



Australian Government

Department of Climate Change, Energy,  
the Environment and Water  
Australian Antarctic Division



AUSTRALIAN  
ANTARCTIC  
PROGRAM



# Antarctic innovations and collaboration - Innovation in Field Safety: The prevention of Search and Rescue in the Australian Antarctic Program

The Australian Antarctic Program (AAP) is currently going through a step change in operational support. The Field Operations section is due to expand and with this change comes new innovation. From a Field Operational context, the prevention of Search and Rescue (SAR) is our highest priority, but how do we prevent SAR? This poster provides an overview of current AAD Field Safety Systems, highlighting procedures, practices, policy, training and emerging technology related to field operations, and shows how this helps prevent SAR now and into the future.

## AAD FIELD SAFETY NET

Muster board, Operating conditions matrix, Map zones, Field Training, Tracking, Field Manual, SAR Team, Trip Leaders, S.I.T.R.E.P.S, Buddy system, SPOT – OK, Survival pack, Field clothing, Take 5, and many others.

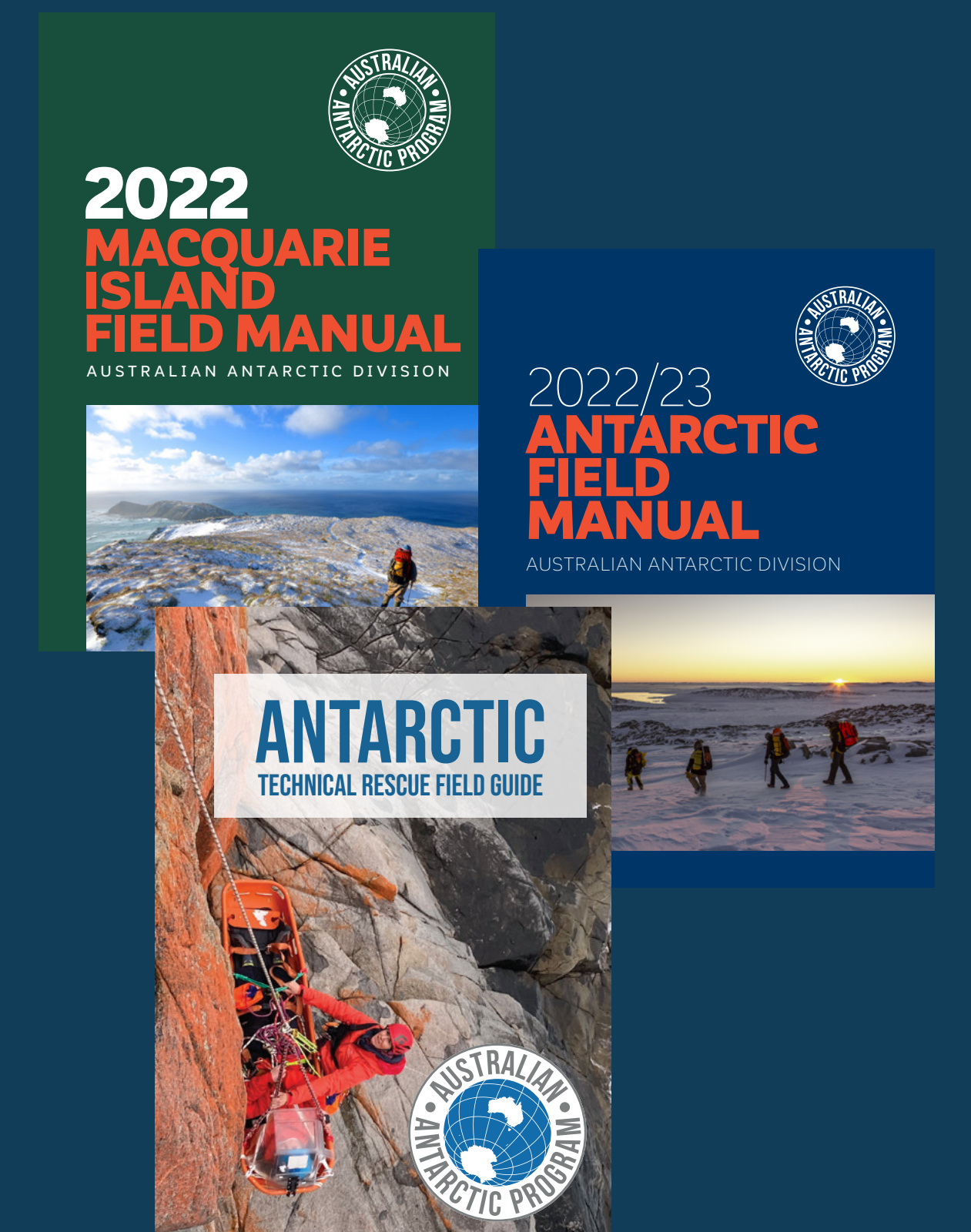
### Search and Rescue



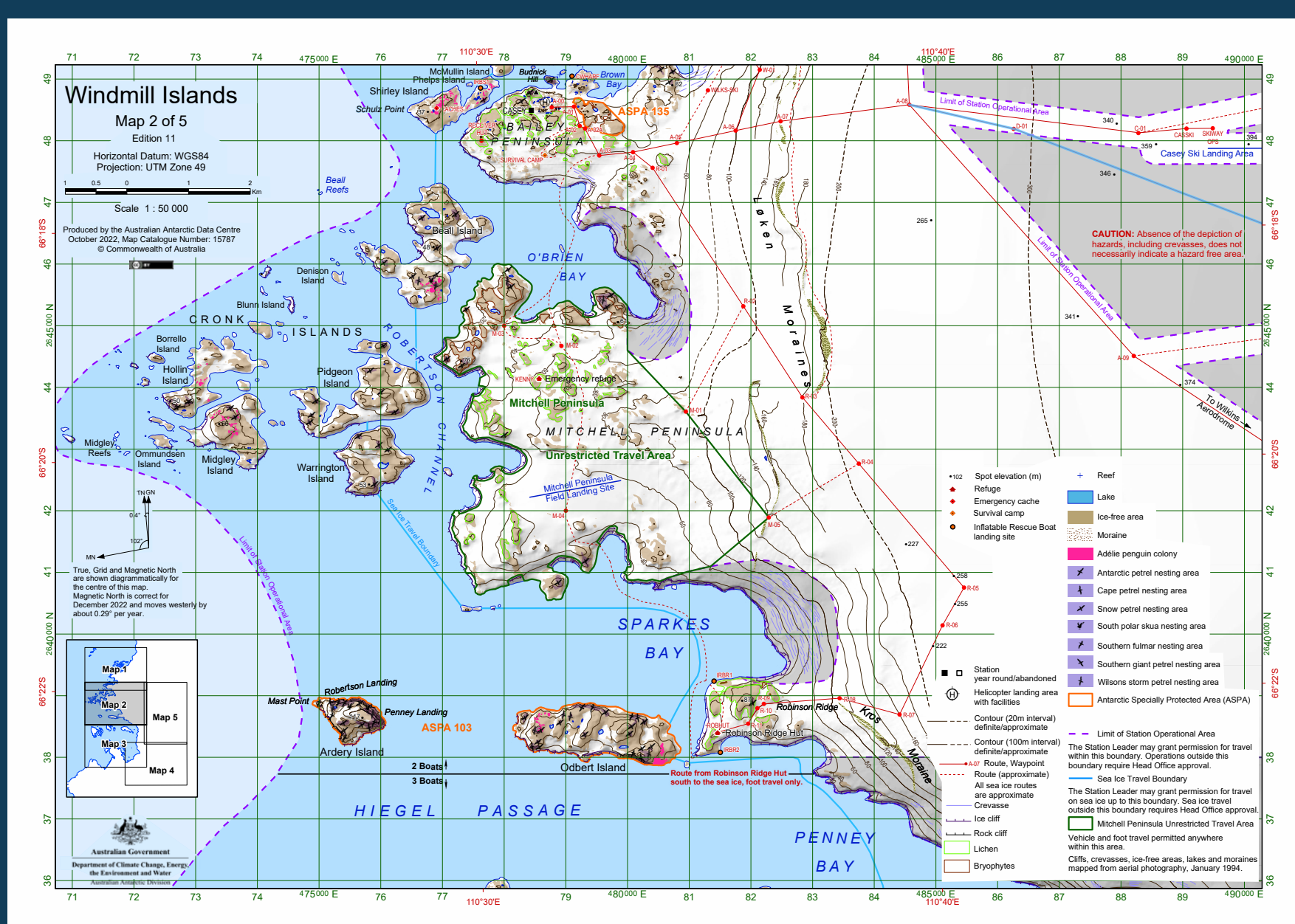
### Medical First Responder Training



### Manuals



### Station Operating Area Map



### Survival Clothing



### Operational Conditions Matrix

NORMAL	CAUTION	DANGER	STOP
<ul style="list-style-type: none"> <li>Visibility greater than 100m and/or sustained winds less than 40 knots.</li> <li>Normal Antarctic precautions.</li> <li>Unrestricted travel.</li> <li>Consider the possibility of severe weather within the next 24 hours.</li> </ul>	<ul style="list-style-type: none"> <li>Visibility less than 100m and/or sustained winds 40 to 60 knots.</li> <li>Outside travel on foot restricted to station limits or camp limits.</li> <li>Consider phoning ahead and/or carry a radio.</li> <li>Consider enclosed vehicle travel only.</li> </ul>	<ul style="list-style-type: none"> <li>Visibility less than 30m and/or sustained winds 60 to 100 knots.</li> <li>Outside travel restricted to movement between buildings within station limits or camp limits with Station Leader or Field Leader approval.</li> <li>Travel in pairs, use blizz lines, carry a radio, and consider taking field packs.</li> <li>A radio call must be made when departing and entering a building/shelter.</li> <li>All non-essential vehicle movement stops.</li> </ul>	<ul style="list-style-type: none"> <li>Sustained winds over 100 knots.</li> <li>No outside travel permitted.</li> </ul>

## TECHNOLOGY

The AAD ICT section has stood up a project to deploy numerous upgraded systems for enhanced situational awareness and field safety. This involved deploying a number of new devices and infrastructure. The aim was to deploy devices that were more capable and manageable than previously deployed devices.



### Iridium Certus

A system consisting of a satellite bearer (Iridium Certus), network infrastructure, and a local compute node. Provides an enhanced level of field communications for remote teams. This has been deployed on leased shipping and on the AAD Traverse. Local TAK servers have also been deployed on these units.



### Samsung S22

The AAD has rolled out a fleet of Samsung S22 handsets as a platform for ATAK. These use the newly installed 4G network on station for communication. They are a platform that will be used for further systems rollout in the future.



### Iridium 9575 PTT

The AAD has rolled out a fleet of Iridium 9575 PTT handsets. These provide the traditional satphone function, but can also be used in PTT mode, providing radio like communications via satellite. This is a much more user friendly and faster method of communications, that is also less prone to dropouts.



### Somewear Labs Global Hotspot Pucks

The AAD is exploring the rollout of Somewear Labs Global Hotspot pucks. This allows us to use ATAK beyond the range of the station 4G systems. It provides position information and two way messaging functionality via ATAK.



### NAL Shout Nano

NAL Shout Nanos provide a two way messaging system via Iridium SBD, and GPS tracking for personnel in the field. The GPS reports are sent back to a GSatTrack server that the stations and AAD Operations Management Centre have access to.



### NAL 9602 Trackers

NAL 9602 trackers are being deployed to our vehicles, to provide a hardwired tracking capability. The GPS reports are sent back to a GSatTrack server that the stations and AAD Operations Management Centre have access to.