

# SAREX 2015

## Background

The Australian National Search and Rescue Council, of which the NSW Police Force (NSWPF) is a member, states that "Each State/Territory Police Service should periodically take part in coordinated search and rescue exercises (SAREX). These SAREX's should be designed to exercise the SAR system, in whole or part, and test such things as operational plans, communication procedures and facilities, individual staff performance, SAR unit performance and inter-organisation and/or international operations."

The NSW State Rescue Board approved the running of a multi-agency rescue exercise which was held in the Deua National Park from Friday 12 to Sunday 14 June 2015. Multiple agencies from within the rescue environment participated.

## Aim of the Exercise

To test a large scale multi agency response, coordination and deployment arrangements of SAR resources into the field.

## Exercise Objectives

1. Assess multi agency Command, Control & Communication arrangements during a large scale SAR in a remote location.
2. Test and validate coordination of multi agency SAR resources across the operational and tactical fields.
3. Test and validate the NSW Land search and rescue (LANDSAR) coordination arrangements.
4. Practice the construction, mobilisation and deconstruction of Forward Operating Base in a remote area.
5. Practice Geospatial and Information mapping for SAR activities.

## Exercise Scope

This SAREX engaged relevant participating agencies and resources for an operational and logistical SAR response to a remote area. The intent was to enhance understanding of multi agency SAR operations, focusing on SAR planning, command and control, interagency communication, coordination and the exploitation of new and emerging technologies.

## Participating Organisations

Agencies involved in the SAREX were:

- NSW Police Force
  - Rescue & Bomb Disposal Unit (R&BDU)
  - Emergency Management Unit
  - Security Management Unit

- Advanced Technology Centre
- Radio Operations Group
- Command Elements
- Volunteer Rescue Association (VRA)
  - Bushwalkers Wilderness Rescue Squad
  - WICEN (volunteer wireless operators)
- NSW Ambulance
- NSW Rural Fire Service
- NSW State Emergency Service
- National Parks & Wildlife Service
- Westpac Lifesaver Helicopter
- Mapping and Planning Support Group

## Location

SAREX 2015 took place in the Deua National Park. The area consists of ravines, caves, forested woodlands, and is considered to be a remote environment. The Deua is a National Park on the Far South Coast of NSW, approximately 350 kilometres south of Sydney. The nearest towns are Moruya (25km), Braidwood (41km) and Cooma (71km).

The National Parks & Wildlife Service has described the Deua National Park as a “place of rugged mountain ranges, plateaus, karst and caves, wild and scenic rivers and threatened plants and animal species. A significant portion of the park is wilderness. All karsts and caves were out of exercise, and not to be entered.



The Police Forward Command Post (including a small Incident Management Team) was located within the Base of Operations Exercise Control.

The Bendethra Homestead Camp Ground is approximately two hours west of Moruya by 4wd vehicle. The roads in are a mixture of gravel road and fire trails which in places are steep and rough. Access to the camp ground involves three river crossings (Deua River) all of which require low range 4wd. So although the camp is only 25 to 30

kms from Moruya it is effectively quite remote and all resources had to be brought in.

## Why MAPS

MAPS has for some time considered extending its capabilities in the SAR field. To this end Steve Forbes and others have been working with the Australian Federal Police in the ACT jurisdiction and Ian Batley has formed a relationship with NSWPF search and rescue (R&BDU). Ian attended the SAREX last year and has been advising and assisting R&BDU with the development of its SAR software known as POLSAR.

POLSAR is a MapInfo Pro based application which is being developed by Pitney Bowes (Sydney) on behalf of NSWPF. The software is a work in progress with version 1 being in use since late last year. Version 2 is under development and was partially tested during the SAREX. It includes some Incident Management tools but as yet only a couple of spatial/mapping tools to supplement off-the-shelf MapInfo Pro. The concept is that POLSAR will eventually be user friendly enough for a Police Officer to operate during the course of a search while simultaneously carrying out his or her functions as a search coordinator, etc. But the software is not at that stage yet and currently requires a dedicated mapping officer as there is little possibility that a search coordinator could do the data entry needed in a timely fashion during a search. This would be akin to the Planning Officer doing the mapping in an IMT. While this can and does happen in a small incident we know from experience it is impractical in larger incidents.

R&BDU is unable, for the usual reasons, to supplement its numbers with a dedicated Mapping Officer other than from a volunteer resource. Several agencies could provide such volunteers; the most likely being RFS, SES or the VRA. However Senior Constable Phil Downes has recommended to senior officers that MAPS is the preferred supplier of such volunteers. His recommendation is partly because of the relationship already developed through Ian and partly because we are specifically a spatial/mapping group with existing GIS abilities and thus require very little training to be fully effective.

The SAREX was a practical test not only of the POLSAR technology but also the concept of volunteer GIS operators supporting the search coordinators.

### **The Exercise**

SAREX2015 was conducted as a very realistic simulation of a light aircraft crash. The scenario was that a Cessna carrying 6 people had left Moruya en route to Deniliquin. Had departed slightly from the flight path to sight see over the Deua National Park and had gone down.

The realistic simulation even extended to an actual Cessna fuselage having being airlifted into a remote area of the Park for the searchers to find.

All groups assembled for a briefing at 1800 on Friday.

Three Police Officers (Phil Downes, Richard Walsh and Col ? ) were appointed search coordinators and worked in a tent equipped with 240v power, several laptops and an A1 inkjet printer. Their role was very similar to that of Planning in the familiar IMT but with some cross over into what in a traditional IMT would be the Operations role. They designed the search areas and allocated them to the various search teams. This was an iterative process over the two days as the search teams reported their findings and the search was progressively concentrated on areas where wreckage had been found. The Search



Coordinators also briefed and directed the search parties thus acting as both Planning and Operations. The MAPS team (Ian Batley and Frank Blanchfield) worked as part of this team.

The Exercise Controller (roughly equivalent to the Incident Controller) was located in a separate tent along with the WICEN wireless operators who were the equivalent of the Coms team at an IMT. Reports from the field came in to the “Coms” tent and information was passed to and from the Coordinators.

**Comment [IFB1]:** I think our tent was more a combined Ops & planning. The other was Comms, logistics, other admin and the IC.

The searching was actually done by teams from National Parks, VRA, SES and RFS which each provided several teams of 4 or 5 people. Each of these organisations also provided a Liaison Officer (LO) to facilitate communications between their searchers and the Coordinators.

Search areas were designed early Saturday morning and instructions including a map were passed to each search team by about 0900. All teams were in the field by about 1000. Some were scheduled to return to base camp that evening but most were to camp out in the search area over night. Obviously they had to carry provisions and camping gear as well as communications equipment. Day time weather was ideal both days with maximum temperatures around 13 degrees and clear blue skies but overnight temperatures were only just above freezing and base camp was blanketed in heavy fog until at least 0900 both days.

Both RFS and Westpac helicopters were used to deploy and retrieve some search parties but not for actually searching. NSWPF deployed a UAV which was used quite successfully during the search. Search teams were also tracked by the WICEN Coms Team in real time via GPS transponders. These recorded tracks were available to the Coordinators for analysis after the exercise but were not utilised during the search except for the added level of safety they provided for the searchers.



SAREX2015 was as much a test of logistics for remote area searches as it was of searching itself. Catering for the exercise was mostly done by RFS and was more than adequate. A lot of the other logistics such as power and lighting were also handled by RFS which acquitted itself very well in this regard. National Parks brought a couple of tons of fire wood – it was very cold [overnight](#)!

Apart from searchers there were many RFS and SES staff and volunteers providing logistical support and a number of police

supporting the exercise but not actually searching. In all there were about 150 people involved which meant about 70 to 80 vehicles on site along with a small village of tents.

Because SAREX2015 was an exercise there was also an additional level of management/supervision with an Exercise Director and a team of evaluators overseeing the “exercise” as opposed to the actual search. There were also procedures for shutting down the exercise and passing over command if a real incident occurred. This happened on Saturday afternoon when an SES volunteer suffered respiratory difficulties while searching in a remote area. The volunteer was airlifted to hospital and once the all clear was given the exercise was reconvened.

## MAPS Role

Ian left Canberra around 1000 on Friday 12 June. Picked up Frank at Congo and we arrived at Bendethra around 1500.

During SAREX we operated two copies of POLSAR on two laptops. One machine had the current approved version 1 of POLSAR and was used as the actual incident record. The other machine had a beta version 2 of POLSAR with some untested enhancements. This was only used for some offline digitising of search areas and to test the new functionality.



The search coordinators drew up the search areas/patterns on a hard copy map and we heads up digitised these into the system and produced hard copy for the search teams.

During Saturday, as teams reported their whereabouts and any finds, we entered these into POLSAR and produced summary plots for briefing the Exercise Controller and for re-evaluating the search plan.

On Saturday afternoon the wreckage and some casualties were found. Late Saturday new search areas were designed concentrating on the site of the wreckage and estimations of where the unaccounted for passengers might be. These were drawn up and digitised. Unfortunately there was no way of transmitting maps of their new search area to teams who were camped out overnight. So the new areas could only be described over the radio.

During the course of the weekend Ian installed some MapBasic code which greatly enhanced POLSAR's layout functionality. This code came from the NSW RFS MapInfo based MapDesk but is in the process of being modified to suit POLSAR's requirements. This enabled a very professional product to be produced in a timely fashion at the conclusion of the exercise.

Remaining plane passengers were found Sunday morning and the search declared complete. However search teams still had to hike or be airlifted back to base camp which took until about 1200.

Ian and Frank, along with most participants, left Bendethera around 1230 arriving at Congo at 1430.

## Conclusions from SAREX2015

POLSAR is an adequate tool for the task but requires a reasonable knowledge of MapInfo Pro and currently lacks the task specific tools found, for example, in MapDesk. It requires a dedicated mapping officer as the search coordinators are not able to do the required data entry in a timely fashion while performing their primary duties. It also needs work on standardised symbology as we were simply choosing symbols that best visualised what we were plotting.

R&BDU rely upon and greatly value Ian's advice on the future direction and priorities for the development of POLSAR.

Tools for downloading GPS data to POLSAR need more work. The download incorporated in POLSAR V2 was tested. It produced a plot from the GPS tracks but had no way of naming and saving multiple downloads. The Police were also trialling a new system for retrieval of the GPS information. Each team was handed a card with details on how to email their GPS data to the Coordinators. This was to try to avoid holding up crews at the end of shifts allowing them to get home sooner. The success or otherwise of this test will not be know for some days.

A process needs to be developed for getting data from the UAV. The UAV operator did not see the need for doing it and was unsure even how to do it. He was happy with his basic mapping capabilities but did not seem to grasp that sharing that data with the IMT would help them in determining where he had been, what was searched and more importantly, what had been missed.

The logistics and catering for this exercise were an extraordinary effort. While this was a major success for this exercise it is highly unlikely that a routine or even an extended land search would get the same attention. The facilities provided at SAREX2015 would not be typical of a NSWPF land search.

MAPS volunteers are well suited to supporting NSWPF land searches if they:

- Have a good working knowledge of MapInfo Pro;
- Are prepared to work in a forward command post environment ie
  - Camp out
  - Work under canvas or in a mobile van
  - Cope with uncertain catering arrangements, ablutions, etc.

The NSWPF are keen to establish a MOU with MAPS.

Frank J Blanchfield  
Supervisor

15 June 2015