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## **Joint Search and Rescue Exercise in the Antarctic**



# Joint Search and Rescue Exercise in the Ross Sea, Antarctica

## 1.0 Introduction

The International Association of Antarctica Tour Operators (IAATO), Rescue Coordination Centre New Zealand (RCCNZ), Oceanwide Expeditions and Heritage Expeditions planned an Antarctic Search and Rescue Exercise (SAREX) that was held on Thursday 12<sup>th</sup> February 2015. It followed joint initiatives with the Maritime Rescue Coordination Centre (MRCC) Ushuaia, Argentina and MRCC Chile in 2014 and 2013 respectively.

This was a table-top exercise featuring live components with the intention to test existing protocols, contingency plans and lines of communication between the ship in distress, RCCNZ and IAATO. Potential assets within the search and rescue region that could be tasked with assisting, including other IAATO vessels, were also evaluated.

## 2.0 Incident Scenario

While on passage from New Zealand to the Ross Sea the Oceanwide Expeditions passenger ship *MV Ortelius*, with 80 people on board, was 130 nautical miles east of Cape Adare when a fire broke out in the engine room. During the scenario the incident transitioned from:

- The crew conducting firefighting operations without the need for external SAR assistance; to
- The fire spreading, placing the ship in grave and imminent danger; to
- The fire extinguished and power/propulsion restored, but a number of crew injured during the firefighting; three of whom required medical evacuation.

The New Zealand Coast Radio Station conducted live satellite broadcasts, prefixed with Exercise, to elicit responses from vessels of opportunity within a 500 nautical mile radius of the incident location. Heritage Expeditions ship *MV Professor Khromov* (referred to as *Spirit of Enderby* in IP53 *IAATO Overview of Antarctic Tourism*) and a number of National Antarctic Programme and fishing vessels responded to the broadcasts and were tasked to assist. These vessels did not divert from their normal operations but provided estimated times of arrival on scene and details on their capability to assist.

Once the fire was extinguished the evacuation of those requiring more significant medical attention was coordinated through the efforts of the helicopters aboard *MV Ortelius*, fixed wing aircraft from the Royal New Zealand Air Force (RNZAF) and the facilities of the US Antarctic Programme and Antarctica New Zealand.

The exercise inject messages that triggered these scenario transitions were all based upon real SAR operations coordinated within the Ross Sea region, so what transpired and the time frames in which it took place is what would be realistically expected. A timeline of the more significant events as recorded at RCCNZ is at Appendix 1 and a graphical depicting of potential response vessels is at Appendix 2.

### 3.0 Observations

#### 3.1 Media

While RCCNZ has a duty to liaise with and release information to the media on SAR aspects of any RCCNZ coordinated operation, it is important that the timing and content of information to be released is understood by and coordinated with the casualty vessel's owner. For the media aspect of this exercise IAATO agreed to be the single point of contact between RCCNZ and the tour operators, which helped streamline communications and reduce the burden on the SAR authority and the vessel's company. Establishing a media relationship early in a SAR operation can help to create confidence and trust between the SAR authority and casualty vessel's owner.

#### 3.2 The role of the casualty ship captain/crew

This exercise highlighted the value of having the captain/crew of the casualty vessel participate in the planning of the SAR response and form part of the overall Incident Management Team (IMT). Their knowledge of the capabilities and limitations of their vessel will assist the SAR Coordinator to assess the most appropriate response. For example, during this exercise the time taken to transport the injured crew to a medical facility was significantly reduced by the availability of the casualty ship's own helicopters.

#### 3.3 Lessons Confirmed

In 2013 New Zealand submitted a working paper to ATCM 36 on observations/lessons learned from SAR incidents in the Ross Sea region. In addition to the observations above, this exercise served to confirm these lessons and identify some of the differences between operating in the Antarctic Peninsula area and the Ross Sea region.

*Distance from SAR Facilities* - It is likely that the distance from SAR facilities for vessels requiring assistance in the Ross Sea region will be greater than those typically experienced when operating in the Antarctic Peninsula region. The only established SAR facilities for the five million square kilometre New Zealand Search and Rescue Region (NZSRR) of Antarctica are in New Zealand. The most distant point in the area for which New Zealand has Search and Rescue coordination responsibility is over 5000 kilometres from Wellington New Zealand. The sailing time between Christchurch and McMurdo Sound, over 3700 kilometres, is 10 days in open water (and could be longer dependent on ice conditions). The flight time is five hours by C-17 and eight hours by C-130.

*Proximity of Assistance* - Statistically, and confirmed during this exercise, in the marine environment the quickest SAR response has been provided by vessels of opportunity. In the Ross Sea region these are likely to be research, National Antarctic Programme and fishing vessels. Around the Antarctic Peninsula it is typically more likely for other passenger ships to be in close proximity to a casualty vessel.

*Duration* – During this exercise it would have taken 38 hours for the injured to be transported to hospital in Christchurch, New Zealand. Statistically this would have been one of the more rapid resolutions to a SAR incident in the Ross Sea region. By contrast during this time RCCNZ was also coordinating a SAR response to the *FV Antarctic Chieftain*, trapped in ice with propeller damage and 26 people on board. It took two and a half days for the United States Coast Guard ice breaker *Polar Star* to arrive on scene, and once clear of the ice pack another two weeks for the fishing vessel to arrive under escort in New Zealand.

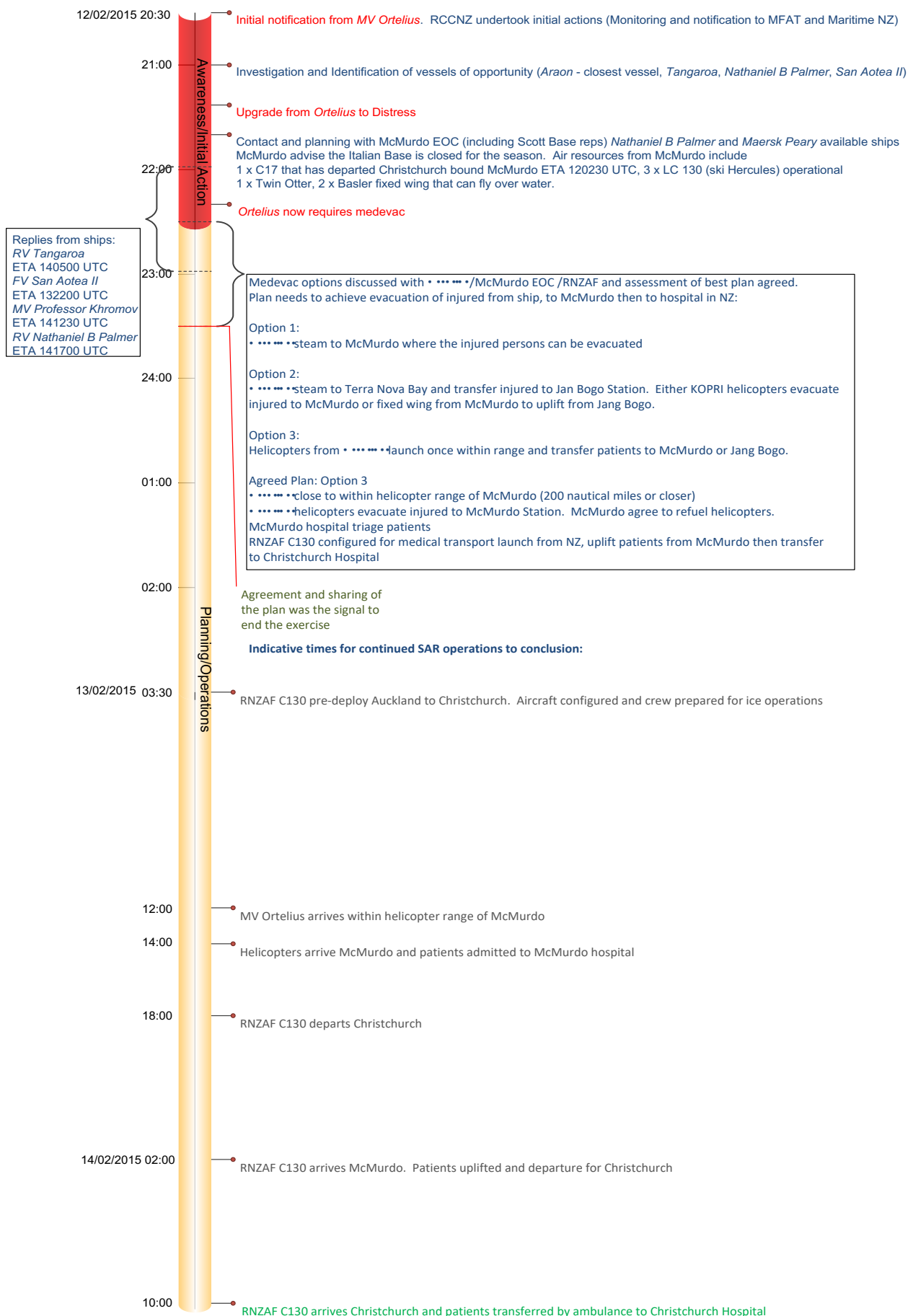
#### **4.0 Conclusions**

It is important for all organizations operating in a marine environment, including Antarctic waters, to understand that this scenario could happen to any vessel at any time. While thorough risk assessment and prevention plans will reduce the likelihood of such events, situations can occur that are beyond a vessel crew's ability to resolve without external SAR assistance. In these situations it is critical that vessels nearby, as well as SAR authorities ashore, are rapidly alerted so they can assist in a coordinated SAR operation with minimum delay. This is the basic principle of the Global Maritime Distress and Safety System (GMDSS), which applies to all sea areas.

The point has previously been made that SAR response in the Antarctic is a collaborative effort, and while all those who operate in the Ross Sea region are potential risks to plan for, they are also potential resources to harness during SAR operations. Trust is a sometimes intangible but key element to the success of these SAR operations. Establishing and maintaining regular communication and sharing of knowledge/experience between SAR authorities and Antarctic operators will help to strengthen this key element.

Within the context of these two conclusions, both IAATO and RCCNZ would welcome future opportunities for additional desktop exercises with other related organisations.

### Appendix 1: Timeline of significant events (all times UTC)



Appendix 2: Surface Picture

