborate the relevance and accuracy of information obtained and address gaps and develop the Missing Person Profile.

Enquiries established his previous experience overseas and in NZ, likely behaviours and traits, find locations, scenarios, mobility, survivability etc. Enquiries at the home address further clarified the equipment he was carrying.

As the search progressed, the IMT deduced that that he was unresponsive and most likely immobile; this was fed back to search teams who adapted their search techniques accordingly.

Information from team debriefs and GPS tracks was fed back into Intel. Gaps in coverage were identified and revisited.

IAPs were developed and updated.

Scenarios were developed, taking into account terrain and environmental factors and information that had been gathered about the Missing Person. Subject Matter Experts (SMEs) with thorough knowledge of the Search Area were consulted. The information gathered added weight to the possibility that he had turned back due to the high winds to try to get back to Arete Biv but had not found the hut.

Proportion-based consensus was used to prioritise scenarios and taskings.

Timelines illustrated the chronological sequence of events and the potential impact of each event on his actions after leaving Arete Biv.

Regular planning meetings were undertaken and included aspects important to the ongoing search including safety of searchers. A thorough assessment of what had been done and what needed to be done was undertaken on June 5th when no searching was possible due to the weather; gaps were identified and tasks assigned for investigation/follow-up.

Written taskings were completed for Field Teams and Air Assets including RNZAF for all phases of the Operation.

Taskings were linked to the Objectives of the IAP and focussed primarily on searching corridors of travel.

Briefings were delivered using the GSMEACS format throughout the Operation.

Teams were given leeway to search their allocated areas thoroughly. However, snow conditions significantly affected the time it took for teams to complete their taskings, and resulted in a decision being made on June 6th for 4-day deployments.

No night searching was undertaken for safety reasons.

All Teams were debriefed either over the radio or in person. Written debriefs were undertaken of all Teams and GPX tracks downloaded into SARTrack. Gaps in coverage were identified and fed back into Intel.

A survivability SME was consulted regarding the MP's survivability; her advice was heeded.

Significant clues were photographed and appropriately investigated; search activity was refocussed accordingly, based on the relevance of the clues located.

Helicopter pilots were re-interviewed once it was confirmed that a significant clue (the chocolate wrapper located in Arete Stream) belonged to the MP. Reconsideration of local area knowledge, experience, previous searching of the area and changes to the environment (e.g. snow melt) resulted in located the MP being located deceased on June 12th.

Appropriate updates were provided to District and PNHQ during the Operation.

Search Tools used

SARTrack was used to log information, decisions, actions and to track teams.

OBSERVATION

SARTrack needs a sound base of trained operators who can enter and extract relevant data in a timely manner. Training more SARTrack operators would be beneficial.

Good use was made of a hand-held InfraRed (IR) camera deployed in the helicopter and operated by an experienced operator.

Eagle Technologies provided 3D mapping that aided situational awareness and briefings.

Mobile Locate was used to interrogate the MP's cellphone; no response was obtained.

A Production Order was completed to obtain data from the MP's cellphone. This data was used to refine the search area, reconsider scenarios and reinvest time in some areas.

Teams experienced significant issues with VHF and HF Comms in some areas of the SAROP, primarily Arete Forks and environs. Workarounds were put in place, but teams were often unable to communicate back to the IMT.

OBSERVATIONS

The holiday weekend impacted on the amount of time it took to obtain the cellphone data. Earlier delivery of the information may have allowed the IMT to refine the search area and sooner and re-deploy teams into higher probability areas.

A number of search tools were suggested by people not involved in the search – for example image recognition software, Recco Clothing Tag detector. Better awareness of these and other search tools will be beneficial.

SAR Managers need to be aware of all the tools that are available and helpful for SAROPs including developing technologies.

The positions and sizes of areas to be searched

The Initial Search Area was based on 5 likely scenarios which focussed on corridors of travel from the LKP (Last Known Point).

The Search Area was refined as further intel was obtained and clues located.

Some parts of the “Bike Wheel Model”² were applied to determine the Search Area.

Theoretical travel distance was considered but tempered by the weather the day the MP left Arete Biv.

OBSERVATIONS

Insufficient attention was given to Statistical percentile rings; the 25 percentile highlighted the area to the North of Arete, but this area was only given appropriate attention after significant clues were located in Arete Stream.

Insufficient attention was initially given to timelines; the arrival of a front on the morning the MP left Arete Biv supported the scenario that he turned back to seek shelter. This would have given less weight to areas south of Lancaster and the Waiohine Pinnacles.

Dispersion Angles & Track offset were neither considered nor used. There appears to be little to no understanding by SAR Managers of what these are.

The capabilities of teams, skills and equipment applied to the Search Area

Appropriate Resources were applied, including Dogs, helicopters and LandSAR Field teams. SAR Dogs were deployed into the field to investigate clues.

Appropriate methods were utilised to ensure Team members clearly understood that they were being deployed into an Alpine area, in poor conditions and snow; they were instructed to come equipped for those conditions.

OBSERVATION

Adverse weather conditions significantly affected the ability of teams to complete their taskings; there were several days where there was either limited or no searching completed due to the weather.

The ability to scale, resource and support the search with appropriately trained personnel throughout the SAROP.

Timely requests were made for IMT and Field Team members from neighbouring areas.

The Holiday weekend did not significantly impact on the availability of responders.

The request for NZDF assistance request was timely and in line with Defence requirements and Police MSOPs. 9 teams were inserted into the field on day 2 of the search after the MP had been missing for 48hrs.

Search conclusion and transition to the recovery phase

² Robert J. Koester – Lost Person Behaviour

An independent review of the SAR Operation was undertaken on Monday June 10th. The intent of the review was to evaluate the search effort to date to support decisions around future search activities including suspension.

OBSERVATION

The purpose of the review was not entirely clear to both reviewers. It did not follow agreed processes outlined in Police Instructions.

The File was not in a suitable state for review and the sheer volume of documentation created issues for the reviewers to identify documented evidence of what had been done.

Family and Iwi liaison and support arrangements

Family liaison was managed in accordance with Police Instructions.

A safe environment for the family was provided at the ICP; they were kept up to date with search activities.

The communication with the family was compassionate and appropriate, mindful of the intense interest from the media; the family understood from the outset that the MP may not be located.

Media who were seeking stories from the family were appropriately managed.

The Family have spoken very highly of the searchers.

Police and LandSAR members attended Darren's funeral as a mark of respect.

Appropriate referrals to Victim Support have been made.

Spontaneous volunteers were managed appropriately.

Relevant cultural aspects of the search including sudden death protocols were assigned appropriately to and managed by the local Iwi Liaison Officer.

OBSERVATION

The FLO role ideally should not be undertaken by the Incident Controller during extended SAR Operations. A dedicated FLO has sufficient time to get crucial information from the family without distraction and allows the IC to focus on the management of the SAROP.

The SAR capabilities, skills and equipment of SAR personnel involved.

Search Team Members were selected on specific competence and capability.

Safety was a key consideration for this SAROP. It was made clear in the initial callout to teams that this was an Alpine environment with poor conditions including snow; they were told to come equipped for those conditions. Briefings made it clear that if team members were not confident or didn't have the right gear we weren't to go into the field. Teams demonstrated Dynamic Risk Assessment.

Maps and GPS units were provided to teams; some alpine equipment including tents and ice axes were made available.

OBSERVATION

It was noted that the IMT needs better ways to confirm the capability of search team members. Improvements are required to gain better knowledge of the actual competence, capabilities and currency of each member, particularly for the above-bushline environment.

Media relations

The PIM role within the IMT was not specifically established. The local IC dealt with queries from local media. This did not significantly detract from the IC and role and enhanced existing relationships.

The Media Centre at PNHQ was engaged in a timely manner to coordinate the preparation and dissemination of information to the public.

Stand-ups and media visits to the ICP were managed appropriately.

The ICs disseminated Key messages, including:

- Assurance that the IMT and Team members had not given up hope despite the hostile weather conditions;
- Volunteers were doing most of the work;
- The Operation has sufficient resources;
- The IMT had the right people in the right place;
- Safety of searchers was paramount.

5. Background

5.1 Background to the Operation

Darren Myers was reported overdue from a solo multi-day Northern Crossing of the Tararua Range on Saturday June 1st.

An extensive SAR Operation commenced on June 2nd utilising Police, LandSAR and AREC Volunteers, Defence assets and personnel and a commercial helicopter operator.

The search continued until June 12 when he was located deceased.

5.2 Dates, location, organising agency(s), key people

DATES: Sunday June 1 to Wednesday June 12th 2019

LOCATION: Tararua Forest Park

ORGANISING AGENCY: NZ Police

5.3 Participating organisations

- NZ Police
- LandSAR
- AREC
- Amalgamated Helicopters, Carterton
- NZDF 3SQN

5.4 Operation Scenario

Darren Myers left Arete Bivouac on May 30th intending to head to Tarn Ridge Hut. The weather at the time was extremely windy and deteriorated into rain and snow with the arrival of a southerly front during the morning of May 30th.

Evidence indicates that at some point after leaving Arete Biv, Darren turned around, possibly to return to the hut to shelter from the weather. He did not reach the hut and ended up in the headwaters of Arete Stream where he perished

5.5 Operation Timeline

June 1st Darren Myers was reported overdue (approx. 2 hrs at that stage); a text conversation suggests that he left Arete Bivouac on the morning of Thursday May 30th intending to head to Tarn Ridge Hut.

A 24-hr window was allowed for Darren to vacate the park as rivers and weather may have contributed a delay. Search Urgency assessment indicates a Measured Response. Plans were made for SAR activity the following day in the event that he did not arrive.

June 2nd A helicopter search of huts and his intended route was completed; one search Team was deployed to Tarn Ridge Hut. No sign of him was located, no entry in the Tarn Ridge Hut book. Snow at Tarn Ridge was reported to be 300mm deep.

June 3rd Extensive Search activity commenced including aerial searching including use of an Infrared camera, ground teams and aerial infrared.

Search activity focused on the likely intended route, decision points and areas of possible misadventure.

The Investigation phase commenced. Over the course of the SAROP, a home visit was undertaken, background enquires made, phone data investigated, statements taken. A survivability expert was consulted.

- June 4th** Searching continued; all teams except one at Arete Biv were extracted at the end of the day due to poor weather expected the following day.
- June 5th** No searching was undertaken; comprehensive planning was completed for further investigation and search activity.
- June 6th** Teams were re-deployed for 4-day deployments; Search activity continued but poor weather continued to hamper efforts.
- June 8th** A chocolate wrapper was found in Arete Stream; investigation established that this was highly likely to belong to Darren Meyers.
- Muddy footprints were found in boggy areas leading from Arete Hut and south to high point 1389 – but not beyond.
- June 9th** Analysis of cellphone data from Darren's phone identified areas to the north of Arete Bivouac into headwaters of the Ruamahanga and Mangahao rivers. IMT assessed the information.
- June 10th** Teams were inserted into the Mangahao and Ruamahanga headwaters. Searching continued in Arete Stream.
- June 11th** Poor weather restricted searching.
- June 12th** Aerial and ground searching continued; Amalgamated Helicopters crew located Darren (deceased) in Arete Stream.

6. Evaluation Methodology

6.1 The agreed outcomes of the Review

To make recommendations as appropriate to the New Zealand Search and Rescue Council relevant to improving New Zealand's SAR system, its people, equipment, documentation, skills, processes and procedures.

To develop a 20 – 30 minute case study presentation of the SAROP including recommendations.

6.2 Review scope

Ascertain the appropriateness of the search and rescue arrangements, capabilities, documentation and procedures utilised for this SAROP, its Incident Management Team (IMT) and SAR teams.

Identify areas of excellence, sufficiency, lack, relevance, appropriateness and those that may need improvement.

6.3 Information collection

Notes from the Formal debrief held on August 29;

Electronic and hard copies of Search documentation;

Interviews of several key personnel including Police Incident Controllers, LandSAR IMT members, Police and LandSAR SAR Team members;

Debrief notes from Wairarapa and Wellington.

6.4 The process followed in preparing and submitting the report

This SAROP was reviewed against

- Police Master Standard Operating Procedures (MSOPs)
- Police District Mobilisation Plans (DMPs)
- The Land Search and Rescue Guidelines
- Police Instructions
- Coordinated Incident Management System (CIMS)

The reviewer attended the formal debrief for the SAROP on August 29 2019; this was attended by a number of personnel who had been involved in the search.

The reviewer obtained a number of electronic files relating to the SAR Operation, and was provided with notes from various debriefs.

The reviewer spoke with members of the IMT, Team leaders and Team members and the personnel who reviewed the SAROP.

6.5 Other information

Police Instructions state that a debrief should be held within 21 days of the Operation. However, the significant delay in holding this particular debrief was unavoidable due to unavailability of key personnel. Police Instructions also state that the debrief must be chaired by a senior Police employee or other suitable person who has not been involved in the search.

7. Conclusions

While this search ran into several Operational Periods, it was in reality an Initial Response that took a number of days to complete due to the challenging weather conditions. The challenging weather conditions meant that it took a number of days to comprehensively search the key corridors of travel.

There were limited windows of opportunity to deploy teams into the field; the adverse weather also meant there was a lot of down time where no searching was possible. The IMT managed this appropriately.

Findings have been summarised into Areas of Excellence and Areas needing Improvement.

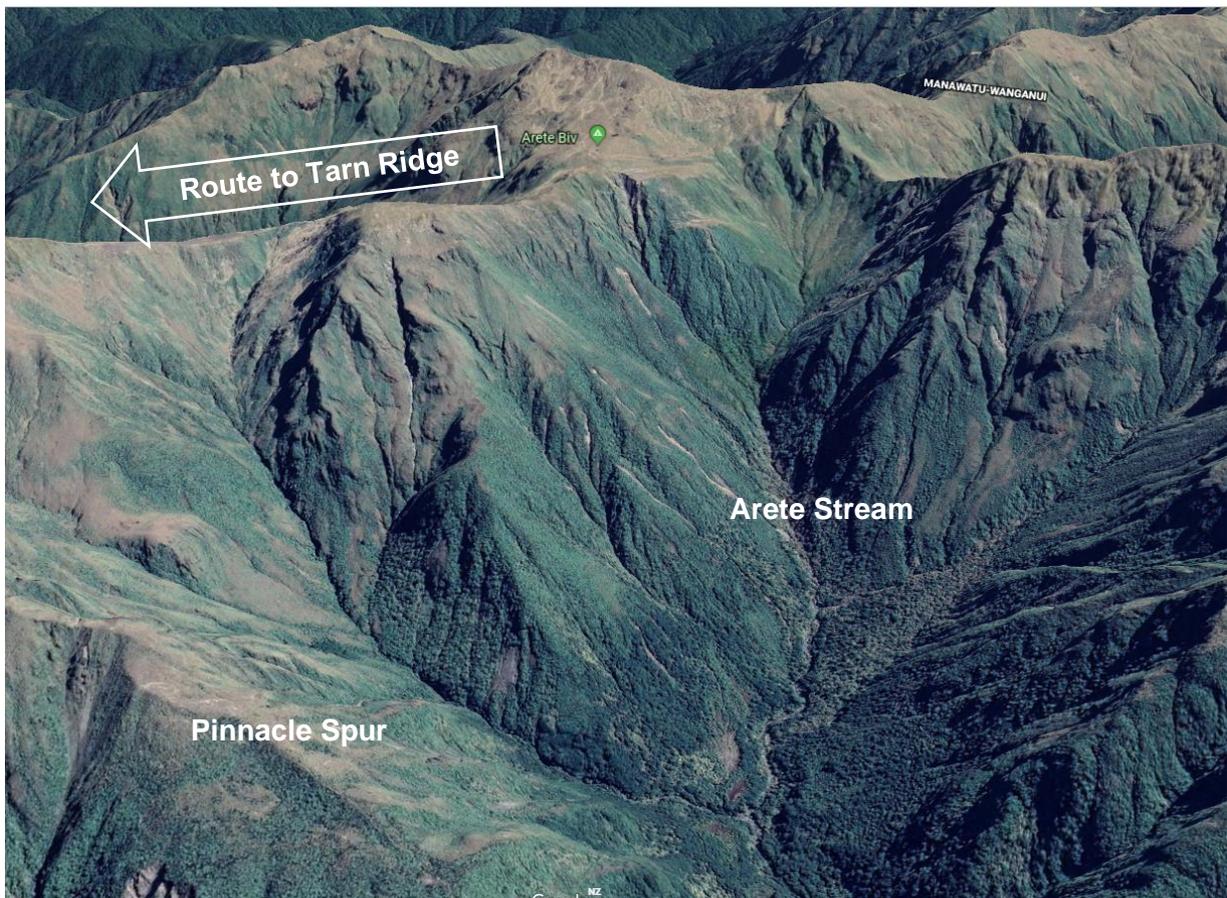
Areas of Excellence – what went well

- The initial action/assessment was timely and aligned to the Land Search and Rescue Guidelines.
- Search planning commenced in a timely manner and demonstrated good practise to identify the MP's potential route, to identify and investigate Decision Points and to search corridors of travel.
- Early requests were made for help from neighbouring Police and LandSAR groups, who responded in a timely manner.
- Good use of 3SQN helicopters was made to deploy teams into the field.
- Investigation to develop the Missing Person profile and the analysis of clues was thorough and comprehensive. Significant clues were shared with key personnel including the local helicopter operator; search effort was appropriately refocussed which resulted in the MP being located.
- The use of the expertise, local area knowledge, experience, and skill of the local helicopter operator.
- The limited windows of opportunity to search were utilised well and illustrated a good balance between the tasks to be undertaken, the state of the environment and the safety of Search Teams.
- Safety of teams was paramount - it was made clear from the beginning of the SAROP that SAR Team members needed to be operationally competent and suitably equipped to operate safely in the environment where they were being deployed. This was reflected in the skills that were specified in the callout and reinforced during briefings.
- Risks were identified & communicated to teams in the GSMEAC briefings.
- Field Team welfare was managed appropriately with accommodation provided for anyone needing to travel long distances home. The IMT provided regular phone updates to the NOK of all searchers in the field. Food and heating were flown into huts for teams.
- Family liaison and support was managed particularly well.
- Media interest was handled well; key messages were disseminated.

Areas needing improvement

- Awareness and application of the Land Search and Rescue Guidelines;
- Capabilities and competency of personnel appointed to key IMT positions;
- Scaling the IMT up during extended SAROPs.
- Management of fatigue within the IMT during extended SAROPs;
- Earlier application of search theory to assist in Search Area Determination.
- Improved awareness of the tools that are available to SAR Managers including developing technologies and processes to interrogate cellphone data;
- Understanding of Police reinstructions for the review of extended and/or complex SAR Operations.

8. Appendix



Source – Google Earth



Photo supplied by Amalgamated Helicopters – Main Range June 3rd 2019



Photo supplied by Masterton LandSAR – June 3rd 2019



Photo supplied by Masterton LandSAR – Tarn Ridge Hut June 9th 2019