Canterbury-Tasman Avalanche SARX 2014

OPERATION COLLABORATE

Canterbury and Tasman Police Districts have a prime responsibility to respond to Avalanche Incidents within in its policing boundaries of the Southern Alps. The response is generally from the Alpine Cliff Rescue Teams (ACR) The primary role of the group is to provide a rapid response to avalanche and other incidents that may occur in the mountains.

The Southern Alps is an isolated area of mountainous country. During the year Department of Conservation (DOC) Aoraki Mount Cook, Christchurch ACR and Fox ACR provide a 24/7 rescue service in the area. During the winter months this response can be limited.

Their are various organizations involved including the Police, Department of Conservation, LandSAR(ACR), New Zealand Mountain Guides Association (NZMGA), Guiding and Heli Ski Companies, Helicopter Operators, Airforce 3 squadron and Avalanche Dogs.

Recent Operations have involved both the Mt Cook SAR team working with the West Coast SAR team. Whilst these have been successful there have been some learning points and areas for improvement identified. A combined training exercise will improve operational cohesion between the two areas. As a result Sergeant Judd and I believe that a SAREX to test the ACR teams is required to evaluate the level of skill and the teams ability to work together.

NEEDS ASSESSMENT

Risk / Hazard

- Various recreation and commercial users are going into the mountainous areas of the Southern Alps to undertake activities in the snow.
- The mountains in the Alps have at times under the right snow conditions a high avalanche risk.
- The weather conditions and environment make it imperative that a rapid and appropriate response is sent to any incident.
- There has been an increase in the number of recreational users accessing these remote areas.

EXERCISE NAME

Due to the nature of the operation it will be called 'Operation Collaborate'.

PURPOSE STATEMENT

Exercise Aim:
To practically test the Alpine Cliff Rescue Teams and evaluate there core skills during the operation

Scenario:
An avalanche incident involving multiple burials of back country users above an altitude of 2500m and in glaciated terrain

Date:
Saturday 7th June or Sunday 8th June 2014.

Alternate bad weather day – Saturday 14h or 15th June 2014

Location:
Aoraki Mt Cook National Park

Response Lead Agency:
New Zealand Police

Exercise Writing Lead Agency:
New Zealand Police

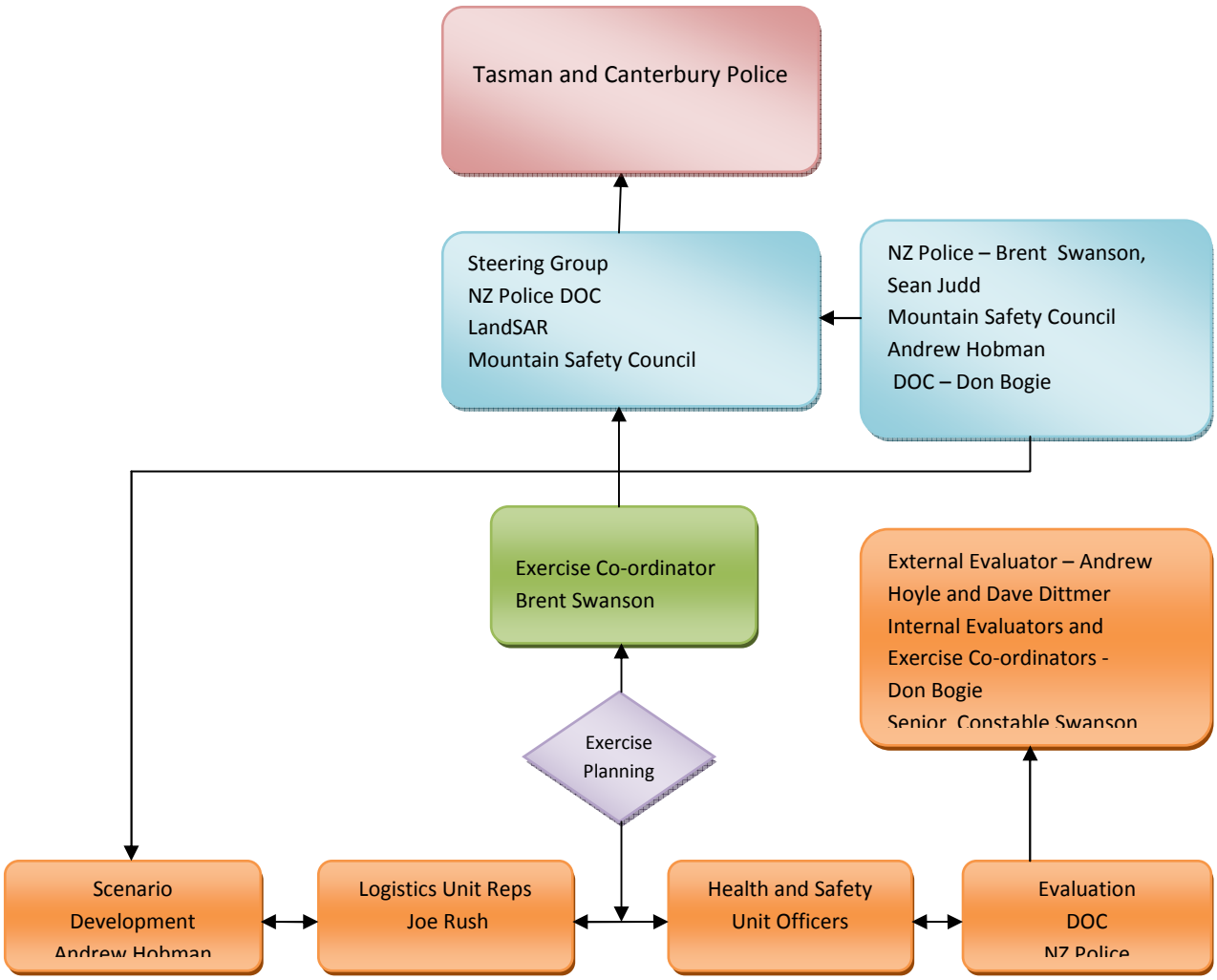
SAR Participating Agencies:

- NZ Police
- LandSAR - ACR teams
- The Helicopter Line and Tekapo Helicopters
- Department of Conservation
- New Zealand Mountain Safety
- Royal New Zealand Airforce 3 Sqn
- NZMGA
- NZ Avalanche Dogs
- Guiding Companies

Budget Provider:

NZ SAR Secretariat (Administration and planning)

Governance Structure:



EXERCISE GENERAL RULES

SITUATION

On Saturday 7th June 2014 five ACR Teams will participate in a full scale Avalanche Search and Rescue Exercise involving members of local SAR agencies, named in the statement of Purpose.

MISSION

To enhance area Search and Rescue incident management capability and avalanche rescue in a full scale SAREX within the Southern Alps, in order to develop best practice guidelines to help achieve national consistency.

EXECUTION

General Outline

The exercise will be conducted in 3 phases:

- **Phase 1 Briefing:** A briefing will be held at the exercise venues at Fox and Aoraki Mt Cook Village. All exercise participants will need to be on standby at these locations. When participants arrive at their respective locations they need to sign in on form provided and are on standby to receive a full exercise brief from Exercise Coordinators to familiarise participants with the rules etc for the exercise and to provide them with sufficient information with which to successfully participate in the exercise. Once the briefings have finished the exercise will commence.

- **Phase 2 Exercise** The Exercise will start immediately after the exercise briefing and will start in a Reflex Action stage. At this stage a full Incident Management team will not be set up, this will allow real time tasking and realistic scenario role play to happen. Approx 30 minutes into the Scenario a full Incident Management Team (IMT) at Fox will be set up. This will more than likely be then set up at the Incident Control Point (ICP). (For full diagrams of command and control structures for all participants see Command and Signals)

- By this stage all personnel will be broken down and assigned tasks and roles. The session will comprise of a number of simulated scenarios to be managed by personnel present as per CIMS. Only one ICP will be established. An Avalanche Scene Coordinator (ASC) will need to be appointed.

- **Phase 3 Debrief** A full Hot debrief on the day's activities will be carried out on completion of each part of the exercise. The aim of the debriefs are to identify what

did not go well and to work out 'best practice guidelines. Asking and getting feedback from participants on:

- What went well?
- What did not go well?
- If you could do it again what if anything would you change?

Participants are encouraged to be open and honest during debrief and to relay constructive criticism if deserved.

Conduct of Exercise

The exercise will be conducted as follows:

- The exercise will be coordinated by an Exercise Coordination team lead by the Exercise Director namely Brent Swanson, NZ Police. Sergeant Judd will Coordinate the Fox side of the operation.

- The Exercise Coordination team will be facilitate the various scenarios and will be responsible for:
  - Initiating the Exercise
  - Coordinating the role players
  - Monitoring performance and providing guidance and or tuition on operational matters when required using a 'Time-out' facility.

- The Incident Control point (ICP) will be set up at the discretion of the Incident Controller and will be resourced by exercising participations maps and documentation – **please come prepared.**

- The formation of the Incident Management Teams (IMT's) will occur as and when required.

- All SAR resources will need to be briefed prior to deployment; this will either be a written or verbal brief.

- All scenarios will require some degree of investigation and intelligence analysis to formulate an Incident Action Plan (IAP). Role playing witnesses and other SAR personnel will be available to be spoken to or interviewed to gain information either via comms or personally. The scenarios have been designed to represent reality as much as possible so all participants need to be aware that they may in fact be talking to real people.

- Witness interviews can be conducted by way of either cell phone, landline or face to face after arranging a convenient time – it is expected that all information gathered will be recorded in either statement or jobsheet format or at the very least documented in a note book – **so come prepared** – complete, accurate and reliable information is required.

- SAR Agencies can be communicated with using VHF radios, personally or by telephone – radio call signs and frequencies using a working channel (to be advised)

throughout the exercise. Please note all comms need to be prefixed with **SAREX SAREX**. Brent Swanson will inform Police Comms.

- The exercise will be conducted using CIMS with all members of the IMT having assigned roles and responsibilities – vests will be worn to identify the functional unit to which they belong.

- It is expected that members of the IMT will perform only those tasks required of their assigned role under CIMS but may be rotated under the advice from the Exercise Director. During the exercise the Director will be monitoring this aspect of the exercise.

- This in some cases could be a learning exercise so all personnel are encouraged to seek clarification of actions taken from the Director where required or to utilise the 'Time-Out' facility where a wider group or team discussion is required to fill a learning gap or realign the team's efforts with search management best practice.

SAFETY BRIEF

- The emphasis during the entire Exercise is **SAFETY FIRST.**

- At no time should anyone take any unnecessary risks that could endanger any Exercise participants or cause damage to any helicopter or equipment. Any accidents or incidents that occur need to be reported to the Safety Officer at Exercise control as soon as possible.

- Any safety issues arising during the SAREX will be managed according to the respective groups Heath and Safety plan.

- All groups and any other Agency or Group participating in the Exercise are directly responsible for their own personnel.

- All Radio traffic will be prefixed with '**SAREX SAREX'** and in the event of a real time emergency the Prefix '**NO DUFF NO DUFF'** is to be used.

- All normal Radio channels will be monitored and the exercise channel (to be advised) will be used for all SAREX communications.

- Communication between Exercise Coordination will be via cellphone.

- All participants of the exercise are to fully prepared for the exercise and dress accordingly. Each person will have personal rescue equipment including avalanche transceiver, probe and shovel and personal climbing equipment.

- Standing Operating Procedures must be followed at all times.

- Each Participant needs to complete a contact form to acknowledge they have received this brief and to put their contact details down. Participants need to sign in and out if leaving the exercise.

Exercise Control number is Brent Swanson [redacted] and Sergeant Judd [redacted]

EXERCISE OBJECTIVES

The operational objectives are:

- To enhance multi-agency and inter-group coordination between the participating agencies and their support agencies and personnel within the Tasman and Canterbury Police Districts in the event of an Avalanche Search and Rescue incident.

- To provide all participants the opportunity to refresh and practice their search and rescue incident management knowledge and skills during a full scale operational exercise previously learnt during Avalanche training, CIMS courses, Avalanche SAR Controller courses and through own experiences and to identify gaps and areas that need further development.

- To ensure value is delivered for all personnel involved.

[redacted]

ADMINISTRATION AND LOGISTICS

Meals

To be provided by personnel . A meal will be provided at Fox and Aoraki Mt Cook after the exercise.

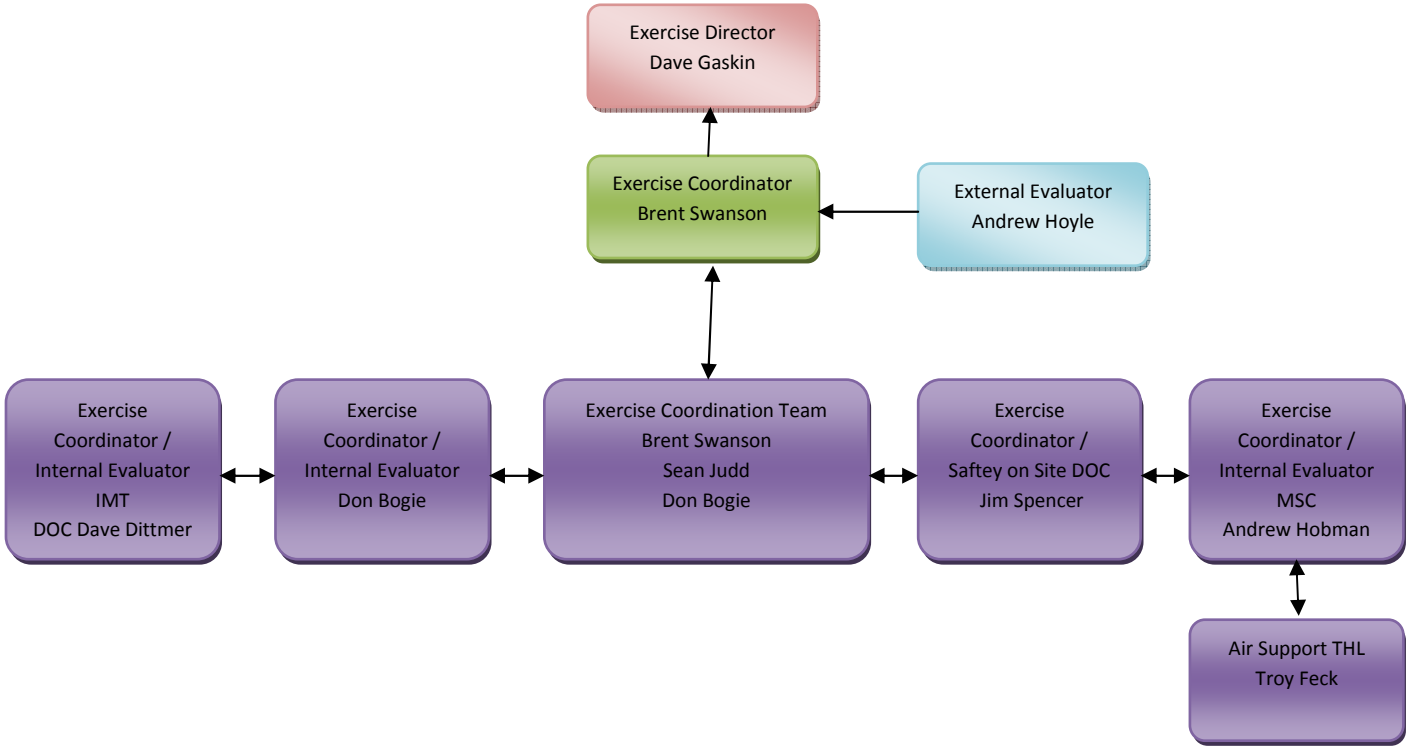
Accommodation

Unwin Lodge
The Chamois Backpackers
Fox (TBA)

All other logistics will be provided by participating groups as per SOPS.

COMMAND AND COMMUNICATION

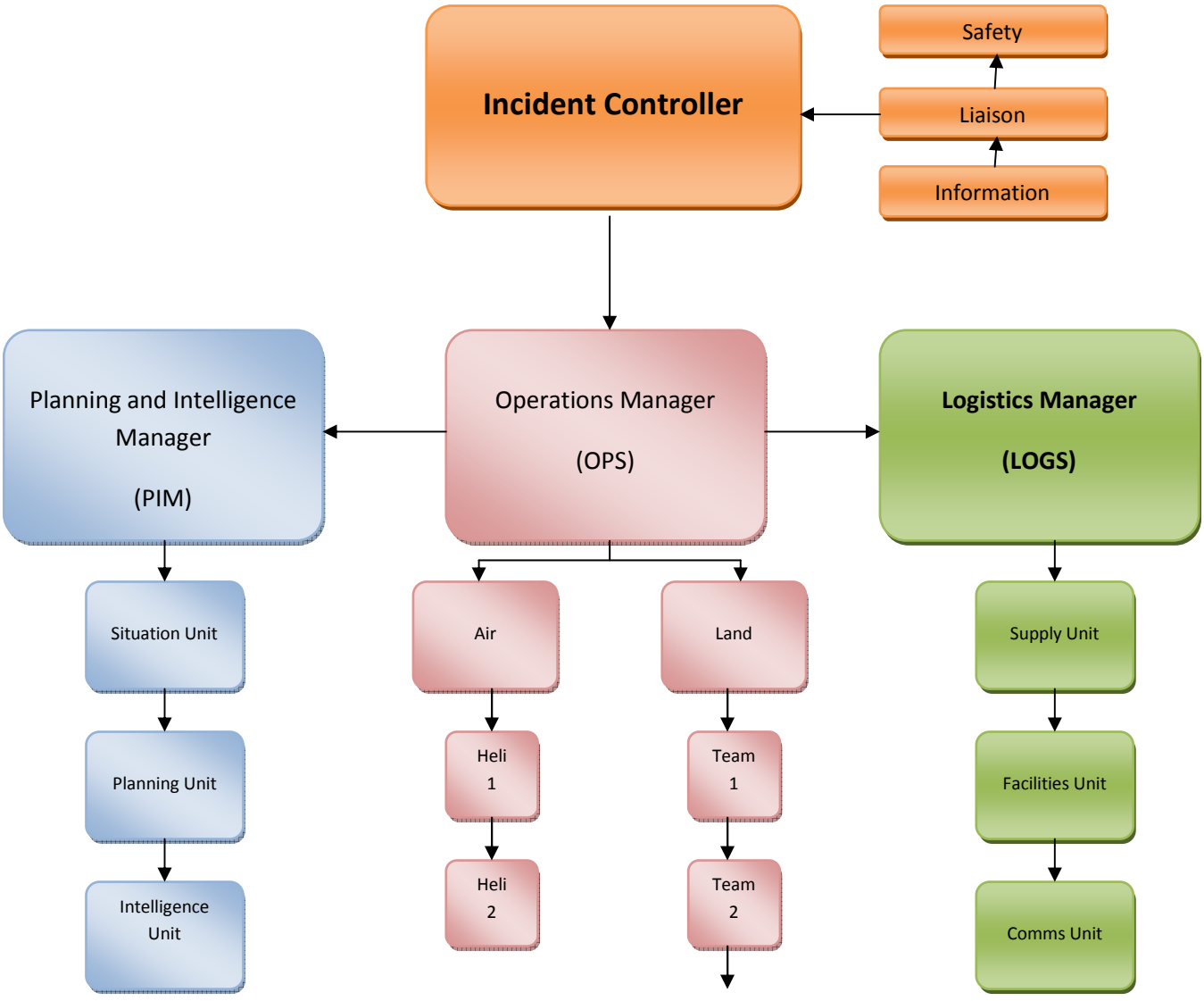
The exercise will be coordinated by:

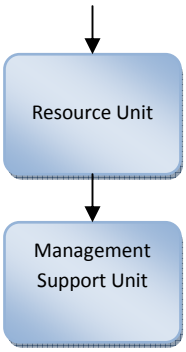


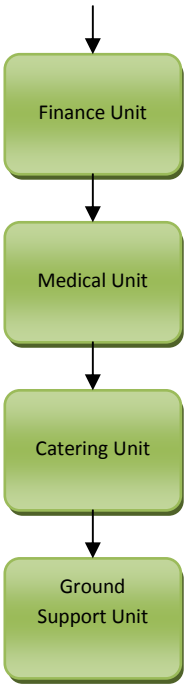
Exercise Organisation

Reflex Tasking

Full Tasking (Full Incident Management Team)







Exercise Control Communication

	Contact Details
Sean Judd	[redacted]
Brent Swanson	[redacted]
Don Bogie	[redacted]

Canterbury-Tasman Avalanche SARX 2014

OPERATION COLLABORATE

KEY PERFORMANCE INDICATORS

Objective # 1	To enhance multi-agency and inter-group coordination between the participating agencies and their support agencies and personnel within the Mackenzie district in the event of an Avalanche Search and Rescue incident.										
KPI Description	**Evaluation Criteria**	**Evaluation Grade**									**Comments**
		1	2	3	4	5	6	7	8	9	10	
Taskings	Was it appropriate? Who activated it?										✓	Tasking's were reflex in nature and activated by Avo Site controller in the main
Resources	Were the correct resources used in a timely manner and in the correct order?										✓	Both helicopter and personnel resources were deployed effectively to exercise site below Pioneer Hut.
	Were resources tracked?						✓					Resource allocation was communicated both from Mt.Cook & Avo site after they were deployed.

Objective # 2	To provide all participants the opportunity to refresh and practice their search and rescue incident management knowledge and skills during a full scale operational exercise previously learnt during Avalanche training, CIMS courses, Avalanche SAR Controller courses and through own experiences and to identify gaps and areas that need further development.											
KPI Description	**Evaluation Criteria**	**Evaluation Grade**										**Comments**
		1	2	3	4	5	6	7	8	9	10	
Information gathering	Correct briefing and tasking from ICPs										✓	Full briefing provided by event organizer Snr. Constable Swanson
	Was the correct information received?										✓	Information was obtained from the “arranged party informant” and from Avo. Rescue site.
	Was contact maintained with the informant? How?											N/A – exercise scenario
	Was the information analysis done correctly?					✓						Limited analysis as IMT personnel were inexperienced with managing this type of event.
	Was the information disseminated correctly?										✓	White board’s in IMT and passed via Radio com’s to site rescue controller.
	Was the information confirmed by independent means?											N/A – exercise scenario
Objective # 2	**To provide all participants the opportunity to refresh and practice their search and rescue incident management knowledge and skills during a full scale operational exercise previously learnt during Avalanche training, CIMS courses, Avalanche SAR**											

KPI Description	Controller courses and through own experiences and to identify gaps and areas that need further development.											
	Evaluation Criteria	Evaluation Grade										Comments
		1	2	3	4	5	6	7	8	9	10	
Incident Management Team setup	Was the IMT established in a timely manner to reflect a real time scenario?										✓	ICP – Team established in realistic time frame as would be expected for an avalanche emergency.
	Did IMT members know their roles and responsibilities?							✓				ICP – Most of the staff understood their roles, however some coaching was required during the exercise
	How did the transition from Reflex tasking to full formal search planning go? (OG-Full IMT)											ICP – The scenario remained in Reflex tasking mode, towards the latter part forward planning was undertaken with Logistics.
	Was the room laid out correctly to allow the IMT to work properly?										✓	ICP – generally the room layout worked.
SAR Plan	Was the Incident Action Plan (IAP) appropriate to the scenario?										✓	ICP – basic IAP was prepared
	Was the IAP checked?											ICP – not checked
	Did the plan work?										✓	ICP - Yes
	Did everyone including the Operational groups on the ground know the IAP?											No opportunity to brief the operational groups on the ground.

Objective # 2	To provide all participants the opportunity to refresh and practice their search and rescue incident management knowledge and skills during a full scale operational exercise previously learnt during Avalanche training, CIMS courses, Avalanche SAR Controller courses and through own experiences and to identify gaps and areas that need further development.										
KPI Description	**Evaluation Criteria**	**Evaluation Grade**									**Comments**
		1	2	3	4	5	6	7	8	9	10	
Incident Controller	How did the Incident Controller perform? Did he have control of the incident?								✓			ICP – The appointed IC was disadvantaged having to catch up but did have control
	Did the controller hold regular meetings?										✓	ICP – short exercise, however a IMT meeting was held
	How well was the Media managed?											N/A - exercise
Logistics	How did the Logistics team perform?								✓			ICP – Logistics with prompting completed planning for a continued rescue phase for fresh resources.
Operations	How did the Operations team perform?								✓			ICP – Kept track of reflex tasked resources, did have difficulty with field com's at times.
	How did the sector supervisors work?											N/A
	Did the section supervisors work together?											N/A
Scenario Analysis / Planning	How did the Planning team perform? Did they assess the 'what if's'?								✓			ICP –Planning required some prompting, but did complete some basic planning.
	Planning teams reviewed other avenues and possible scenarios.											N/A
	Did the Planning team plan forward for the next operational period?											ICP – Completed some forward planning in conjunction with Logistics.

Objective # 2	To provide all participants the opportunity to refresh and practice their search and rescue incident management knowledge and skills during a full scale operational exercise previously learnt during Avalanche training, CIMS courses, Avalanche SAR Controller courses and through own experiences and to identify gaps and areas that need further development.											
KPI Description	**Evaluation Criteria**	**Evaluation Grade**										**Comments**
		1	2	3	4	5	6	7	8	9	10	
Logging of actions taken in ICP	Were actions logged using a simple system?										✓	All – standard log was kept, work load shared among available personnel.
	How was the passage of flow of information?										✓	All – verbal – phone messages and radio messages.
Radio Procedure	Was the correct radio procedure used?										✓	All - radio procedure was sound.
	Was correct radio security observed?											N/A
Communication and information	How good was communication between members of the IMT?										✓	ICP – good communication and discussion between IMT team
	Was the comms room manned to the correct level?								✓			ICP – only one operator available, could have become an issue later.
Documentation	Was the documentation kept in good order, adequate and legible?										✓	ICP – all log, radio log and white board information was managed well
	Did all managers keep a log of actions and decisions?										✓	ICP – decisions logged in main log.
	Was all takings written and collated with appropriate sign offs?											ICP – exercise on reflex tasking
	At the end of the exercise collect all documentation as if they were going to Coroner's Court! Are they adequate?											ICP – exercise N/A - however the log and IAP plus photos of whiteboards were kept.

Objective # 3	To ensure value is delivered for all personnel involved.											
KPI Description	**Evaluation Criteria**	**Evaluation Grade**										**Comments**
		1	2	3	4	5	6	7	8	9	10	
Personnel involvement	Did participants get value from the exercise?										✓	IMT – the personnel both civilian and police found the exercise very benifcial
	Did participants know what was going on?										✓	IMT – initially it was catch up but the IMT did understand what was happening up in the mountains.
Risk Management	Did the unit consider risk management?										✓	IMT – discussed at some length with planning for forward operation
	Were the correct decisions made?										✓	IMT - yes
Resources	Were resources crewed correctly?										✓	IMT – mostly, some people undertaking unfamiliar roles
	Was succession planning done?					✓						IMT - no
Briefing crew and resources	Were resources briefed?										✓	All – briefed both at Mt.Cook and Fox
	Was the briefing comprehensive enough?										✓	All – Briefing covered all requirements
	Were resources debriefed?										✓	IMT – hot debrief conducted and feedback received.
Planning Meetings	Were planning meetings conducted?							✓				IMT – planning meeting, once only during this short exercise
	During the meetings was the Incident Action Plan reviewed and new objectives set for the next operational period?											IMT – IAP was developed, exercise to short to conduct review of IAP

END OF EXERCISE REPORT

All Evaluators to write a brief report using the following subject headings and provide a written copy of KPI comments.

Introduction (your location etc…)	**Evaluator – Dave Dittmer, Department of Conservation, Aoraki/Mt.Cook, Exercise IMT, Fox Emergency Centre, Fox Glacier Township.**
Exercise Overview (what part of the exercise did you observe)	**Observed the IMT briefing, Establishment and operation of the IMT during the exercise on Saturday 14th June.** **Attended the 08:00 briefing and observed, coached and supported where necessary the IMT team members as the exercise unfolded during Saturday and provided a "Hot De-brief" for the IMT at the exercise conclusion.**
Analysis on how the Exercise went (subjective opinion of how groups performed)	**The IMT functioned quite well considering the type of exercise scenario with rapid response teams being directed by a site rescue controller at Pioneer Hut.** **The IMT team members were receptive to suggestions and worked well together as a group. They responded to prompts "had you thought about additional dogs"; etc. and developed a sound operational plan which outside of an "exercise scenario" was plausible and could have been executed if required.**

Observations, conclusions and recommendations	**The majority of the IMT personnel had not experienced a rapid response rescue situation previously. In brief points to consider:-** • **Develop a preplan for the regions of the West Coast similar to the Winter Response plans in Canterbury/MacKenzie regions.** • **Source and use initial response guides (already developed by Land SAR)** • **Use expert sources for advice and technical information to support planning and operational direction.** • ***The exercise objective was achieved fully and all staff involved came away with a positive experience and additional knowledge and skills to apply for future emergency situations.***
Possible corrective actions	• **Fox Emergency Centre; source and install IMT Vests to cover the IMT positions (not available at the exercise)** • **Load an Incident Action Plan template onto a computer with printer access to assist the production of this and updating of IAP during a real incident.** • **IMT staff need an education package/training in the live use of SAR Net to make use of this valuable system.** • **IMT staff should take up training – role playing**

	opportunities when available. The CIMS – IMT roles/system are transferrable to a host of emergency situations

Operation Collaborate – Avalanche rescue exercise near Pioneer Hut 14 June 2014

Don Bogie

Introduction

Along with John Hooker and Andrew Hobman I helped set up the exercise on the day before and observed the exercise when it ran. The exercise was set up to test several things on site.

- How teams from a number of locations would work together at the scene
- How the triaging of resources would be handled in order to achieve maximum success
- Patient care from extraction till off site

Exercise Overview

From my position at the rescue site I was able to observe the three points. The conditions on site were fine weather with a breakable snow crust. There was no avalanche debris available to use for the exercise. A hard rain affected layer in the snowpack made probing and digging harder than in most fresh avalanche debris. The site was 100 m long by 60 m wide. It was not possible to disturb the entire snow surface but it was disturbed enough so that searchers with transceivers had to search all of it. The four victims were old ski suits filled with snow with the two shallower burials having resuci-annie heads and torsos in them, the crevasse victim also had 3 x 20 litre water containers in it to bring it up to a realistic body weight

The incident involving the four victims occurred at 8.30 am. Four helicopter loads of rescuers arrived at the site in relatively quick succession.

9.18 am Westcoast team landed below the site
9.27 am Aoraki Team landed above the site
9.34 am Mackenzie team landed below the site
9.45 am Christchurch team landed by Pioneer Hut
10.45 am Christchurch team arrive at site

Transceiver searching commenced at 9.28 am

Victim #	Location and depth	Transceiver picked up	Digging/Extraction
1	Approx 20 m down a crevasse top centre of site	9.47 am (missed initially)	11.15 am at victim 12.08 pm out of crevasse T = 218
2	60 cm deep, top right of site	9.34 am	9.35 am digging started 9.42 am head uncovered T = 72
3	2.5 m deep middle left of site	9.39 am	9.48 am digging started 10.42 pm head uncovered 54 min digging time T = 132
4	Partly showing head 50 cm deep bottom left of site	9.31 am	9.32 am digging started 9.32 am head uncovered T = 62

A dog and handler was in the 3rd heli load. The dog did a number of indications on items the set up crew had left on site. These were all followed up on and declared null finds. The four victims all of whom had transceivers were found by transceiver searching. Two pieces of equipment, one that was not easy to see were found by visual searchers.

Analysis on how the exercise went

General

Rescuer personal avalanche rescue skills of transceiver searching, probing and digging were all done well. The crevasse rescue anchors and rope work was all done to the appropriate standard.

How teams worked together

Everyone on site worked well together. The handover from the leader of the first heli load from Fox Glacier to the person in the second load that came from Aoraki who became the Avalanche Site Commander was particularly well done. The two people met as soon as practical, exchanged information, quickly established who had the greater avalanche experience and made her the ASC. The management structure of an ASC, an ASC assistant who was recording details and various people tasked with being in charge of different parts of the operation worked for the size and scope of the operation. It would have struggled if more rescuers had of come to site.

How the triaging worked

This aspect of the operation did not go as well as it should have. Too many resources went into the deep burial while the two shallower burials could have benefited from more resource to complete the patient extraction and preparation for evacuations. The crevasse victim was assigned lowest priority and not dealt with until everyone else had been extracted. While avalanche victims caught in crevasses are potentially very deep burials and therefore low probability of being found alive this needs checking and confirming before a decision on what to do with them is made. In this exercise while the transceiver signal was showing the victim was 20 m down the victim was not buried and could have been checked out for urgency of evacuation earlier. A decision to leave the deep (> 2 m) victim till the two shallow victims were stabilised and the crevasse victim was checked out could have if this had of been a real operation made a significant difference to patient survival of one of the shallower burials and the crevasse victim.

Patient Care from extraction to site removal

This was an important and very worthwhile change from previous exercises. In many avalanche rescue exercises patient care often stops when the victim is dug out and the resources are reallocated to other search tasks. Patient handling can make a big difference to how many people survive an avalanche. Their care, packaging and evacuation by helicopter all needs to be done well. Good skills were shown with the helicopter extractions from off the site. The backgrounds of a lot of the rescuers as either being ex DOC Aoraki SAR team members or alpine guides contributed to this. The overall standard of patient care was good. Victim number 2 would have benefited from more help to complete the extraction from the snow and being insulated from further cooling sooner. The crevasse rescue went well once it was started although it may have been easier to have set up the raising system and main anchors downhill of the crevasse rather than above it. Being downhill would

have made the raising easier and reduced the risk of dropping snow in on the victim and rescuers. It would also have made it easier to move the stretcher away from the crevasse once it was out.

Conclusions

Overall the operation went well and achieved its main aim of people from different places working together well. The triaging should have made the deep burial a lower priority until the crevasse victim situation had been assessed for speed of likely rescue. The patient care and evacuation from site went well.

Rescue exercises like this are important for maintaining preparedness for avalanche rescues. While it is easy for individuals to maintain their personal skills, opportunities to work in larger multi agency teams and to undertake realistic large scale rescue scenarios are not very frequent. Having exercises such as this one help maintain a pool of responders with experience in large events which should help increase the numbers of lives saved at real events.

Recommendations

1. Rescue exercises like this need to continue to happen at regular intervals
2. Including patient care and evacuation off site is worth the effort required
3. If patient care is part of the exercise having life like victims is crucial
4. Having high end medical care involved at the scene would add value
5. The following items need more emphasis in formal avalanche rescue training
    i. The IKAR patient care guidelines and victim care algorithm
    ii. Triaging at major sites
    iii. The change over from small party rescue response to large scale site management