



COMNAP

Council of Managers
of National Antarctic Programs

**Antarctic Search and Rescue (SAR) Workshop 5
Improving SAR Coordination and Response in the Antarctic**

FINAL REPORT (version final/14 July 2023)

Convened by the Council of Managers of National Antarctic Programs (COMNAP)

23 & 24 June 2023

Hobart, Tasmania, Australia

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Antarctic Search and Rescue (SAR) Workshop 5

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1.0 Background

Since its establishment in 1988, COMNAP considers safety of human life of primary concern in all Antarctic activities. In 2013, the Antarctic Treaty Consultative Meeting (ATCM) formally recognised the Council of Managers of National Antarctic Programs (COMNAP) efforts “...to continue to foster collaborative discussions and vital sharing of information regarding SAR matters including through: holding triennial workshops on search and rescue...” (ATCM XXXVI Resolution 4 (2013)). COMNAP convened the first Antarctic SAR Workshop in Valparaiso / Viña del Mar, Chile, in August 2008; SAR Workshop II (Buenos Aires, Argentina), 2009; SAR Workshop III (Viña del Mar, Chile), 2016; and SAR Workshop IV (Wellington & Christchurch, New Zealand), 2018.

As per Resolution 4 (2013), the COMNAP Antarctic SAR Workshop 5 was open to representatives from all of the relevant Rescue Coordination Centres (RCCs), from National Antarctic Programs, relevant experts including from the International Association of Antarctica Tour Operators (IAATO), Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the International Maritime Organization (IMO), as well as commercial operators and service providers. The workshop was of a technical, practical and non-political nature held in the spirit of the Antarctic Treaty 1959.

2.0 Introduction

In support of the goal to improve SAR coordination and response in the Antarctic Treaty area, COMNAP convened Antarctic SAR Workshop 5 (2023). The workshop was held in close collaboration with the Australian Maritime Safety Authority (AMSA) and the Australian Antarctic Division (AAD).

The Workshop was held in hybrid format. One-hundred forty-seven people pre-registered for the Workshop. The venue was the Hotel Grand Chancellor Hobart, Hobart, Tasmania, Australia, with 115 people participating in-person and 32 people participating virtually (see Appendix 1 for list of delegates).

Workshop 5 began with a RCC-focused discussion of key messages then looked to national Antarctic programs and other experts for their key messages. Day 2 was focused on Antarctic regional activities and responses including with a SAR exercise of a Mass Rescue Operation (MRO). The agenda and schedule are Appendix 2.

This is the Final Report of key outcomes from the workshop.

3.0 Workshop Objectives

The overarching objective of the workshop was to continue **to improve Search and Rescue (SAR) coordination and response in the Antarctic** as a follow up on SAR Workshops I (2008), II (2009), III (2016) and IV (2019).

Specific objectives of this fifth workshop were to:

- Conduct a review of progress, in particular on actions arising from the previous workshops;
- Continue the exchange of timely and useful information that can be used in the event of a SAR situation;
- Present examples of best practice to support SAR coordination and response, including those related to technology and communications' innovations;
- Exchange up-to-date information on aviation safety especially based on the outcomes of the COMNAP Antarctic Aviation Workshop 2022;
- Discuss specific regional requirements such as those required by land traverse operations into deep field/high plateau areas and those related to significant increases in tourism activity;
- Discuss lessons learned from recent real Antarctic search, response and emergency incidents;
- Engage all participants in regional coordination and response to MRO scenario.

4.0 Disclaimer

Nothing mentioned in this document should be considered contrary to any of the international conventions in force regarding SAR and related issues, which are regulated by IMO, the International Civil Aviation Organization (ICAO), and by national laws and regulations in force. The use and designation of any name or area, including any geographic place name and statements made in regard to dates in any presentation, do not imply any opinion whatsoever on the part of COMNAP concerning the legal status of any country, territory or authority in the context of the Antarctic Treaty.

5.0 Workshop Discussion and Outcomes

The workshop participants agreed that the Final Report would reflect the key messages from the workshop and would not be a fully minuted report. The key messages are presented in groupings that align with the workshop sessions, that is, by relevant agenda item. The key messages are numbered for convenience of reference, not in order of importance.

6.0 Key Messages

Agenda Item 3: Key messages from Rescue Coordination Centres (RCCs)

General

1. All RCCs with SAR responsibility in the Antarctic area have very large SAR Responsibility Regions (SRRs). For example, one such area is 10% of the earth's surface, with vast remote areas where there is limited activity. This is both a good thing (less people at risk and low frequency of incidents) and a bad thing (less resources nearby to respond when an incident does occur coupled with an unfamiliarity with Antarctic conditions and information).
2. There are particular challenges for RCCs when coordinating SAR incidents in remote areas of Antarctica compared to their usual SAR activity:
 - Distances are vast.
 - The remoteness means response times are much longer than in other areas of the world.
 - Environment can be challenging.
 - Lack of dedicated SAR assets in some areas.
 - SAR incidents can take a long time to resolve.
 - If casualties are not able to self-support, survival times can be limited.
3. All of the RCC Antarctic regions are predominately ocean, so Antarctic land emergency response falls to the NAPs and/or NGOs.
4. In addition to SAR coordination and response, the RCCs have other responsibilities, including pollution response, information provision and support (such as providing weather alerts to mariners).
5. Emergency towing in some regions of the Antarctic requires a commercial operator.
6. Any evacuation of critically injured persons is ultimately to a gateway, where hospital and medical services are at full capability as opposed to in Antarctica where austere medical services are available and provided.
7. Increase in activities in the Antarctic Treaty area is at least partially due to reduction in sea ice in some areas. The perception that reduction in sea ice might be a reduction in risk is not completely true as removal of sea ice often creates increase in icebergs, and creates rapidly changing or new conditions that many are not aware of or prepared for. Ice-breaking capable vessels will still be required in order to respond to Antarctic SAR events and the importance of charting of these new open areas is noted.
8. Each Antarctic SAR region is different and has different characteristics. For example, for the Peninsula, the distances from South America to the Antarctic Treaty area are relatively short. For the three other SAR regions, the distances are larger. However, even in relatively short distances (that are never less than 1000–1200 kms), the particular circumstances of Antarctica, such as its hydro-meteorological and ice conditions, the scarcity of support points and the limited infrastructure-mean there is a complexity to deployment. Time of arrival of

SAR units is very high compared to the expected survival time in the Antarctic.

9. National authorities give responsibility for Antarctic SAR activities to particular agencies in their government. For some regions of the Antarctic, that responsibility falls to the military (Navy or Air Force) for others there are specific safety authorities (maritime or air or joint). For Chile and Argentina, the combined Navy Patrol enables quick response to Antarctic situations, especially during the period 15 November–15 March each austral summer.
10. The length of days that might be required to rescue varies from region to region given the differences in inter-continental distances from each gateway. Even in the Peninsula region, which is geographically closest, a vessel can take 3 days to reach the Antarctic coast and this is when weather conditions are good. In an emergency, survival often depends on having the correct amount of equipment and supplies to sustain persons, including those injured, for long durations.
11. The importance of collaboration is to “accomplish the mission” whatever that SAR mission happens to be.
12. In some SAR situations, it is simply not possible to provide any assistance.
13. Many SAR/emergency events in the Antarctic are intra-regional or cross regional. Meaning, they may begin in one RCC area of responsibility and as they continue to play out, may crossover into other RCCs areas. Clear protocols for who has the lead during the event is critical for good communications and success.
14. With such austere medical capabilities in much of the Antarctic, even a SAR event involving two injured person might constitute a situation that would overwhelm the nearest station and its crew. This is especially true during the winter months when station personnel are at lowest numbers.
15. The significantly increased numbers of tourists in the Peninsula region and the growth projection of those numbers is alarming from a SAR perspective, even considering that tourism assets can be called upon to assist in an emergency.
16. Technology is assisting us to respond to, and in some cases, remove the “search” from the SAR response since technologies can give us a real-time picture of positioning of people, vessels and aircraft. For aviation, the ADS-B technology is considered critical for tracking. Data from these technologies should be shared and made available to RCCs. How this can be achieved requires further consideration in the immediate future.
17. Remote sensing can be employed in most areas but not year-round. Telemedicine can also assist in situations where technology is available at both ends of the SAR situation and if connectivity/internet is not an issue.
18. COSPAS SARSAT distress alerting system MEOSAR (Medium-altitude Earth Orbit Search and Rescue) has good coverage cross Antarctic. There is new technology on the scene, including STARLINK, and more local phone-based systems for communications and tracking.

19. COMNAP tools and products such as the COMNAP Asset Tracking System (CATS), the electronic-Antarctic Flight Information Manual (e-AFIM) and the Antarctic Telecommunications Operators Manual (ATOM) are important situational awareness tools and are shared with and used by the RCCs. Therefore, their currency and accuracy may make the difference in any SAR response.

Assets

20. Dedicated SAR assets at the gateways are important. There are dedicated SAR assets at some of the gateways. These vary from gateway to gateway, so dedicated assets are not the same across those gateways. However, not all of these assets are suitable for deployment to the Antarctic region.

21. At least two of the five RCCs with Antarctic responsibility have increased their SAR capability since the 2019 SAR Workshop. This is largely in response to increased activity in those two regions. New assets that support the SAR Response Plan are being funded.

22. In many emergencies, it is the NAP assets, already in the Antarctic, that are requested for deployment to an Antarctic incident or event. In the marine environment, NAP and NGO assets can be called upon to participate in a response.

23. NAP assets in the form of new ice-breaking capable vessels are in the planning or building stage and this will significantly add to the ability to respond to marine situations. Air assets with “drop” capability also play a key role.

24. In the Peninsula region, the RCCs have dedicated SAR response air assets in the Antarctic, which are critical to maintain “connectivity” inter-continentially and intra-regionally. Such “assets” include facilities such as the runways, and the facilities and personnel that maintain and support those facilities.

25. For the Peninsula region, assets that could be used for SAR response are dedicated. For the other SAR regions, there are often no dedicated SAR assets. In most cases, even any dedicated asset is not normally located in the Antarctic Treaty area; it is generally external to the area and must be deployed across long distances before it can be in a position to assist. In addition, the availability of assets varies throughout the year. For example, there are little to no air/aviation capabilities available in the Antarctic Treaty area in the austral winter months.

26. In addition to assets that could be deployed, SAR agencies and gateway countries support a range of other services, such as Search and Rescue Satellite Aided Tracking (SARSAT) coverage. Both assets and services can be called upon to assist in an Antarctic SAR event.

27. NAPs may have assets suitable for a particular response but not for others. For example, even some coastal Antarctic stations may not have the ability to respond to a marine emergency.

28. Assets require crew. In some cases, crew is not on standby and time is required for them to be gathered/called in in order to deploy or use a dedicated asset.

29. In the event medical attention is required, “assets” must include medical personnel and so involve a human resource. Therefore, availability of a “thing” on its own is not always sufficient; availability of people with the appropriate skills is often required but may not be readily available in the Antarctic Treaty area. In addition, available medical personnel may not always be equipped to deal with mass casualty situations. In such cases, it is important for RCCs and NAPs alike to have some awareness of specialist assets and personnel that are available in neighbouring SRRs.
30. SAR coordination and response requires medical/hospital facilities and assistance originating from external areas, such as the “gateway cities”. Therefore, those cities require assets and human capability to respond adequately to a SAR situation. Acquiring and maintaining such assets are usually outside of the control of the RCC or the NAP. Placement and maintenance of medical equipment in “gateway cities” is critical and requires continued investment by countries.

Communications & Agreements

31. Preseason communications between RCCs and NAPs is critical to ensure success in cases of emergency/SAR. All RCCs highlighted the importance of having MOUs / agreements in place between the relevant RCC and the NAPs that normally operate in that region, between “neighbouring” RCCs, and between “neighbouring” NAPs and NGOs.
32. The International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual (jointly published by the IMO and the ICAO) says, “The key to success when responding to a SAR mission in areas remote from SAR facilities is to develop a SAR Response Plan which presents agreed procedures in its area of responsibility.” IAMSAR Manual Volume II (6.16.1).
33. Continuous information sharing amongst SAR agencies and between those agencies and the relevant National Antarctic Programs and other stakeholders is critically important; as is training and regional exercises, even though planning of such exercises is time-intensive.
34. Review after an event is an important part of the learning process and provides a mechanism to share lessons learned that could require a policy or response change.
35. Strengthening of the planning process may go a long way to ensuring an effective emergency response. COMNAP workshops and AGM safety sessions are one-way to strengthen the planning process. In-person events have incomparable benefits in relationship building that simply cannot be achieved to the same level as virtual meetings and workshops.
36. Regular exercises with international partners are fundamental to success.
37. Every large-scale SAR operation requires international cooperation to one extent or another.
38. Every “false alarm” requires some sort of response. Having up-to-date, robust contact information is key to quickly identifying whether an alert is a true emergency event or a false alarm.
39. As NAPs activity diversifies, there is a need for regular SAR exercises with a focus on that

specific area of Antarctica and the proposed activity. RCCs and NGOs can be called on to assist NAPs with SAR exercise planning.

40. Medevac, while not SAR operations as such, need extensive inter-agency cooperation – and usually the use of National Antarctic Program resources – in order to save lives.
41. Ability to talk with the right person/people at the needed time often makes the difference. Accurate information, provided in advance, is important and is the responsibility of all involved to ensure information is current.
42. Workshop attendees' benefit from the presentations and discussions, but the key messages and the presentations should be shared with a wider group. The COMNAP, the IAATO, the CCAMLR and Antarctic Treaty Secretariats have a role to play in this, as do the RCCs and the COMNAP Member National Antarctic Programs, attendees should commit to sharing information when they return to their home organisations perhaps via a seminar or safety meeting.
43. Changeover of personnel mean that regular training and regular workshop are important. The current triennial pacing of the COMNAP Antarctic SAR Workshop is well matched with the need to reinforce continually cognizance as personnel turnover and new matters of improvement may be identified and implemented.

Agenda item 4: Key messages from the NGOs

44. There is an increase of tourism activity in the Antarctic Treaty area, and especially in the northern Peninsula Region. This increase means more people are at risk and also means there are more assets in that region at the height of the summer season to assist in any SAR response.
45. National Competent Authorities use tools provided by the Antarctic Treaty System to permit or authorise an Antarctic tourism activity. Currently, these tools only allow for consideration of environmental protection protocols and practices, and do not allow the National Competent Authority to consider safety or risk of the activity to prevent the event from taking place. Safety should be considered by the ATCM in its discussion on regulation of tourism activities.
46. Like the larger Antarctic NAP stations, the larger cruise vessels have medical assets and medical personnel on-board.
47. The NGOs that are IAATO members, share through the IAATO Secretariat their information with relevant RCCs for all activity they are aware of, including contact information and schedules.
48. IAATO recognizes the importance of regular exercises and face-to-face meetings between their operators and the RCCs.
49. The IMO Polar Code for ships operating in polar waters is leading important change in

regards to vessel safety, training of personnel and reduction in pollution. However, the IMO Polar Code does not apply to all vessels.

50. Our current technology is assisting us in many ways. It is also important to consider how technology may further assist us in the near future. For example, can we begin to consider how we might “combine” the multiple tracking systems we currently use into one picture to be used by all RCCs? Would commercial and military operators agree to participate in such a “combined” system together?
51. Through the CCAMLR Secretariat, Vessel Monitoring System (VMS) data provides a surface picture of where licensed fishing vessels are/were in the previous 24-hour period. This VMS data is shared with RCCs through a request system and can assist in a SAR response.
52. We need to consider how best to share lessons learned from real events as many elements of Antarctic safety have been informed/improved by lessons learned from previous incidents, including planning, policy and procedures, training, briefings and checks.
53. The importance of training cannot be overstated. Such training should be coupled with regular cross-season briefings and checks. Regular schedule for communications and a response plan in cases where the communications as scheduled does not eventuate are important.
54. Risk management and approach is different for some Antarctic conditions and situations. For example, in Antarctica, a low probability, high consequence event underlines limitations that might be the norm outside of the Antarctic area. Traditional risk management approaches may not be applicable across all Antarctic situations. Open and full investigation of each real incident provides context to Antarctic conditions and situations to inform future risk analysis.
55. There is a correlation between information and risk. With less information equalling or contributing to higher risk and more information equalling or contributing to reduction of risk.
56. Self-sufficiency is important, but so is communications. Meaning, communicating early with RCCs in the early stages of any potential or evolving situation, even if it is not clear yet that there is an emergency, is a good idea to raise awareness with that RCC.
57. Even though there are significant differences between the Polar Regions, there may be lessons Antarctic SAR agencies can learn from Arctic SAR agencies.

Agenda item 5: Key Messages from National Antarctic Programs

58. National Antarctic Programs must follow national legislation, which therefore feeds into Antarctic operations and into SAR policy, guidance and response.
59. National Antarctic Programs continue to stress the importance of international cooperation in order to be successful and safe in the Antarctic. Efforts spent building relationships are never time wasted.

60. Only a few countries operate inter-continental air operations. Many more operate inter-continental ship operations for passengers and for movement of cargo and fuel.
61. NAPs recognise that a "one-size-fits-all" approach may not be best for the various Antarctic situations, stations, vessels and levels of activity in the Antarctic region. NAPs with multiple stations and areas of operations are urged to review their emergency response plans to ensure they are comprehensive for the particular area of operation.
62. For some NAPs and stations, an emergency involving even as few as two people can be considered a mass response operation as many stations do not have the assets and personnel to respond or support more than one casualty or injured person at any one time.
63. Having a preseason, documented plan coupled with clear lines of communications is key to success. The plan should be regularly reviewed and frequent training based on the plan carried out throughout the season and as personnel change across the season.
64. Cooperation with other NAPs often proves the fundamental component of success.
65. Within NAPs themselves, they are developing and carrying out SAR exercises on continent that are particular to their situation. For example, IPEV is developing a SAR exercise for Concordia Station to take place in January 2024.
66. New infrastructure such as the TNB Gravel Runway can assist in times of SAR response, and also requires maintenance to ensure usability. There are times when such infrastructure must be closed for maintenance. Such closures should be alerted via Notice to Air Missions (NOTAMs), the e-AFIM and through Advanced Exchange of Operational Information (the Antarctic Treaty's Electronic Information Exchange (EIES) & COMNAP Quickbase Database).
67. Many NAPs operate in areas that have a range of conditions and terrains. So personnel must be prepared for that range of conditions and changing conditions due to weather or changing ice conditions for example.
68. In small field teams, even something as "simple" as a sprained ankle can result in an unmanageable situation and eventuate in the need for emergency response. Such situations can take days or even weeks to resolve. This takes its toll on those involved in the response and can significantly impact mental well-being of all involved.
69. While innovative technology is assisting our abilities to respond, tried and true equipment such as twin otter aircraft and knowledgeable pilots continue to play a key role in emergency response.
70. In some countries, domestic legislation now in place can impose liability on Antarctic managers and station leaders in cases of accident or incident or failure in an emergency response situation.

Agenda item 6: Best practice/Lessons learned from recent real events

There were three recent real events presented in this session:

Real Event 1: C130 Hercules incident of December 2019.

Real Event 2: Medevac of injured crewmember from fishing vessel *Marigolds* by IAATO vessel *National Geographic Endurance* in January 2023.

Real Event 3: Fire on-board the *MPV Everest* in April 2021.

The general points raised from presentation of these real events are:

71. In many Antarctic real events, the SAR response requires an integrated approach from air, marine, submarine and on-the-ground assets and people. There is also coordination required between the RCC country, the Antarctic location (station or vessel or field party involved) and the home country of the vessel, aircraft or people involved in the emergency.
72. A communication plan for an event is important. Even more so in today's world where social media is often the first public reporting of an evolving incident or accident.
73. For success, good planning is often coupled with availability of good people and assets, and a bit of luck. Everyone can be a resource and can be a risk.
74. Often the nearest asset may be able to reach a vessel or aircraft that has declared an emergency. However, that asset may not have the capacity to then support a large number of people that require rescue or medical intervention.
75. There are financial costs involved with all SAR responses. While the RCCs may have the financial resources from their governments, others who respond may not.

Agenda Item 7: Regional Discussions

There were several presentations from representative NAPs who operate in the various regions of Antarctica. Each presenter was asked to consider the following:

- What regional cooperation agreements do you have?
- Do you have a documented emergency / SAR plan?
- Do you have visibility of what SAR resources might be available (not just your own program)?
- Any upcoming infrastructure changes that will affect program activity, particularly airfields and port facilities?
- How joined up with regional RCCs are individual programs? Or are programs self-reliant?
- Do you have a relationship with your home country RCC? Are they "connected" with a gateway RCCs?
- What assets do you share with other programs?
- What arrangements do you have with NGOs? Any station visitations, for example.
- Do you utilise the COMNAP website and other resources to share incident / exercise reports, e-AFIM, facilities' contact information, CATS, for examples?

As a result of regional discussion the following key items were identified:

Peninsula

1. Significant increase in tourism numbers/numbers and type of vessels in operation there during a concentrated Antarctic tourism season. This is currently being discussed from a policy/regulation perspective within the Antarctic Treaty System.
2. Many of the vessels are carrying and deploying aircraft, such as helicopters and RPAS from their vessels. Therefore, the increase in vessel traffic is couple with an increase in air activity.

Dronning Maud Land/East Antarctica

1. This region is covered by two neighbouring RCCs that do not work under a “joint patrol” (like the Peninsula does). The situation requires that each year clear information share pre-season takes place with an update on all pre-season plans, NAP points of contact and information share throughout the year.
2. Many operators are working inland rather than coastal with 60 flights in the region across the Antarctic summer season.
3. There is a shift from governmental operators of infrastructure to support activity in this region, to non-governmental operators and a diversification of activities accompanying that shift.
4. Recreational activity often requires a different risk assessment than science/science support activity.

Ross Sea Region/Terra Nova Bay

1. All national Antarctic programs operating in this area are trying to do more (science/science support, modernization, runway development etc.), often with increased costs and shifting of assets/resources and people from science support to some other activity.
2. Understanding fisheries activity in the region requires government-to-government communications, such as through the Ministries of Fisheries. This is not a traditional government department with involvement in Antarctic activities and there is often not a common language or common way of working.
3. Even within this region, there is differences in environmental conditions and activities. For example, increased NAP activity in Terra Nova Bay require reconsideration of SAR asset capability and the Response Plan.
4. It is important to consider the consequences of evacuation of entire station for whatever reason and prolonged time that the station is unoccupied. Any such evacuation may require a reconsideration of any Response Plan in-place as it removes key assets and personnel from any response. It also leaves an empty station.

Agenda item 8: Mass Rescue Operation (MRO) SAREX

The objective of this agenda item was to develop a response to a specific large-scale scenario to evacuate survivors from three different regions of the Antarctic to an initial place

of safety and to discuss planning considerations for repatriation of survivors from the Antarctic environment. The IMO definition of MRO is “One that involves the need for immediate assistance to large numbers of persons in distress such that capabilities normally available to SAR authorities are inadequate.”

The exercise, developed by AMSA, was one scenario given to three breakout groups carrying out the exercise in three different regions of the Antarctic Treaty Area. Therefore, each breakout group had the same scenario but each group focused on the particular circumstances in the Peninsula or the Weddell Sea or in East Antarctica.

As a result of the exercise, there were two “keys to success” as identified during feedback of the regional discussions. They were:

1. Of key importance is having MOUs, communications plans, and SAR response plans agreed and in-place. Conducting regular and varied exercises *before* an incident occurs is crucial in expediting the best outcome for the casualty/causalities.
2. A consistent key to success identified across all regions was the need for close cooperation between RCCs and National Antarctic Programs, both within and across regions. Critical to achieving this is knowing which agency to contact and how to contact them. The ATOM was identified as a useful resource, but to be effective all agencies needed to ensure their contact information was regularly updated and always current.

Appendix 1: COMNAP Antarctic SAR Workshop 5 (2023) Participants List

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Appendix 2: Agenda & Schedule

Agenda

1. Opening, apologies, introductions
2. Background to the SAR Workshop 5, and brief review of SAR Workshop IV / update on progress
3. Exchange of information/key messages from Rescue Coordination Centres
4. Exchange of information/key messages related to experts from non-governmental operations, fisheries, IAATO Members
5. Exchange of information/key messages from National Antarctic Programs
6. Best practice and lessons learned during recent real Antarctic events
7. Regional Discussions
 - a. Peninsula
 - b. Ross Sea Region/Terra Nova Bay
 - c. Dronning Maud Land/East Antarctica
8. Tabletop Exercise(s) MRO Scenario (Regional)
9. Conclusions & Reporting
10. Close

Programme/Schedule

COMNAP SAR Workshop 5	
Day 1: Friday 23 June 2023	
08:00–09:00	Workshop registration (Mezzanine of Hotel Grand Chancellor)
09:00	Workshop begins (Grand Ballroom 1)
09:00–09:30	<p><i>Session Chair: Michelle Finnemore, COMNAP</i></p> <p>(1) Opening, apologies, introductions Welcomes from COMNAP & others (5 minutes each)</p> <p>(2) Background and brief review of SAR Workshop IV / update on progress Greg Johnston (COMNAP) (15 minutes)</p>
09:30–10:30	<p><i>Session Chair: Dan Gillis, AMSA</i></p> <p>(3) Key Messages from the five RCCs 0930–0945 From JRCC Australia, Dan Gillis (ASMA) 0945–1000 From RCC Argentina, Pablo Hernan Aliotta Llatser (Armada) 1000–1015 From RCC Chile, Miguel Figueroa Ibarra (FACH) 1015–1030 From JRCC New Zealand, Chris Wilson (RCCNZ/Maritime NZ)</p>
10:30–11:00	<i>Coffee break</i>
11:00–12:00	<p>(3) Continued 1100–1115 From MRCC South Africa, Jared Blows (SAMSA) 1115–1130 Initial questions/comments (<i>All</i>) 1130–1200 Discussion of key messages from RCCs (<i>All</i>)</p>
12:00–13:00	<p><i>Session Chair: Lisa Kelley, IAATO</i></p> <p>(4) Key Messages from Non-governmental Activities/Actors & Experts 12:00–12:15 Moderated Discussion on Collaboration on Safety in Antarctica, Lisa Kelley (IAATO) 12:15–12:30 SAR Coordination and Response in the waters surrounding Antarctica, Claire van Werven (CCAMLR) 12:30–12:45 Safety Management in Deep Field Operations-The ALE Approach, Nick Lewis (ALE) 12:45–13:00 Discussion of key messages from non-governmental activities (<i>All</i>)</p>
13:00–14:00	<i>Lunch break</i>
14:00–15:30	<p><i>Session Chair: Charlton Clark, AAD</i></p> <p>(5) Key Messages from National Antarctic Programs 14:00–14:15 Recent Updates on USAP Emergency Response, Maggie Knuth (USAP) 14:15–14:30 Operations Overview & SAR Exercise Planned, Gregory Tran (IPEV) 14:30–14:45 SAR with respect to new gravel runway at Mario Zucchelli Station/Terra Nova Bay, Gianluca Bianchi Fasani (ENEA) 14:45–15:00 SAR developments/capabilities in the Antarctic Peninsula, Nick Gillett (BAS) 15:00–15:15 Operation of Zhongshan Skiway & Basic Plans of 40th CHINARE, Xuyu Cheng (PRIC) 15:15–15:30 Discussion of key messages from National Antarctic Programs (<i>All</i>)</p>
15:30–16:00	<i>Coffee break</i>
16:00–17:30	<p><i>Session Chair: Chris Wilson, RCCNZ/Maritime NZ</i></p> <p>(6) Best Practice & Lessons Learned from Recent Real Events 16:00–16:20 C130 Hercules Incident of December 2019, Miguel Figueroa Ibarra (FACH) <i>(followed by 10 minutes discussion/comments) (All)</i> 16:30–16:50 IAATO Medevac of injured crew member from fishing vessel <i>Marigolds</i> by IAATO vessel National Geographic Endurance in January 2023, Lisa Kelley (IAATO) <i>(followed by 10 minutes discussion/comments) (All)</i> 17:00–17:20 Fire on MPV <i>Everest</i>, Dan Gillis (AMSA) <i>(followed by 10 minutes discussion/comments) (All)</i></p>
17:30	Day 1 Close <i>Michelle Finnemore, COMNAP</i>

Day 2: Saturday 24 June 2023	
08:00–09:00	Workshop registration for new arrivals (Mezzanine of Hotel Grand Chancellor)
09:00	Workshop begins (Grand Ballroom 1)
09:00–9:30	<i>Session Chair: Greg Johnston, COMNAP</i> Summary of key items from Day 1 and introduction to Day 2
9:30–1030	<i>Session Chair: Charlton Clark, AAD</i> (7) Regional discussions a) Peninsula, moderated by Dave Wattam (BAS) b) Dronning Maud Land/East Antarctica, moderated by Gen Hashida (NIPR) & Sven Lidström (NPI) c) Ross Sea, moderated by Simon Trotter (ANZ) d) Terra Nova Bay, moderated by Sunny Choi (KOPRI)
10:30–11:00	<i>Coffee break</i>
11:00–1130	(7) Continued, reports back with summary of shared issues/concerns/opportunities
11:30–1300	<i>Session Chairs: Samantha Siddins & Cindy-Lee Francis, AMSA JRCC</i> (8) Tabletop SAR Exercise (covering mass casualty/rescue operations scenario) Introduction & instructions for breakout groups. Conduct tabletop SAR exercises
13:00–14:00	<i>Lunch</i>
14:00–15:00	(8) Continued, discussion/reports back of key points from tabletop exercise(s)
15:00–15:30	(9) Conclusions & Reporting <i>Michelle Rogan-Finnemore (COMNAP)</i>
15:30	(10) Close of Workshop