Southern SAREX 2016 Operation BIG GLORY

7, 8, 9 October 2016 Hosted by Stewart Island SAR

What does good Planning look like:

A formal "appreciation" of the factors was conducted by S/Const Jenkins leading to well thought out plans for the SAREX. The NZSAR planning guide was also used to focus on the important factors. See appendix . The planning process was completed for the first operational period by the Stewart Island SAR group using the CIMS model and this process supported by the Southern district SAR coordinator.

The purpose of this SAREX

- To practice and test, Intel/Planning, Operations, Logistics, Field team Search methods, Communications systems when searching in isolated difficult Land/marine locations.
- To possibly resolve a 1991 Cold Case and find the remains of lost Hunter Joseph Carl Frieman

SAREX objectives:

I. To test Logistics of moving Search teams to isolated Land/Marine search areas.
II. To test the Incident Management teams ability to Manage Search for Missing hunter/s in an isolated dense undulating Podocarp Forest.
III. To practice and test the capability of search resources
IV. To practice and familiarise the use of the Search management tool SARTRACK
V. To trail the Generic Stewart Island Lost Hunter Preplan.
VI. To familiarise All search personal with LandSAR Health and safety plans and the Health & Safety at Work Act.
VII. To familiarise Southern region Land SAR teams to searching on Stewart Island

EXERCISE OVERVIEW:

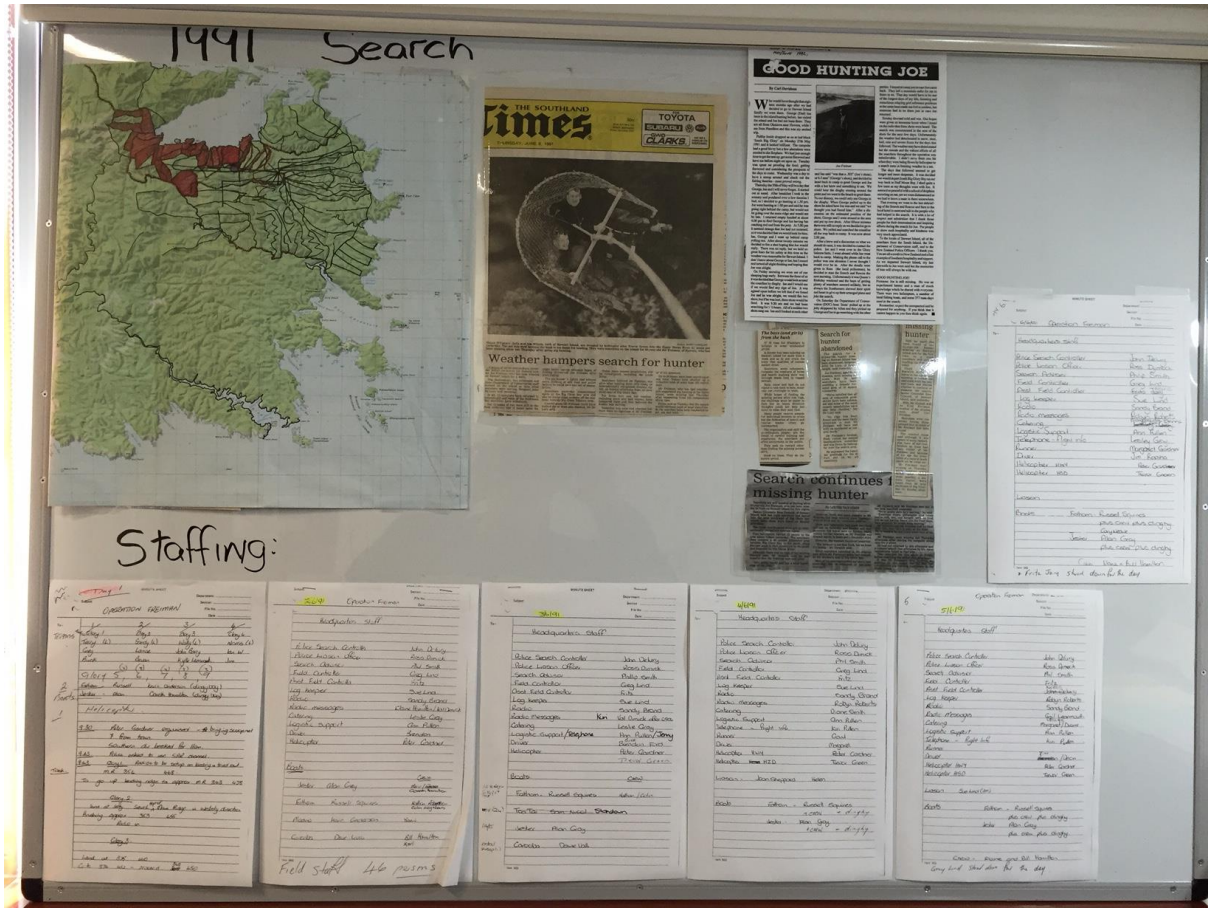
The SAREX will start on Friday the 7th October and finish at 1800 hrs on Sunday 9th October 2016.

The Exercise will be based on the unresolved lost hunter Joseph Carl FRIEMAN who went hunting with three companions at Mid Glory hunting block on Stewart Island on the 27th of May 1991.

At 1300 hrs on Thursday the 30th of May 1991 Joseph went hunting alone behind the Mid Glory camp site. His intentions were to be back at camp before dark. Darkness falls at about 1730 hrs in May. FRIEMAN failed to return from the hunt. An extended search by Search and Rescue commenced the next day which failed to find any sign of FRIEMAN.
Weather at the time of the search was extreme with rain, wind, and snow down to sea level.

Search Location: Big Glory Bay Stewart Island
IPP: NZTM E1227386 N4784204,
NZGD 2000 E168 5.956 S 46 59.441

Mid Glory Hunting Block and surrounding hunting blocks in the search area are forested by a dense undulating podocarp forest. There are some steep ridges and bluffs in search area. It would be an advantage for each team to have a foundation rope trained and equipped person.



Operations & Logistics Overview

Briefing for Field Teams will be held at BLUFF on Friday 7th October prior to ferry travel to Stewart Island at 1630 p.m. **All persons travelling on the Friday 1630 hrs ferry (as per attached spreadsheet). To be at BLUFF Ferry Terminal by 1530 hrs, Friday 7th October.** Persons travelling over on the Friday 0930 hrs ferry sailing (as Per attached spread sheet) will have to be at Bluff Ferry terminal to check in at 0900 hrs.

· Ferry bookings will be made by Stewart Island LandSAR for all persons attending the SAREX

· Vehicle parking at Bluff - Real Journeys have secure parking at a cost. Unsecure car parking in Barrow Street outside the Bluff police station

· Field Teams will be taken direct to Big Glory Bay after a short stop at Halfmoon Bay. They will have to be packed and ready at Bluff to be deployed straight into the field. Sartrack team trackers and batteries will be issued at Halfmoon Bay Wharf

Field Teams: 4 Person teams (1 x team leader and 3 x team members)

· Must be packed and prepared to be deployed into field prior to arrival at Bluff Ferry terminal.

· Must have food, personal gear, and team gear (as per gear list in LandSAR Field Guide) sufficient for 2 x nights in field. Each team member to carry at least 1 x litre of fresh water.

· Each 4 person field team to bring 2 x HF Radios and 2 x batteries. 1 x HF Radio and batteries, first aid, GPS's, PLB (PLB no. to be supplied to IMT), camera. (Maps, Health & Safety, Comms Plan, Lost Person description and Team Tasking will be supplied by IMT at briefing in BLUFF).

Deployment To Big Glory Bay: The area is accessible by boat only and there are no formed campsites, i.e. teams will be tent/fly camping in the field. Water in all creeks is safe and drinkable. All hunting blocks surrounding search area have been booked for "Operation Glory" (i.e. no hunters in area).

· 1630 hrs 07/10/16 Travel by ferry from Bluff to Halfmoon Bay to drop off personal luggage and non-field persons.

· 1800 hrs (approx) Field Teams taken by Ferry directly to Big Glory Bay where they will be dropped off at landing sites by dinghy.

· Search: As per Tasking and Briefing. (Live Sartrack tracking)

Egress from Big Glory

· **Dingy pickup after 0800 hrs Sunday from Landing site.**

· Teams transferred from designated landing sites to staging area IPP by dinghy and delivered to ferry.

· To Ferry 11 a.m. Sunday 9/10/16

· Ferry back to Halfmoon Bay. Walk to Community Centre.

· Teams to be debriefed by Team Leaders prior to arriving at Halfmoon Bay.

· Team Leaders to be debriefed by IMT on arrival at Community Center.

· Showers available at Community Centre.

· 1230hrs Meal then full debrief

· 1430 hrs Travel to Wharf

· 1500hrs Ferry Halfmoon Bay to Bluff

Accommodation for IMT and Support Staff:

· IMT & Support Staff will be accommodated at either the RSA Pavillion, Ayr Street, Oban (Facilities include toilets and kitchen facilities. Showers at the Community Centre. Bring a stretcher/air mattress, sleeping bag); OR at Stewart Island Backpackers. All bookings at the Backpackers will be made by Stewart LandSAR.

· IMT personal to leave ferry at on arrival at Halfmoon Bay.

· Note: If IMT staff want other accommodation visit www.stewartisland.co.nz for available accommodation at market rates at own expense.

· Meals: Operational IMT & Support staff will be catered for. Non-operational IMT & Support Staff self-cater (own Ration Packs).

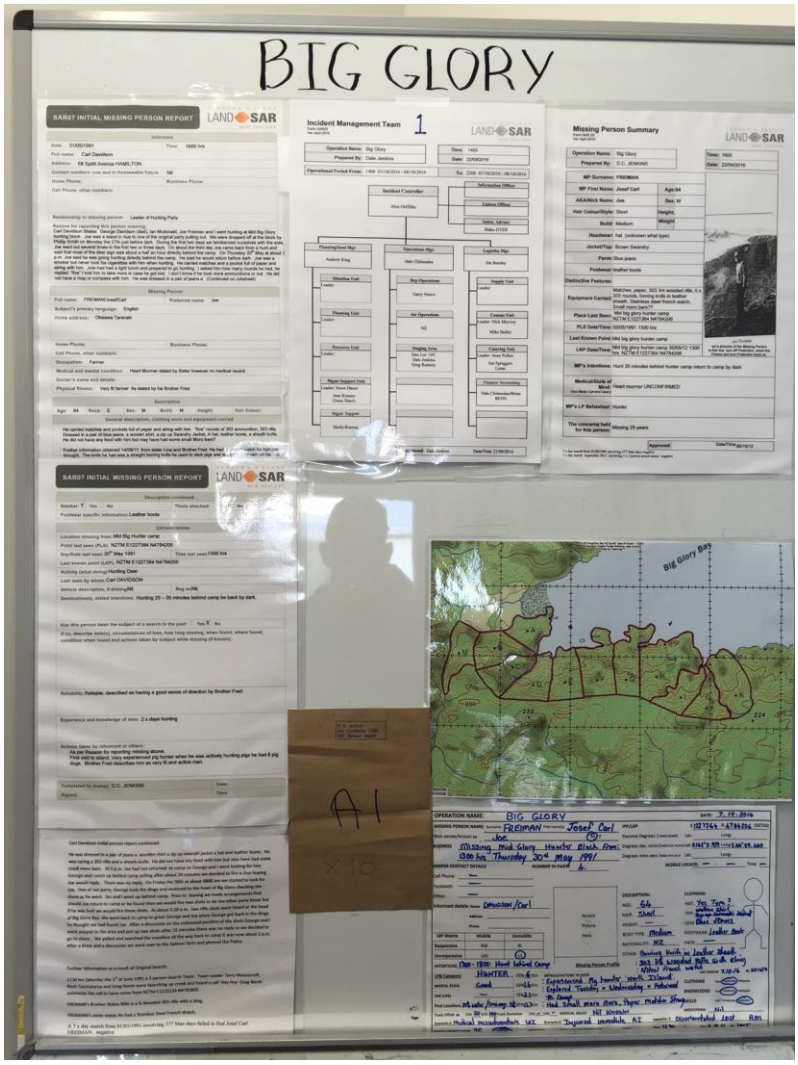
- Lunch supplied to all staff 1230hrs Sunday 9th.
- The Island grocery shop 'Ship to Shore' has all grocery items available.

Stewart Island Backpackers and the Pavilion have well appointed kitchen areas.

What does good briefing look like:

Exercise participants were given good pre exercise information and joining instructions. They were met at the Bluff Ferry terminal were the briefing process was initiated ,while in transit to Stewart Island and upon arrival, radio's and SARTRACK transmitters were provided and the operators were briefed. Field teams were then taken to their search areas and transferred ashore.

Briefing Boards.



Communications Plan

Prepared For:	Stewart Island SAREX 2016
Operational Period Begins:	7 October 2016 1730hrs
Operational Period Ends:	9 October 2016 1730hrs
Prepared By:	Nick McEvoy-Southland AREC

Key Contact Details

Role	Name	Callsign	Landline	Cell	Email/Fax/Other
Incident Controller		Zero Alpha			
Safety Advisor					
Ops Manager					
Search Base		SAR Base			

VHF Comms

	Chan. Name	Chan. ID	Chan #	Notes/Comments
C & C				
Operations	ESB 59	ESB59	5	Repeater will be sited at or about 122999BE 4787626N. Teams will be advised in final brief
Simplex	ESX 07	ESX07	1	For field and administrative use
Air Operations	MSX 27	MSX27	13	Contingency only and subject to change. Teams will be advised if necessary
Marine Ops	Marine 6	MM 06	15	Included for contingency, for coordination of teams with vessels fr insertation and extraction
	Marine 65	MM65	-	For use between base and vessels. Field teams will not require this channel

HF Comms

Chan Name	Sked Time	Notes/Comments
Chan 1	As needed.	Night HF Frequency. Stew…Island base will maintain a 24 hr listening watch
Chan 2	As needed.	Day HF Frequency. Stewart Island base will maintain a 24 hr listening wa…

Notes/Comments

Callsigns will be: BG (Big Glory) ie.. **BG1, BG2, BG3** etc. To **BG10, Staging1** Staging2 Staging3

For HF use, SAR Base will use the callsign **"Stewart Island Base"** to avoid confusion with other SAR operations worldwide. It is expected that VHF Comms will fail at some points during the exercise so … will be HF sets.

In an emergency situation, if you cannot contact SAR Base (on VHF or HF) … on ESX 07,try the DoC 1 repeater (DOC1 or ES116) or Bluff Hill amateur … ("145.775" or similar) to contact SAR Base.

Southern SAREX Emergency response plan

In the event of an emergency, radio communications will be preceded by a call of "No Duff"

A Forward Staging area will be established at the Mid Glory Hunter block camp site (IPP: NZTM E1227386 N4784204, NZGD 2000 E168 5.956 S 46 59.441) The forward Staging area will be manned by 2 x Landsar personal while Field teams are deployed. A boat and Dinghy's, first aid and stretcher will be located at the IPP to allow emergency medical evacuation managed by the IMT.

Team members will be evacuated from designated landing sites by Dingy and transported to IPP for minor first aid or Oban by support boat if required. Critical evacuation will be undertaken by helicopter (flown from Te Anau) by winch.

In the event of a major earthquake, teams are to head to high ground in case of a potential tsunami. IMT will advise once a tsunami risk has ended.

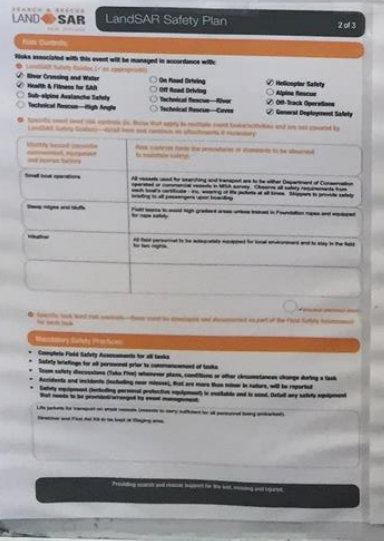
Map of landing sites and IPP (marked L1-L12)

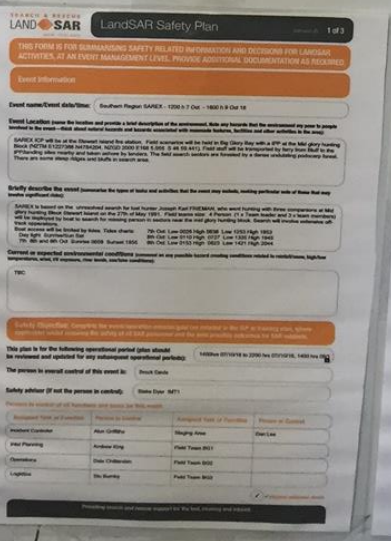
Attending SAREX 2016

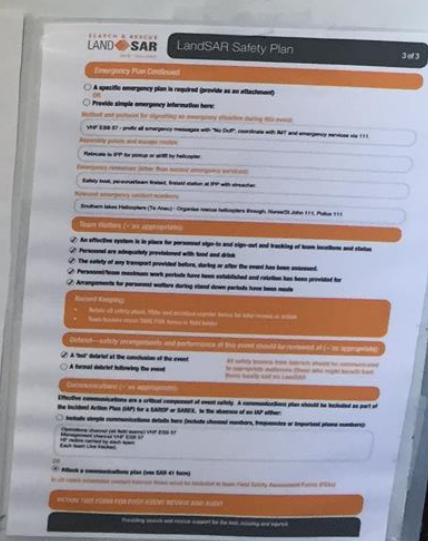
Team	Position	Name	Land Sar Group	Landsar EDB	Email	Phone	Arrival Fri	Depart Sun	Address
Overseer	1	Monitor	Police	1526			After		
Overseer	2	Land Sar Field officer	Landsar CEO	7641			Prior		
Overseer	3	SARTRACS		1961			Prior	Overt	
Overseer	4	Police Observer	Police	4			After		
Overseer	5	Police Observer	Police	7					
Overseer	6	LANDSAR CEO	Landsar CEO	12049					
Overseer	7	Media	Media	8					
Overseer	8	Sergeant	Police	3988					
Overseer	9	NZSAR	NZ Sar	0					
IMT 1	10	EC	Police	3962					
IMT 1	11	Health and Safety advisor	Blake Dyer	RSI	12238				
IMT 1	12	Planning Intel Manager	Andrew King	RSI	3467				
IMT 1	13	operations Manager	Dale Chittenden	RSI	3462				
IMT 1	14	Sector manager	Garry NEAVE	RSI	3471				
IMT 1	15	Logistics Manager		Dunedin	6639				
IMT 1	16	MSU		Wanaka	6723				
IMT 1	17	MSU	Gwen Neave	RSI	7377				
IMT 2	18	MSU		Carlins	6283				
IMT 1	19	Radio		Arec	3				
IMT 1	20	Radio		Arec	2				
IMT 2	21	Operations		Carlins	6290				
IMT 2	22	Radio		Arec	5				
IMT 3	23	EC		Dunedin	5652				
IMT 3	24	Health and Safety advisor	Debe Dillon	RSI	3453				
IMT 3	25	Planning Intel Manager		Southland	2324				
IMT 3	26	operations Manager		Police	2080				
IMT 3	27	Sector manager		Southland	3892				
IMT 3	28	Logistics Manager		Police	2305				
IMT 3	29	MSU		Eastern Southland	6548				
IMT 3	30	MSU		Dunedin	19368				
IMT 3	31	MSU		Eastern Southland	7209				
IMT 3	32	Radio		Arec	8				
IMT 3	33	Radio		Arec	4				
Team 1	34	Team Leader	Paul Haddon	Dunedin	3966				
Team 1	35	Navigator	Ruth Johnson	RSI	12158				
Team 1	36	Radio	Jennifer Roy	RSI	11941				
Team 1	37	First aid	David Cowie	Police	3969				
Team 2	38	Team Leader	Hunter Bay	Eastern Southland	9305				
Team 2	39	Navigator	Kristen Ashton	Eastern Southland	3825				
Team 2	40	Radio	Wayne Wilson	Eastern Southland	6742				
Team 2	41	First aid	Ian Nelson	Eastern Southland	8741				
Team 3	42	Team Leader	Anne Oswald	Eastern Southland	10134				
Team 3	43	Navigator	Simon Roberts	Police	8740	8/2/1973			
Team 3	44	Radio	Jeremy Hendale	North Otago	3092				
Team 3	45	First aid	Bill Cox	North Otago	12153				
Team 4	46	Team Leader	Dugald Carter	Eastern Southland	7369				
Team 4	47	Navigator	Ben Hamilton	Carlins	2877				
Team 4	48	Radio	Andrew Budge	Carlins	12285				
Team 4	49	First aid	Dave Robertson	Dunedin	3946				
Team 5	50	Team Leader	Greg McIntosh	Eastern Southland	9082				
Team 5	51	Navigator	Allann Russell	Waiuku	11703	6/5/1956			
Team 5	52	Radio	Natasha Dickson	Waiuku	10068	7/11/1981			
Team 5	53	First aid	Christy Brewster	Waiuku	9534	19/04/1984			
Team 6	54	Team Leader	Warren Dewhurst	Fiordland	4413				
Team 6	55	Navigator	Russell Durham	Fiordland	4414				
Team 6	56	Radio	Lee Mcfadyen	Fiordland	8487				
Team 6	57	First aid	Gerard Middleton	Fiordland	7283				
Team 7	58	Team Leader	Barry Smith	Southland	3916				
Team 7	59	Navigator	Tim Hawke	Southland	5335				
Team 7	60	Radio	Rodney Harker	Southland	3416				
Team 7	61	First aid	Peter Donnelly	Southland	3976				
Team 8	62	Team Leader	Ian Bailey	Wanaka	2763				
Team 8	63	Navigator	Craig Adams	Wanaka	6723				
Team 8	64	Radio	Nick Rayner	Wanaka	2709				
Team 8	65	First aid	Dione Harrison	Wanaka	7380				
Team 9	66	Team Leader	Mike Johnston	Wanaka	2745				
Team 9	67	Navigator	Paul Sutherland	Wanaka	7288				
Team 9	68	Radio	Rob Dickson	Dunedin	3985				
Team 9	69	First aid	Jan Hanley	Dunedin	9408				
Team 10	70	Team Leader	Glenn Sheridan	Wanaka	2704				
Team 10	71	Navigator	John Burke	Wanaka	4474				
Team 10	72	Radio	Jason Mitchell	Police	11790				
Team 10	73	First aid	Jeremy Tuhaka	Police	9807				
Staging Area	74	Team Leader	Dan Gill	RSI	8492				
Staging Area	75	Diego Perez	Gary Jenkins	RSI	4258				
Staging Area	76	Assistant	Greg Bernard	Carlins					
	77	Catering	Anne Pullen	RSI					
	78	Catering	Jan Spraggon	RSI					

Colour code Accomodation	Colour code Travel	Numbers	Numbers
Airbnb	Friday 0830 Ferry to Oban	7	
	Friday 1030 Ferry to Oban	16	
	Stewart Island Based	8	
Arranging own accomodation	Oban to Bluff return 3 pm	7	
Home	Arrange own travel Accommodation	7	
	Sunday 1300 ferry to Bluff	4	
Roster for IMT	Total	56	
IMT1			
IMT2	1400 -2200 Friday, Saturday		
IMT3	2200-0600 Friday, Saturday		
	0900-1400 Saturday, Sunday		

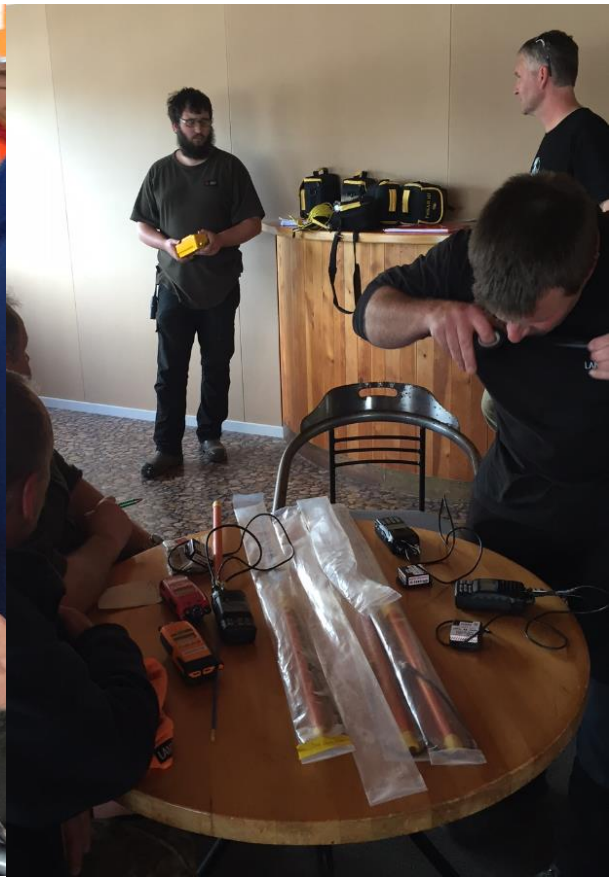
2012 to arrange







Briefing on SAR track transmitters , VHF + HF radio’s



What does a good Incident control Point look like:

The Stewart Island Fire station was used as the search base for this exercise, it proved to be an excellent venue with a large room for IMT members, a separate room for the Radio shack, a small kitchen and a couple of spare offices for break out areas.

An area in the ICP was set aside for observers , media and other interested parties were ushered in and out of the ICP on a several occasions.

The ICP was calm and quiet, providing IMT members a great environment to work. Three shifts were prearranged for each 24 hr period. Early shift 0600 – 1400 and Late shift 1400 – 2200hrs were staffed with an Incident controller, Ops manager and assistant, Planning / Intel manager and a Logistics manager plus 3 MSU assistants and one person to manage the SAR Track system.

The night shift 2200 – 0600 was staffed by an Incident controller plus an assistant. The night shift did not have a lot of work to do but 24/7 coverage by the IMT was considered an important safety issue as we had 39 searchers camping in the field in a remote location.

All participants in this exercise had prior notice of their shift times and their role which gave each person the ability to do their own preparation.

The ICP had 6 computers running on SAR TRACK, one laptop was set up as the server with other machines all hooked together by a wireless router and allocated to the various CIMS functions.

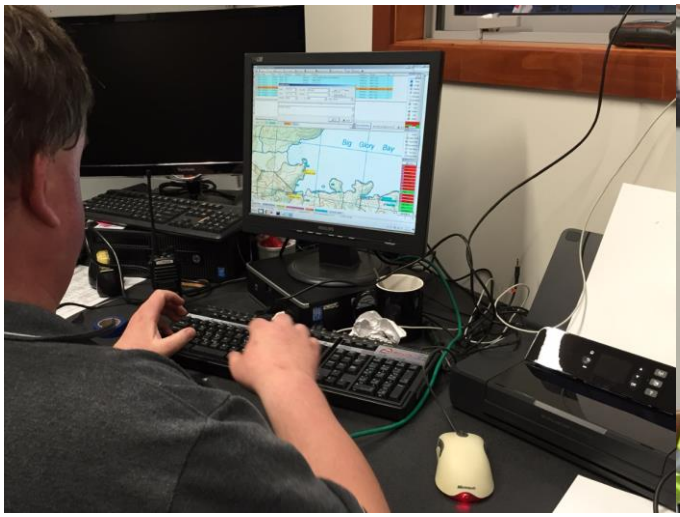
A computer in the radio shack allowed the radio operators to record radio traffic as written messages directly into the SAR track log which was visible in the ICP. The intel manager was tasked with monitoring the messages and prompting any required action. At the completion of the 48hr exercise there were 1849 message entries onto the log.

3 Computers in the ICP were connected to data projectors that were projected onto screens giving good visible to anyone in the room to all of the key information. The data being displayed was able to be changed depending on what the IMT wanted to see.

One of the major advantages of SAR track is the ability to provide remote access to real time information. The developer of the SAR track software, Bart Kindt was monitoring our search from Germany. Several other secure logon's were provided to other locations in NZ and Australia to prove we could run a search in the most remote part of NZ and at the same time allow secure real time access to our information around the world.

A manual backup system was displayed on three white boards the information was updated regularly by the MSU staff. Teams were called on the radio at 4 hr intervals and asked to report their position, progress with their task and any welfare issues. This information was totally separate to the SAR track system and designed to be used as a backup system for HS+E.

One week before the SAREX Stewart Island SAR members walked the search area and randomly dropped 100 envelopes. (10 in each search segment) The position of each envelope was recorded for later comparison with search teams GPS tracks. The clue board resembled a game of "battleships" (my favourite game from the 1970's.)



What does a good IMT look like:

Three shifts were prearranged for each of the two 24 hr periods. Early shift 0600 – 1400 and Late shift 1400 – 2200hrs were staffed with an Incident controller, Ops manager and assistant, Planning / Intel manager and a Logistics manager plus 3 MSU assistants and one person to manage the SAR Track system.

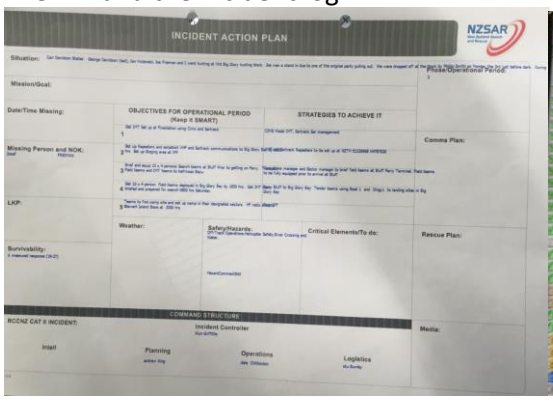
The night shift 2200 – 0600 was staffed by an Incident controller plus an assistant. The night shift did not have a lot of work to do but the 24/7 coverage by the IMT was considered an essential safety measure as we had 39 searchers camping in the field in a remote location. All participants in this exercise had prior notice of their shift times and their role which gave each person the ability to do their own preparation.

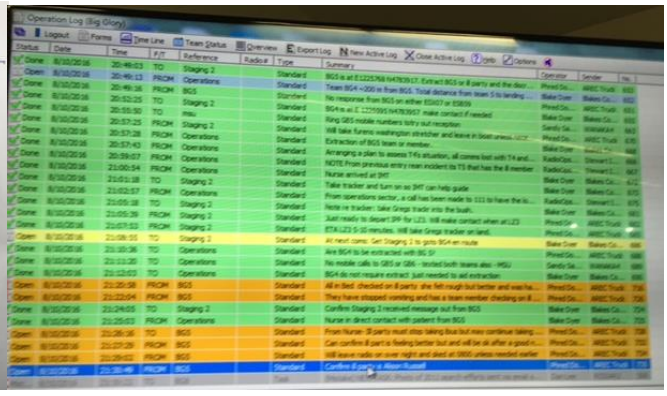
10	IMT 1 I/C	Alun Griffiths
11	Health and Safety adviser	Blake Dyer
12	Planning Intel Manager	Andrew King
13	operations Manager	Dale Chittenden
14	Sector manager	Garry NEAVE
15	Logistics Manager	Stu Burnby
16	MSU	Jean Kenney
17	MSU	Gwen Neave
18	MSU	Shelly Karena
19	Radio	Nick Mcevoy
20	Radio	Mike Bailey
21	Operations	Cindy Dean
22	Radio	Daniel Erickson

23	IMT 2 I/C JOHN GILBERT	
24	Health and Safety adviser	Debs Dillon
25	Planning Intel Manager	Bevan McNaughton
26	operations Manager	Murray Hewitson
27	Sector manager	Stephen Parry
28	Logistics Manager	Aaron Nicholson
29	MSU	Natasha Munro
30	MSU	Lisa Morton
31	MSU	Leah Baron
32	Radio	Stephen Gosling
33	Radio	Brent Solin

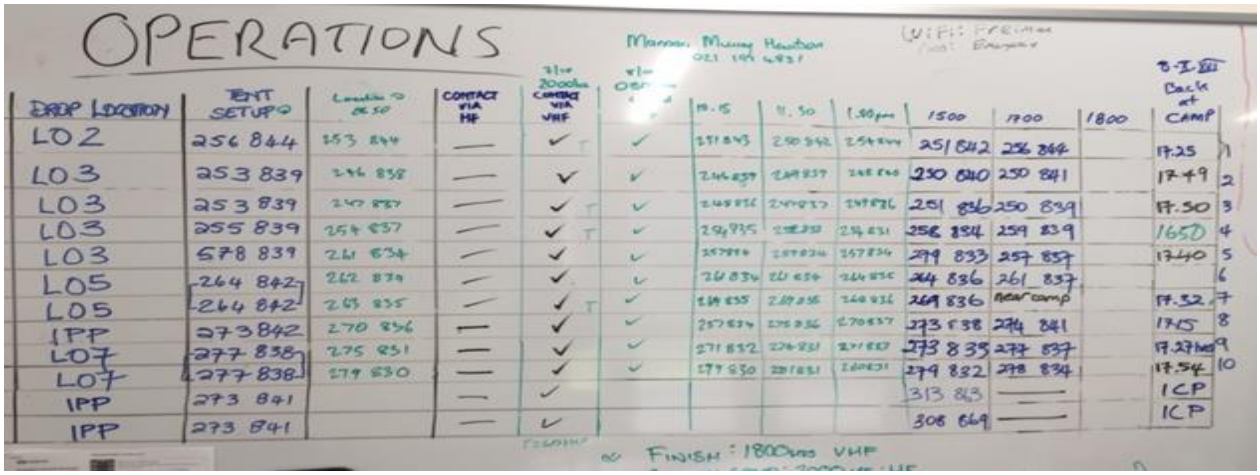
Regular IMT meetings

The IAP and the Incident log…….

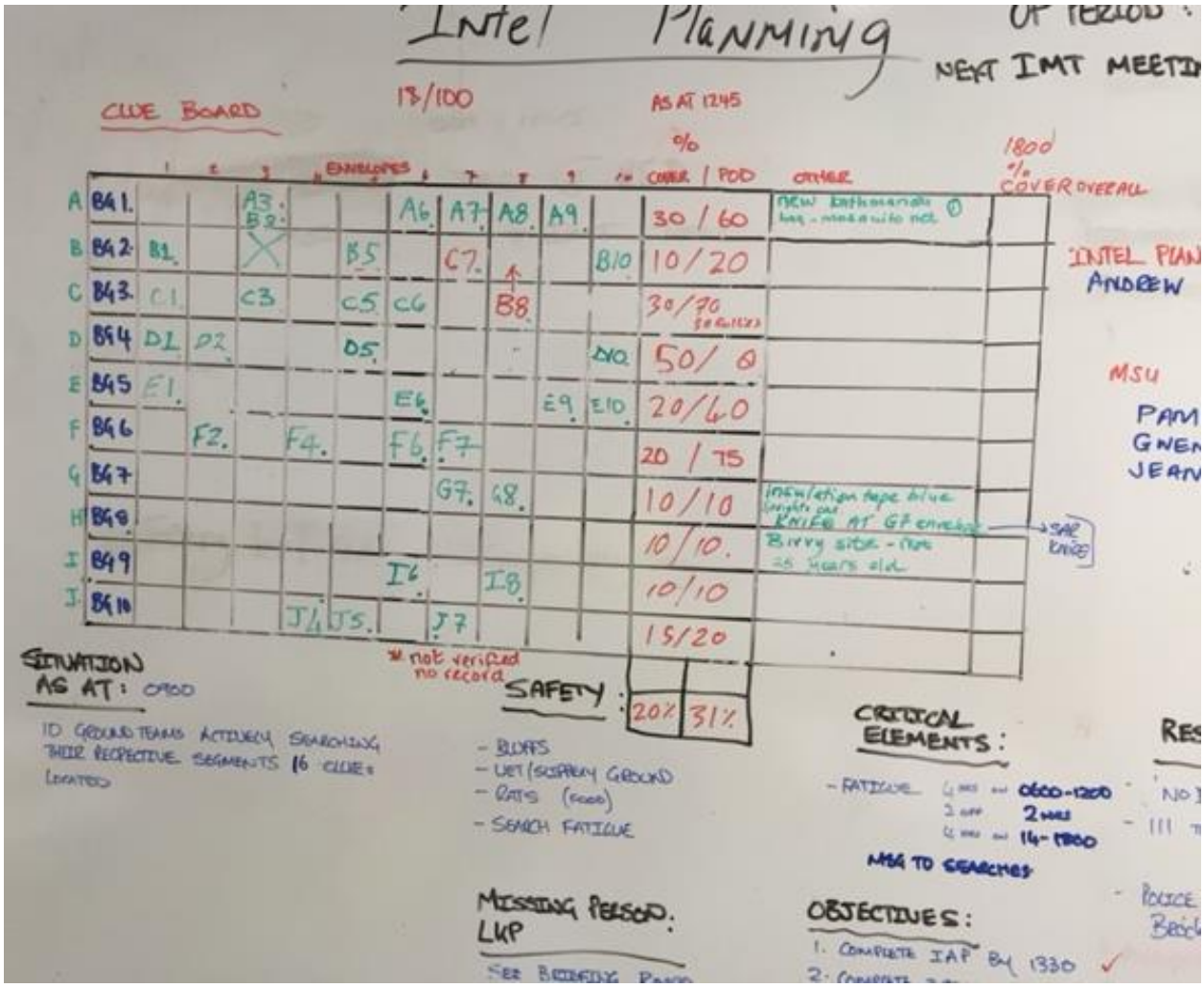




The use of SAR track has many advantages but as with all technology backup systems are a good idea. Key information can be easily read from whiteboards on the walls in the IMT.



Battleships – record finding the envelopes



Well managed shift handover & briefings

Stuart Island Operation “Big Glory” SARTrack analysis

As the developer of the SARTrack system, it is always important to be able to follow a large SAREX and to detect problems and find improvements to the software.

In this case I had limited options, being on the other side of the world; however I would like to report my opinion and findings.

Setup:
The initial setup by Adrian Dance was very lengthy, even with my remote help.
Unknown to us at the beginning, the location where the Tracking receiver and computer where installed had major interference on the radio frequency used by the APRS Tracking system.
As a result many hours where lost trying to discover what was wrong, and in the end this equipment had to be relocated to a property elsewhere in town. As the Voice radio system operates on a totally different frequency, this system worked perfectly.

Due to the time lost with this issue, there was not enough time to set up the local LAN/WIFI for the Local Database Server and all SARTrack clients while I was still available to help. The result of this was that the Local Database Server was not linked to the Internet Database Server during the first day, and I was not able to monitor the operation that day.

However, the local system worked well, which is why the design of having a Local Database Server at the Operation centre is so important.

Operation:
From what I have been able the follow, the use of SARTrack has worked quite well during the Operation. At the time of writing I have not yet been given direct feedback by the users, so I may have to amend my findings.
While there have been some issues relating to the Team information (People, Tasks) no longer being visible in the Team Setup window and an operator deleting Teams during the Operation, the primary Log system and Tracking worked well.

After requesting the Debug files from the Local Database Server and 2 SARTrack clients I was able to trace down some issues which will be rectified in the next Update, including additional safety against human error and the elevation of the required 'Access Level' to 'Supervisor' to perform certain actions, like deleting or clearing Teams.
It also reinforces the importance that appropriate Access Levels are given to all Database Users, most of which should be set as level 'Operations' and only very few as 'Supervisor'. In many cases the access level of 'DataEntry' should be enough.

Recommendations:
As can be read in the documentation on the SARTrack website http://www.sartrack.nz/ most setup issues should be sorted out in advance, by:

Have a permanent / portable WIFI Router with broadband Internet access available which is known to work properly with at least 10 PC's connected to it. Make sure the SIM card has always enough Internet access available.
A permanent Primary laptop computer with the latest Database Server and SARTrack client installed. This laptop should always be the first to go online when an Operation starts, and automatically connect to the WIFI unit above. The initial Operation details can be entered on same laptop, even when it is not yet onsite.
All Database users should have already been entered in the Local Database with the appropriate Access Levels.
All Team members ('People') of the local SAR group should be pre-entered with all their details. It is recommended that members of adjoining SAR Groups are also entered, so when a joint Operation starts, they are immediately available to be assigned to a Team.
When a Permanent Operation Centre and a Remote Operation Centre (in the field) are used, both should have their own Local Database Server, and link to the Internet Database Server to synchronize, as shown at this image: http://www.sartrack.nz/SARTRackNetwork.png
Any VHF Tracking system will require a connection between a (Base) Radio and a SARTrack computer. There should be a permanent combination of SARTrack Laptop & Radio & antenna system available at any time, to prevent setup problems. Possible even in a special suitcase.

Tracking:
Unfortunately not many New Zealand groups will be able to afford the special APRS Tracking system used by Central Otago SAR. This system operates on a commercial frequency in the EE band (funded by SARTrack Limited), and therefore requires the use of Type Approved radios.
Trackers and Digipeaters based on these radios where build by SARTrack Limited in the past, but due to lack of interest and time are no longer being produced.

In most other countries (especially Canada and the USA) Amateur Radio operators are heavily involved, and this allows the use of the APRS tracking system on the Amateur Radio bands, and the use of existing cheap off-the-shelf Trackers.
Some of these are very advanced and can connect to a smartphone via Bluetooth, so Teams in the field have full independent two-way communication to the Operations centre via APRS (without Internet required) including Messages and a Map on which they can see all other Teams and Objects. But as said, this requires Amateur Radio operators to be involved at various levels.

For all New Zealand SAR groups who do not have the APRS Tracking option, SARTrack can also track Teams based on Tait, Icom, Kenwood, Motorola and Hytera commercial radios with build-in GPS or an attached GPS microphone. In the future it may also be possible to transmit Text messages to Teams in the field, IF the rights radios are purchased (*) which enable this option.
SARTrack can also decode Smartphone based trackers and some Satellite Trackers (but this requires Internet access and/or broadband) and AIS Shipping trackers.

Commercial Radio based tracking will never give the same detail as the APRS Trackers (which transmit every 30 seconds to a minute), and the range will generally be less due to the analogue Voice repeaters being used, instead of APRS Digital repeaters.
Still, it may be a good option for many New Zealand groups, and certainly better than having no Tracking option at all.

Finally: The Future.
The SARTrack software has been in development for 9 years now. With enormous amount of developer time and large costs, which are not covered by the occasional donations received.

5000+ copies have been installed all over the world, and users are found amongst Search and Rescue, Civil Defence, Emergency Services, Sheriff Departments and even Red Cross Volunteers.

However, one of the side effects of the heavy development is that proper documentation for the SARTrack software is lacking, as writing a proper manual takes a lot of time which I do not have. When any external funds would become available, this would enable me to hire an external Documentation writer (a specialized job) and have a proper User Manual / Training Manual written. After that, better SARTrack training sessions can be given across New Zealand.

Also, when support for this is forthcoming from New Zealand LandSAR and Police, it will be possible for SARTrack to upload the final results of a SAROP directly into the LandSAR website with a single click of the mouse, with full details included. It may also be possible to do same direct into the Police database system. This will be based on an XML file exchange, already in development by Dave Robertson from Dunedin LandSAR.
It will greatly improve the available statistical data for LandSAR and Police on actual SAR operations, Member hours used, Travel time/costs for Members, etc. and possibly coroner inquests.

If New Zealand LandSAR & Police (and possibly Civil Defence) are serious about using SARTrack, I will be back in New Zealand again from 7 November, and am quite happy to discuss options for the future.

Sincerely,

Bart Kindt
Developer and CEO
SARTrack Limited

(*) The future purchase of new Radios by LandSAR should be in coordination with people and organisations which understand the requirements, as should have been done when the first radios where purchased years ago, while the Tracking or Teams issue was well known at the time. Future radios should possibly be Digital/Analogue radios as used by many SAR organisations in the world now, which have better range and two-way messaging capability.

What does a good Field team look like:

Southern SAR is made up of 11 Land SAR groups and three Policing areas, selecting the forty searchers to be spread across the Ten search teams had the potential to cause problems.

The selection process began with advertising the exercise and circulating invitations to each SAR group and Policing area to nominate qualified searchers to fill the positions.

Each SAR group did their own initial selection process for participants and this resulted 60 applications being submitted to the Stewart Island SAREX IMT for the 40 positions, selections were made by the hosting group's IMT and a draft was circulated followed by several amendments right up to the day of the exercise.

The waiting list worked well for us, the inevitable last minute changes were easily managed and the end result was that we only had one field team position that was not filled.

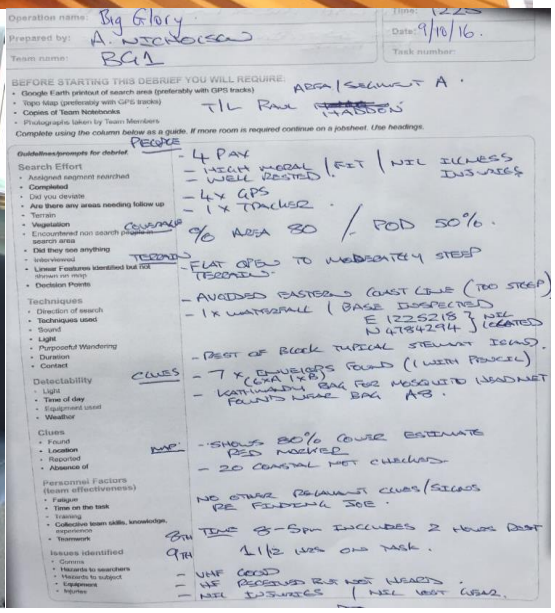
Overall, this process worked very well and we will use this system for future district wide SAREX. Over subscription is a health sign that we are providing a quality SAREX. Allowing the local groups training officer to do the initial screening was a key factor.

Field team members were allocated specific roles.

34	Team Leader	Paul Haddon
35	Navigator	Kath Johnson
36	Radio	Jennifer Ross
37	First aid	David Cowie
38	Team Leader	Aaron Gay
39	Navigator	Alistair Robbie
40	Radio	Naomi Wilson
41	First aid	Ian Wilson
42	Team Leader	Carne Clissold
43	Navigator	Adam Roberts
44	Radio	Danny Fountaine
45	First aid	Johny Gilbert
46	Team Leader	Virginia Carter
47	Navigator	Allan Bichan
48	Radio	Rachael Wilson
49	First aid	Dave Robertson
50	Team Leader	Greg McIntosh
51	Navigator	Alison Russell
52	Radio	Malaika Dickson
53	First aid	Christy Brennan
54	Team Leader	Warren Dewhurst
55	Navigator	Russell Dickson
56	Radio	Les McFadgen
57	First aid	Gerard Middleton
58	Team Leader	Barry Smith
59	Navigator	Erin Hawke
60	Radio	Rodney Barker
61	First aid	John Kennedy
62	Team Leader	Roy Bailey
63	Navigator	Craig Adams
64	Radio	Rich Raynes
65	First aid	Rod Walker
66	Team Leader	Mike Johnston
67	Navigator	Paul Sutherland
68	Radio	Rob Porteous
69	First aid	Ben Mulvey
70	Team Leader	Glenn Sherston
71	Navigator	John Burke
72	Radio	Brent Mitchell
73	First aid	Nick Wells

What does good debriefing look like:

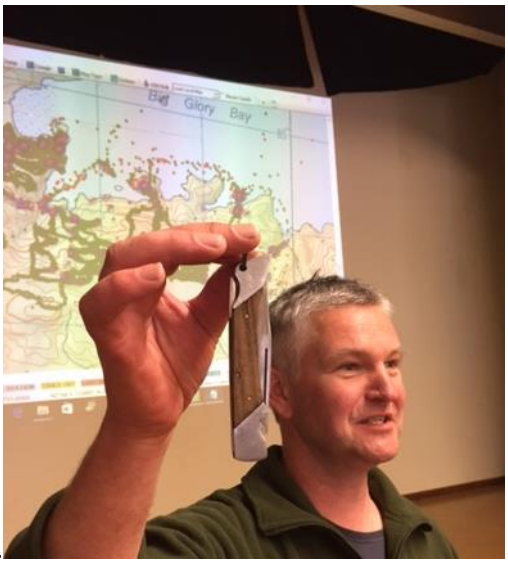
IMT Download all GPS and Interview team leaders using the debrief forms. Highlight any issues and future search tasks….



100 Envelopes were randomly distributed throughout the search area and their location was recorded by GPS then uploaded into the SAR track system, as teams located the clues they recorded the find by pushing a button on the APRS tracker and then made a voice call to search base.

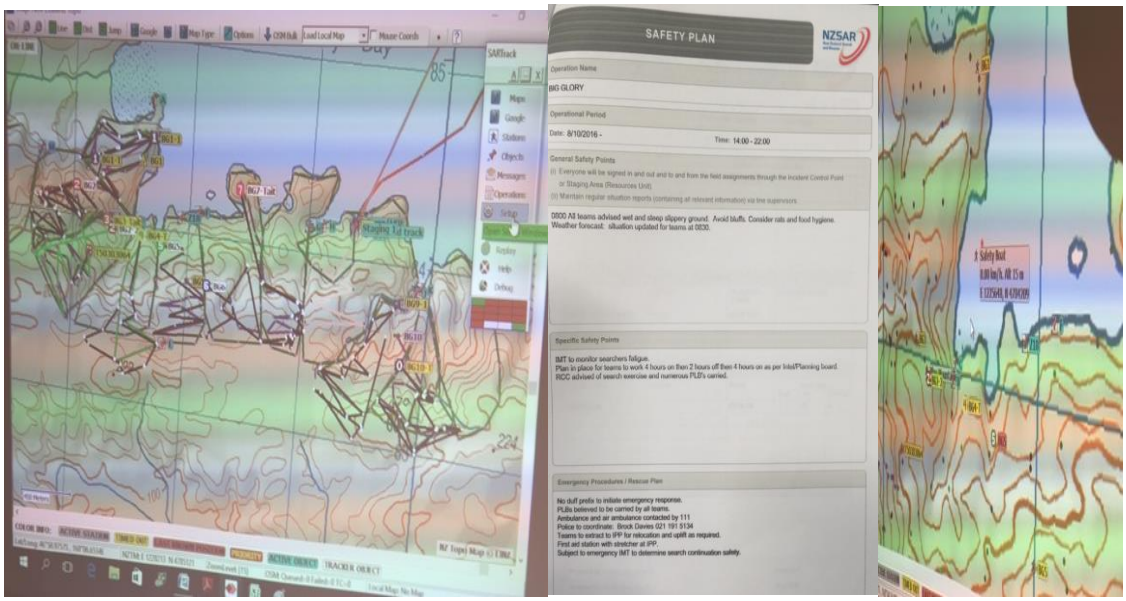
Approximately half of the proposed search area was covered during the exercise and 36 Envelopes were located, by this measure the quality of search was estimated at 72%, this was backup by the other team debriefing methods.

During the process of placing the clue's a pocket knife was lost, during the search of the area it was located and returned to the owner. Another Good measurement of a quality search !!

Dale’s pocket knife……. 

A few days after the exercise a “Survey Monkey” survey was circulated to gauge the level of satisfaction with the SAREX and provide direction for next years event.

What does Good HS&E look like:



The Initial selection of SAREX participants with the required skills using the competencies framework and checking to ensure all participants have the required equipment for the exercise.

All of the hunting blocks in the area were booked for the SAREX

Teams were advised to include at least one members with rope skills and qualifications

Detailed Safety briefing of all participants was carried out in several stages and locations to ensure the right people got the right information at the right time.

Briefing and equipment checks at Bluff and on the ferry across Foveaux strait, radio's and SAR Track transmitters were issued at Halfmoon bay.

Use of the land SAR safety briefing forms to evidence what was delivered.

Take 5 forms by the team leaders

Live tracking of all teams is the biggest step forward in HS&E for SAR, this was backed up by 4 hr sitreps, welfare checks. Team fatigue levels were regularly checked and rest periods were managed by team leaders and monitored by the IMT

Life jackets and specific safety briefs for the transfer of searchers form the ferry to their search areas, both of the boats were under marine survey.

Search manager briefing the VIP's

What does a good spread look like:

Crayfish, Salmon, Venison, Mussels + some Greens….

What does good media management look like:

Invercargill SAR Sgt Brock Davis filled many roles during the SAREX including media manager, local knowledge, search manager for a real SAROP and Relieving Stewart Island Policeman for the duration of the SAREX.

TV3 (NewsHub) showed a 2 minute feature on the 6pm news highlighting the cold case and new technology. TV1 featured a web article on the exercise.

The Southland Times sent a reported to cover the exercise and did articles prior to and post exercise. It was also covered by the NZ herald and the Otago daily Times

The stuff web site put together a 4 minutes documentary feature on the SAREX. Radio NZ covered the exercise.

Thanks to Josie Cochrane at the Police Media Hub and all of the staff who helped showcase the important work that SAR people do.

Search and rescue exercise under way on Stewart Island

WEATHER INVERCARGILL Showers 13C QUEENSTOWN Few showers 15C Inside

Links to the media releases:

http://www.stuff.co.nz/southland-times/85104521/cold-case-reopens-as-s

https://www.tvnz.co.nz/one-news/new-zealand/new-transmission-tool-fails-unearth-clues-into-cold-case-missing-hunter-stewart-island

https://www.police.govt.nz/news/release/stewart-island-sar-exercise-complete-photos-videos

https://www.police.govt.nz/news/release/stewart-island-sar-exercise-test-sartrack-tool

http://www.newshub.co.nz/nznews/search-teams-tackle-stewart-island-cold-case-25-years-on-2016100911

http://www.stuff.co.nz/southland-times/83142187/search-used-worldwide-to-save-lives

http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11724248

https://www.odt.co.nz/regions/southland/search-teams-revisit-stewart-island-cold-case

http://www.radionz.co.nz/news/national/315036/police-use-new-tool-to-search-for-hunter-missing-since-1991

Operation BIG GLORY **Lesson learnt**

1. **On Saturday night teams were asked to provide a Radio Sked at 2000rs during the radio sked teams were asked to provide a welfare check on all team members. One team leader reported one of his team had been unwell and vomiting , now resting in her sleeping bag and being monitored by other team members**

   The IMT read the report on the operational log and wanted more information however shortly after completing the report the team leader turned off their radio to conserve batteries so the management team were unable to make radio contact.

   Attempts to contact other nearby teams had the same result. The safety boat was dispatched to use their loud hailer and get the team to turn their radio back on and once this was achieved and radio contact was established the IMT eventually became satisfied that no further action was needed.

   Attempts to obtain medical history records for the sick searcher highlighted the need to ensure that next of kin details for all Land SAR members are kept up to date.

   The main lesson for SAREX & SAROP is that all field teams is to maintain at least one form of contact with the IMT at all times.

2. **The IMT did not have a radio going in the ICP and were reliant upon reading messages on the event Log. The Intel manager was tasked with reading the message board. There were 1849 messages on the log by the end of the SAREX. I am aware of a few messages that went unnoticed and were not actioned by the IMT. Most of the messages were entered by the two radio operators. Colour coding of priority messages and a system for ensuring information is not missed needs to be developed. Consider putting a Management support person in the radio room to assist with message entry.**

3. **The SAR Track screen displaying the real time location of teams became the focus of search managers during the search. This is understandable given the exercise scenario, however, the IMT must keep focused on the Incident action plan.**

4. **The Friday evening "HF" radio sked with field teams was not successful, probably due to being too close to the receiving station. On Saturday evening some field teams were able to make contact with a Dunedin SAR person by HF. Field teams need to continue to train in the use of HF radio.**

5. **The successful use of SAR track during SAROPS will require a larger IMT than we have been used to in the past, they will need the technical skills needed to problem solve issues such as the SAR track repeater located in Big Glory bay had to be moved to provide full coverage of all teams and The SAR track Local Database Server was not linked to the Internet Database Server during the first day of the exercise. See Bart Kindt's report for more details**

6. **The quality of preplanning is the main factor for the success of SAREX and SAROPS**

APENDIX:

Survey Monkey Results:

Summary:
41 responses
87% said the level of challenge was about right
99% of participants were Very Satisfied with the SAREX

Operation BIG GLORY

- Analyze Results
- Collect Responses
- Design Survey
- Summary

RESPONDENTS: 41 of 41
Share AllExport All

- Ü Question Summaries
- t Data Trends

- Individual Responses

PAGE 1

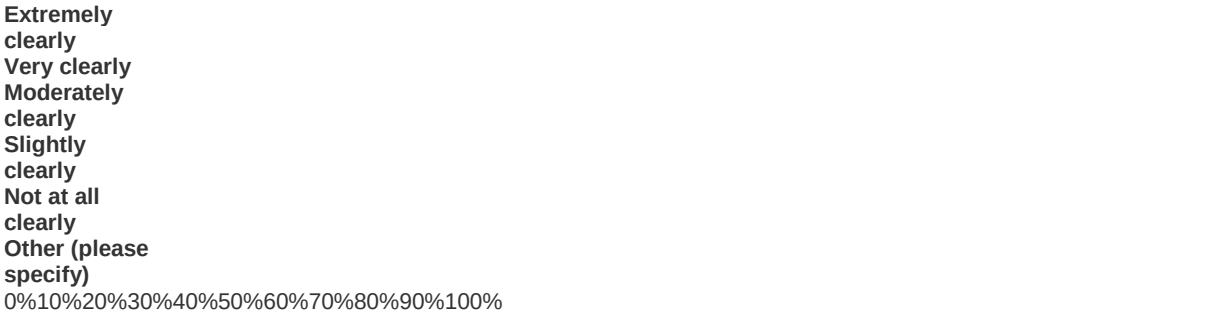
Q1

Export

Customize

How clearly was the PRE SAREX information presented ?

- Answered: 41
- Skipped: 0



Answer Choices	Responses
Extremely clearly	26.83% 11
Very clearly	60.98% 25
Moderately clearly	9.76% 4
Slightly clearly	0.00% 0
Not at all clearly	0.00% 0
Responses Other (please specify)	2.44% 1
Total	41

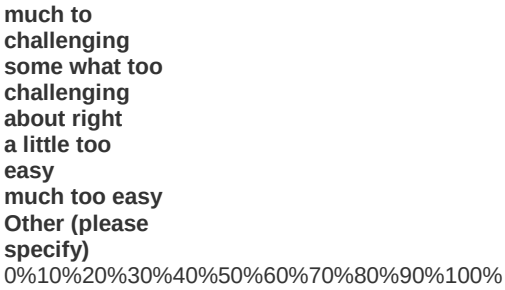
Q2

Export

Customize

Was the SAREX too challenging, too easy, or about right

- Answered: 40
- Skipped: 1



Answer Choices	Responses
much to challenging	0.00% 0
some what too challenging	2.50% 1
about right	87.50% 35
a little too easy	5.00% 2
much too easy	0.00% 0
Responses Other (please specify)	5.00% 2
Total	40

Q3

Export

Customize

How clear were the objectives of this SAREX

- Answered: 41
- Skipped: 0

Extremely clearQuite clear
Moderately
clear
slightly clear
Not at all
clear
0%10%20%30%40%50%60%70%80%90%100%

Answer Choices	Responses
Extremely clear	53.66% 22
Quite clear	39.02% 16
Moderately clear	4.88% 2
slightly clear	2.44% 1
Not at all clear	0.00% 0
Total	41

Q4

Export

Customize

Overall, were you satisfied or dissatisfied with this SAREX

- Answered: 40
- Skipped: 1

Extremely
satisfied
Very satisfied
Somewhat

satisfied
Somewhat
dissatisfied
very
dissatisfied
0%10%20%30%40%50%60%70%80%90%100%

Answer Choices	Responses
Extremely satisfied	47.50% 19
Very satisfied	52.50% 21
Somewhat satisfied	0.00% 0
Somewhat dissatisfied	0.00% 0
very dissatisfied	0.00% 0
Total	40

Q5

Export

Customize

For next year's SAREX would you prefer a traditional style SAREX such as this one or a Rogain style SAREX

- Answered: 41
- Skipped: 0

traditionalRogain
Other (please
specify)
0%10%20%30%40%50%60%70%80%90%100%

Answer Choices	Responses
traditional	73.17% 30
Rogain	9.76% 4
Responses Other (please specify)	17.07% 7
Total	41

Q6

Export

Customize

How organised was the SAREX

- Answered: 41
- Skipped: 0

extremley well
organised
very well
organised
about averagebelow average
Not at all
organised
Other (please

specify)
0%10%20%30%40%50%60%70%80%90%100%

Answer Choices	Responses
extremley well organised	58.54% 24
very well organised	39.02% 16
about average	2.44% 1
below average	0.00% 0
Not at all organised	0.00% 0
Responses Other (please specify)	0.00% 0
Total	41

Q7

Export

Customize

Overall, how would you rate this SAREX

- Answered: 41
- Skipped: 0

ExcellentVery goodAveragebelow averagePoor
Other (please
specify)
0%10%20%30%40%50%60%70%80%90%100%

Answer Choices	Responses
Excellent	56.10% 23
Very good	43.90% 18
Average	0.00% 0
below average	0.00% 0
Poor	0.00% 0
Responses Other (please specify)	0.00% 0
Total	41

Q8

Export

Customize

How useful was this SAREX towards your SAR training needs

- Answered: 41
- Skipped: 0

Extremely useful
Quite useful
moderately usful
slightly useful
not at all useful
Other (please specify)
0%10%20%30%40%50%60%70%80%90%100%

Answer Choices	Responses
Extremely useful	39.02% 16
Quite useful	43.90% 18
moderately usful	14.63% 6
slightly useful	2.44% 1
not at all useful	0.00% 0
Responses Other (please specify)	0.00% 0
Total	41

Q9

Export

Customize

What was your role in the SAREX

- Answered: 41
- Skipped: 0

IMTField team
Other (please specify)
0%10%20%30%40%50%60%70%80%90%100%

Answer Choices	Responses
IMT	34.15% 14
Field team	43.90% 18
Responses Other (please specify)	21.95% 9
Total	41

SAREX Guidelines

Analyse SAREX Need

1. **Establish SAREX planning**

NZ Police
Landsar (Mike Ambrose)
AREC (Nick Mcevoy)
Rakiura Stewart Island Landsar
Bluff Coastguard

2. **Identify Trends and predictions response need and asset assessment**

Trends and Predictions

- Continued constant incidence of Lost/Injured/ Deceased Hunters in Southern Region.
- Most outdoor activity expected to remain constant.
- Predicted incidents will be Moderate/Serious/Fatal. (Fatal Hunting incident 23/03/15 Abrahams Stewart island) (Fatal Hunting incident 15/04/14 Longwood's Southland) (Numerous search for lost hunters throughout Southern SAR District.)
- Use of Doc and Rakiura Maori Land hunting blocks on Stewart Island predicted to remain constant or Increase.
- Recent Search's on Stewart Island have required the coordinated use of Police, Landsar, Marine and Air assets.
- Terrain on Stewart Island is Isolated, thick coastal Podocarp vegetation which extremely difficult to navigate and is usually affected by changeable extreme weather patterns.
- Active missing person file for Hunter lost and still not located in proposed SAREX location.

Response needs

- Day/night and all weather capability for Sar response to Isolated parts of Stewart island and Southland where hunters frequent...
- Small active Landsar Group on Stewart Island which requires the support of surrounding Landsar/Arec/Coastguard/Police groups to manage Serious and prolonged SAR incidents.
- Injured/fatal/lost hunters in both Forrest and the marine environment.

Asset Assessment

- Generic preplan for lost hunter on Stewart island to be tested.

3. Summarise Need

The Continued constant incidence of Lost/Injured/ Deceased Hunters in the Southern SAR Region requires increased training to improve skills and system management in both the land and marine environment. To successfully find/locate Lost/injured/deceased hunters trampers/kayakers.

4. Specify the purpose of this SAREX
    - To practice and test, Intel/Planning, Operations, Logistics, Field team Search methods, Communications, and systems when searching in isolated difficult Land/marine locations.
    - To possibly resolve a 1991 Cold Case and find the remains of lost Hunter Joseph Carl Frieman.

5. Determine Specific SAREX objectives:
    VIII. To test Logistics of moving Search teams to isolated Land/Marine search areas.
    IX. To test the Incident Management teams ability to Manage Search for Missing hunter/s in an isolated dense undulating Podocarp Forest.
    X. To practice and test the capability of search resources
    XI. To practice and familiarise the use of the Search management tool SARTRACK
    XII. To trail the Generic Stewart Island Lost Hunter Preplan.
    XIII. To familiarise All search personal with LandSAR Health and safety plans and the Health & Safety at Work Act.
    XIV. To familiarise Southern region Landsar teams to searching on Stewart Island

6. Select exercise name: GLORY

7. Establish the Budget: $10,000.00

8. Obtain Lead/Joint Agency Authority. Police District Commander sign off

9. Seek Lead/Joint agency participation plus phone calls:

    - NZ Police
    - Landsar
    - St Johns/Prime
    - Coast Guard
    - Department of conservation
    - AREC

10. Set key Performance indicators (KPIs)
    I. Incident management team and Monitors produce reports on Management performance
    II. Update Lost hunter preplan
    III. Search resources are measured against active and passive search methods. (Numbered Clues placed in each teams search area to test probability of success.)
    IV. Preplan amended.
    V. All search documentation completed to an operational standard to attach to the Police Frieman Cold case missing person file.
    VI. Health and safety Plan test and records of all incidents/misses and near misses captured and recorded

11. Develop exercise scenario.

- See attached Initial Missing person report for Unresolved 1991 Cold Case Joseph Carl FRIEMAN.

12. Evaluate plan against training needs: Meets needs and a SAREX is appropriate

13. Exercise Controllers

    15 staff 3 x incident Management teams (I/C,IP,O,Log, Safety officer)
    6 x AREC Staff 2 per shift
    9 x MSU unites 3 per shift
    40 Maximum of 10 x 3 person search teams (T/L 10 T/M 30)
    Staging area 3 x Dingy and Dingy persons.
    2 x Forward Staging Managers
    2 x Monitors
    St Johns/Prime (Standby)

    2 x Repeaters
    VHF Radios 2 per team.

    IMT Computers

    77 Persons in Total (11 x persons from Stewart Island)

14. Confirm Announce Exercise: 1530 hrs 7/10/16 to 1730 hrs 9/1016 Location Stewart Island

15. Develop Detailed events: Detailed Operation plan to be developed by Dale Jenkins

16. Develop Exercise Safety Plan: To be completed by Dale Jenkins

17. Develop exercise control rules: ????

18. Appoint Exercise Monitors (local and external) and define their role:

External Monitor:	Brian BENN
Incident Management team Activities/Systems:	Brian BENN

19. Confirm Multi Agency Participation:
    a. Police Confirmed
    b. Landsar Confirmed
    c. AREC Confirmed
    d. St John/Prime Standby