

**INDEPENDENT REVIEW OF
OAMARU SEARCH AND RESCUE
INCIDENT: 11 MAY 2003**

**REPORT TO THE NEW ZEALAND SEARCH
AND RESCUE COUNCIL**

**John Bowdler
Independent Reviewer**

July 2003

LETTER OF TRANSMITTAL

Mr Alastair Bisley
Chairman
New Zealand Search and Rescue Council
Ministry of Transport
38-42 Waring Taylor Street
WELLINGTON

Dear Alastair

On behalf of the New Zealand Search and Rescue Council, you commissioned me to carry out an independent review of the search and rescue response to the incident near Oamaru on 11 May 2003.

I am pleased to submit my report. The report has been prepared against the terms of reference provided to me as an independent reviewer. Twenty recommendations are made for the consideration of the Search and Rescue Council.

My thanks go to the many individuals and organisations that contributed to the review process, through being available for interview, through providing relevant documentation, and through offering comment as my thinking developed.

I wish to record my appreciation to Mr Alan Lloyd of Australian Search and Rescue in Canberra for technical support and to Mr John Marshall, practising Barrister of Wellington, for legal advice. The administrative assistance of Mr Jonathan Graham and Ms Helen Ingles of the Ministry of Transport is also gratefully acknowledged.

Yours sincerely

John Bowdler
31 July 2003

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SUMMARY OF REPORT

At the request of the Minister of Transport, the New Zealand Search and Rescue (SAR) Council commissioned this independent review into the search and rescue response to a fishing boat accident off the coast of Oamaru on 11 May 2003. The review was "not to allocate fault (if any) on any party or to pre-empt or duplicate any other inquiry into this incident" Rather, the purpose of the review was "to provide a prompt investigation, within the terms of reference, to enable the earliest possible implementation of any improvements in current SAR arrangements and procedures that may be necessary".

The Reviewer, supported by independent technical SAR and legal advice, consulted with individuals and organisations with a major interest in the search and rescue response, and subsequently discussed relevant preliminary and draft views with some of those participants before finalising this report. The delivery of the SAR response on 11 May was assessed against current arrangements and procedures. A number of other recent inquiries and reviews into related SAR incidents and issues were also consulted in finalising this report.

The Accident, and Search and Rescue

The fishing boat *Time Out*, with five men on board, capsized and sank approximately twelve nautical miles off the coast of Oamaru at around 1015 on Sunday, 11 May. The owner of the boat activated a distress beacon at 1020 and then kept the group together in the water, awaiting rescue. Only one of the five was wearing a life jacket. Over approximately the next two hours, three men perished.

The duty Search and Rescue Mission Coordinator (SARMC) of the National Rescue Coordination Centre (NRCC) received advice at 1021 of aircraft hearing a distress beacon signal in the lower half of the South Island. As the initial notification stemmed from activation of a distress beacon, the incident was a Class III incident, with the SAR response coming under the control of the NRCC.

After assessing the position of beacon signals available through the next satellite pass, at around 1050 the SARMC established a view that there were in fact two active beacons in the lower half of the South Island, one near Wanaka and the other south east of Oamaru. The SARMC first tasked a helicopter to locate the Wanaka signal and then at 1119 arranged for a helicopter based at Taieri Airport, Mosgiel, to search for the beacon off Oamaru. The helicopter operator estimated departure in about 15 minutes.

However, unknown to the SARMC, there was a delay in assembling its full crew, and the helicopter did not leave Taieri airport until around 1210. Soon after departure, it picked up the beacon signal. Two survivors were located in the water at around 1230, and were both rescued. The body of one of the deceased fishermen was also recovered. The survivors were returned to Moeraki for transfer by ambulance to Oamaru hospital.

Subsequently, the rescue helicopter and another local helicopter searched the area around the point of rescue. Two boats were also despatched from Moeraki, in worsening weather conditions. No further trace of *Time Out* or the missing men was found that afternoon or on subsequent days.

Assessment of the Search and Rescue Response

In assessing the SAR response against current arrangements and procedures, several non-conformances are apparent. Contrary to the procedures in the NRCC's Search and Rescue Operations Plan (SAROPs), the SARMC did not make early contact with the Marine Duty Officer (MDO) of the Maritime Safety Authority (MSA) when a distress beacon signal was received from a position at sea.

Contact with the MDO first occurred at 1201. Given the then expected imminent arrival of the helicopter, the MDO did not contact the Maritime Operations Centre (MOC) to initiate radio broadcasts or local police contact – which was inconsistent with the MDO Manual. Also contrary to arrangements and procedures, the SARMC did not contact the New Zealand Police at all, the local Police learning of the incident through an alert from St John Ambulance at about 1232, and then again after broadcasts from the helicopter at 1252-1256. The Police Southern Communications Centre was informed by the MOC at 1300.

The lack of early contact with the MDO and the Police meant that early opportunities to broadcast alerts were not provided, and that local SAR resources were not alerted or mobilised. The local SAR response that afternoon was organised by the Police and their Marine Advisor, and proceeded independently of the SARMC.

There were also a number of other inconsistencies with SAROPs arrangements and procedures in relation to media liaison, the process of suspension of the Class III incident and the transfer of coordination of the SAR response to the local Police at 1630.

A significant factor in the management of the Oamaru incident was the high workload faced by the SARMC in responding to two incidents at once from his home, using cellphone contact to manage both processes. The lack of communication from the helicopter, again workload-related, also hampered the SARMC's capacity to manage the Oamaru SAR response.

Outside of the role of the NRCC, there were a number of other problems with the response elsewhere in the SAR system, notably contact delays in relation to a key member of the helicopter's crew, difficulties at times in cellphone operability, errors or insufficient information in messages passed or recorded, and a failure to follow up delays in expected communication.

Matters for Remedial Attention

The Reviewer has concluded that current arrangements and procedures are in some areas inappropriate to achieving an effective response to distress beacon incidents. A range of recommendations is made, ranging from immediate actions to address the gaps or inconsistencies in current arrangements and procedures, to more fundamental

review of the current approach to responding to distress beacon incidents (and SAR structures more generally).

The Reviewer recommends that the immediate actions be completed within a one to three month period after consideration of this report.

A new sub-section on responding to distress beacon activations should be included in the SAROPs. The SAROPs also needs updating or expansion on Police contact arrangements, on providing guidance to SARMCs on the priority to situations where survivors may be in the water, and on tasking SAR resources. Related documents in other NRCC member organisations need to be fully consistent with the SAROPs.

While significant elements of discretion should remain with SARMCs, it is recommended that notification of relevant member organisations of the NRCC should be made mandatory in the SAROPs at certain early points in a SAR response, to avoid repetition of the experience of the Oamaru incident. Paging and communication procedures should also be strengthened across the SAR system.

The Reviewer recommends that a number of policy and institutional reviews should be completed within six months of consideration of this report.

There is a need to review the nature of the current NRCC concept, given the pressure it can place on one person (the SARMC) and the risk this in turn has for an effective SAR response. It is recommended that a series of risk assessments be undertaken, with a view to deciding whether the current NRCC operating arrangements should be changed. For example, the NRCC is currently only staffed during office hours and longer periods of operation – and with at least a SARMC and MDO on site - may better support the more complex SAR responses and SAR activity generally.

It is also recommended that programs of consultation be undertaken with local commercial operators of SAR equipment, and local police and volunteer organisations, to improve understanding of all those involved in the Class III system and to strengthen procedures and databases.

As part of these more fundamental considerations, attention is recommended to establishing a better "audit trail" of communications and decisions for Class III SAR responses, to inform analysis of particular incidents and to foster learning from experience throughout the SAR system.

As an outcome of these processes, the Reviewer recommends that the SAR Council develop a national SAR statement, to provide an overview of major policies and procedures, and to provide a common reference manual for more detailed operational arrangements and procedures in SAR organisations.

1. THE REVIEW

1.1 TERMS OF REFERENCE

The New Zealand Search and Rescue Council commissioned this review at the request of the Minister of Transport, the Hon Paul Swain, following a search and rescue (SAR) incident involving a fishing boat accident off the coast of Oamaru on 11 May 2003.

The Search and Rescue Council commissioned John Bowdler, an Australian consultant and formerly a Deputy Secretary of the Australian Department of Transport and Regional Services, to undertake the Review.

Alan Lloyd, Rescue Control Centre Crew Chief, Australian Search and Rescue (AusSAR) in the Australian Maritime Safety Authority provided independent SAR technical assistance. Other officers of AusSAR provided further advice and assistance.

The Reviewer received independent legal advice from John Marshall, a practising Barrister of Wellington.

The Reviewer was asked to provide an urgent, and independent, assessment of the search and rescue procedures involved in the response of authorities to the accident. The Terms of Reference provided to the Reviewer are at Attachment 1.

From the Terms of Reference, it is important to emphasise from the preamble that: *"The purpose of this review is not to allocate fault (if any) on any party or to pre-empt or duplicate any other inquiry into this incident, such as the forthcoming Coroner's inquest or any New Zealand Maritime Safety Authority investigation of the accident. Rather the review is to provide a prompt investigation, within the terms of reference, to enable the earliest possible implementation of any improvements in current arrangements and procedures that may be necessary."*

The review was consistent with this provision in the Terms of Reference. Further, the Terms of Reference require the Reviewer to:

- 1. Gain an understanding of the sequence and times of events in the search and rescue (SAR) response to the incident*
- 2. Ascertain whether the current SAR arrangements and procedures were followed*
- 3. Ascertain whether the arrangements and procedures are appropriate for an incident of this nature*
- 4. In the light of the findings under 1-3, consider whether the arrangements and procedures need immediate remedial attention*

5. *Make recommendations to the New Zealand Search and Rescue Council, as appropriate, by 31 July 2003*

The following sections of the report cover each of these stages of the review process.

It is important to note that this review is not a commission of inquiry, and the evidence provided to the Reviewer was not sworn evidence. The nature of the consultation undertaken is described below.

1.2 CONSULTATIONS

The Reviewer consulted widely with those individuals and organisations involved in the accident, initial search and rescue response and the subsequent search. These consultations were held in Wellington, Mosgiel, Dunedin, Oamaru and Moeraki. Advice was provided to individuals and their organisations on the nature of the investigation prior to interviews being held. Legal advisors were present at a number of interviews. The SAR technical advisor also attended the initial consultations in Wellington and the consultations in the South Island.

Relevant documentation was made available to the Reviewer on the accident and the SAR response, as held by the National Rescue Coordination Centre (NRCC), the New Zealand Civil Aviation Authority (CAA), the New Zealand Maritime Safety Authority (MSA), the New Zealand Police and the St John Ambulance. A number of parties, as a matter of convenience, also provided the Reviewer with copies of their Statements of Evidence to the Coroner's inquiry.

The Reviewer met with the New Zealand SAR Council on 10 July to provide a report on the progress of the review.

After the initial interviews and information gathering, the Reviewer consulted reports of two Coronial inquiries into SAR incidents in recent years, and the responses of SAR authorities to these incidents and reports. The report of a major Maritime Search and Rescue Review (December 2001) was also consulted, as was documentation related to a workshop held in April 2002 involving NRCC staff, staff of NRCC member organisations and national, district and local Police representatives. To better inform understanding of the interpretation and application of certain current SAR arrangements and procedures, the Reviewer held telephone interviews with the other Search and Rescue Mission Coordinators of the NRCC.

A listing of all those interviewed is at Attachment 2. Major operational documents used in the review process are at Attachment 3. Reference is made to relevant information sources and documents at appropriate points in the text.

Preliminary views were provided for discussion with several individuals and organisations involved in the SAR response. Subsequently, relevant parts of drafts of the Report were also provided for comment. The responses received were taken into account in finalising the conclusions and recommendations in this report.

2. THE SEARCH AND RESCUE INCIDENT

Term of Reference #1 requests that the Reviewer “*gain an understanding of the sequence of times and events in the search and rescue (SAR) response to the incident*”.

It is noted that some of the times in this Section are approximate –the recording of times was clearly beyond those displaced from the boat, and the rescue helicopter, being focussed on the search and rescue task, also was not recording times. These timing approximations are reflected in the Chronology of Events at Section 2.4, but recorded times of communication from telephone and radio networks have been used to assist in giving more precision to the chain of events on 11 May.

2.1 THE ACCIDENT: 11 MAY 2003

The Independent Review does not purport to assess the cause of the initial accident that triggered the SAR response on 11 May, or the cause of death of the three fishermen lost in the accident. These matters are for investigation by the Police, the Coroner, and the Maritime Safety Authority (MSA). However, an understanding of the nature of the accident, and the weather conditions that day, is fundamental to assessing the SAR response.

This account is based largely on an interview with Ian Anderson, the owner of *Time Out*, the recreational fishing boat involved in the accident, and Mr Anderson's statement to the Coroner. Information from the Marine Duty Officer (MDO) of the MSA has been used in discussion of water temperature and possible survival times.

The boat *Time Out* left Oamaru at approximately 0715 on Sunday 11 May 2003, with Ian Anderson and four other men on board. Conditions were reported as calm when the boat left Oamaru. However, from judging the area forecasts from the early morning, weather conditions were expected to deteriorate later in the morning, with substantial winds by around mid-day, and a return to Oamaru at lunchtime was planned.

Time Out was approximately six metres long, of aluminium construction. Ian Anderson stated that it was equipped with a wide range of safety equipment – a marine radio, a cellphone, a flare kit, a fire extinguisher, spare batteries, a Global Positioning System (GPS) device, eight life jackets and an emergency beacon or EPIRB (Emergency Position Indicating Radio Beacon).

The beacon or EPIRB was of the "121" type, which provides a locational signal which then is pinpointed by satellite tracking and/or assistance from aircraft. The 121-type beacon is typically used in boating and other recreational activities.¹

¹ The alternative emergency beacon used is the "406" type, which provides a digitised signal with a unique identifier embedded in that signal, allowing identification from a register of owners. The 406-type beacons are significantly more expensive, and are mainly used by commercial operators. Location of the signal follows a similar process to the 121-type beacons, using satellite positioning, however the 406 beacons provide a more refined signal that gives a more accurate position.

The boat proceeded southeast to its desired position about 12 nautical miles off the North Otago coast, abeam with Kakanui Point (between Oamaru and Moeraki). A number of other local recreational fishing boats were also on the water at this time, some of which were reported as passing near to *Time Out* earlier in the morning, or as having been relatively close around the time of the accident.

When a school of groper was located, fishing commenced at around 1000. Shortly afterwards, at about 1015, a fishing line entwined the outboard motor propeller of *Time Out*. As efforts were made to free the obstruction, the boat was seen to be taking on water and the bilge pump was switched on. However the boat continued to take on water and, with resulting wave activity, capsized.²

The five men were thrown into the water. None were wearing life jackets at the time, and only one was able to put on a life jacket taken from the boat. Ian Anderson retrieved the emergency beacon from the boat and activated it, with his watch showing the time as **1020**. Other than the one life jacket and the EPIRB, the other safety-related equipment on board could not be used in the rapidly unfolding crisis following the capsizing.

The sea was extremely cold, with an estimated temperature in that area and time of year of 11 degrees Celsius. In this water temperature alone, average survival time was likely to be in the range two to four hours.³ Survival is also influenced by sea and wind conditions, whether a life jacket is worn and the degree of movement of the individual in the water.

The men gathered at the bow of the capsized boat, however the boat sank after about 15 minutes. Ian Anderson then linked the men together in a line formation, to await rescue. However three of the five – Keith Wallis, Tainui Kani and Graham Wallis - perished in the water. Ian Anderson and Phillip Edwards were rescued between 1230-1245, suffering from hypothermia. The body of Graham Wallis was retrieved from the water a few minutes after the rescues.

The bodies of Keith Wallis and Tainui Kani were not found in subsequent searches on 11 May or on the following days.

² It is understood that the Maritime Safety Authority is analysing the likely dynamics of the accident for the type of boat involved.

³ Hypothermia has two stages – functional and survival (or lethal) time, as measured by core body temperature. Functional time is when the individual can still help him/herself, survival time follows when the individual becomes unconscious. In the Oamaru incident, average functional time was likely around two hours, and then average survival time around another two hours. Survival, or lethal time, in this incident was calculated by the MDO to be in the range 3.5 to 4.5 hours.

2.2 THE SEARCH AND RESCUE RESPONSE

This sub-section continues the first Term of Reference. It seeks to be descriptive only in describing the major events and indicating times.

In preparing this account of the SAR response, the Reviewer has mainly used interview information from the duty Search and Rescue Mission Coordinator (SARMC), Mr Terry Knight, and his statement of evidence to the Coroner. The MDO on roster on 11 May, Mr Bruce Wilkinson, was interviewed and provided supporting documentation from the MSA. The account also uses information from interviews with Mr Graeme Gale and Sergeant Brian Benn from the rescue helicopter, Mr Gale's draft statement to the Coroner, and Sergeant Benn's jobsheet summarising his involvement in the incident.

This information, and advice from others involved in the SAR response, is reflected in the Chronology in Section 2.4.

Identification of Signals and Tasking of SAR Resources

Two aircraft operating in the south of the South Island detected activation of a distress beacon at **1021** on 11 May 2003, and advised Air Traffic Control (ATC) in Christchurch. The alert was passed on immediately to the duty SARMC of the National Rescue Coordination Centre (NRCC) in Lower Hutt. The SARMC was at his home, from where he conducted the SAR response throughout the day.

These aircraft were flying at high levels, and hence the initial signals did not give any more than a very general indication of beacon location. Follow-up by the SARMC with Christchurch ATC did not produce any further information, given there were no low level aircraft in radio contact with ATC in the general area. South Canterbury Aero Club at Timaru was contacted by the SARMC but could not assist in locating a beacon. There was no light aircraft activity reported around Dunedin/Oamaru for the SARMC/ATC to contact.

The SARMC contacted Mission Control Centre (AUMCC) in Canberra and received information on the **1040** satellite pass (the timing of which he had learned from following up an earlier report that morning).⁴ Details from this satellite pass were provided to the Christchurch ATC centre by the AUMCC via the AFTN⁵ system, and faxed by ATC to the SARMC at **1047**. The SARMC then plotted four possible locations. Assisted by the earlier reports from aircraft, he was able to eliminate two locations in the Tasman Sea. The remaining locations were north east of Wanaka and 11 nautical miles south east of Oamaru. The frequencies from the beacons were 121.5/243 MHz and the SARMC considered both could be marine ELTs.

At that point the SARMC considered that he had sufficient information to activate a search response (rather than wait for information from the next satellite pass, which

⁴ AusSAR operates three local user terminals (LUT) to assist in covering its wide area of surveillance. As well as the Wellington LUT, terminals are located at Bundaberg in Queensland and Albany in Western Australia.

⁵ Aeronautical Fixed Telecommunications Network

would give him information by around 1125 to resolve the positions of the alerts). He consulted the NRCC database to identify operators in the two areas with radio direction-finding equipment. The SARMC first tasked an operator for the Wanaka incident. His first call was at **1109**, and tasking this search took up until just after **1115**.

At **1119** he contacted Helicopters Otago Ltd to enlist their assistance in the Oamaru search. The owner of the company and pilot of the SAR helicopter, Graeme Gale, indicated that he could be airborne in around 15 minutes. (Mr Gale's company policy is not to go out on a search only mission, but rather to go out with both search and rescue capacity, hence a crew of four needed to be put together.) The SARMC asked to be contacted before the helicopter took off – given that the next satellite pass would give a clearer position of the beacon.

At **1125** the positions of the alerts were clarified when resolved alert advice was sent from the AUMCC to Christchurch ATC and then on to the SARMC. Two separate beacons were confirmed – one in the Hawea Flat area near Wanaka, the other 12 nautical miles south east of Oamaru.

For the next half hour the SARMC was involved in numerous telephone conversations with the helicopter pilot responding to the Wanaka incident.

During this time, the Helicopters Otago aircraft, *Air 1*, was readying at Taieri Airport at Mosgiel. The pilot, co-pilot and paramedic were quickly assembled, however there was a delay in locating the fourth member of the crew, Brian Benn, a volunteer with a local SAR organisation as well as a Police Sergeant in Dunedin, who was the designated "swimmer" or water rescuer. The helicopter, *Air 1*, finally took off at about **1210** and reported to Dunedin ATC at **1212** that it was underway. No contact was made with the SARMC.

The SARMC rang the Marine Duty Officer (MDO) at **1201** and informed him of the dispatch of the two helicopters. Because the SARMC expected *Air 1* to reach the Oamaru location soon, no decision was taken by the MDO to broadcast any marine warnings or advise local SAR organisations. No contact was made with New Zealand Police at this point (or earlier) by the SARMC.

The Search and Rescue

Shortly after leaving the Dunedin area, *Air 1* began to receive very strong signals through its direction-finding equipment from the emergency beacon of *Time Out*. It flew straight to the site of the accident and located two survivors in the water. There are no exact times available of when this occurred but it is clearly around **1230**. The two survivors were rescued from the water by around **1245**, the emergency beacon was then taken from the water and switched off, and finally the body of a deceased man was located and winched aboard shortly thereafter (around **1248-1249**).

Visibility in the area was reported as good and, although there was some turbulence, flying conditions were reasonable. There were no boats seen in the area at the time of the winching. At the time of the rescue, Graeme Gale and Brian Benn estimated the swell at 3-4 metres, with southerly strong winds of around 40 knots.

Advice from the paramedic on board *Air I* was that the survivors needed to receive medical attention as soon as possible. A call was made at **1252** to St John Ambulance advising of the rescue, and seeking access to the helipad at Moeraki. After a short further search, *Air I* issued a Mayday call to shipping at **1256**.

Following receipt of communications from the helicopter, Moeraki local radio put out an alert to any boats in the area to advise of the accident, the rescue and that two persons were still missing. Preparations were made at the helipad for the arrival of *Air I*.

During the period approximately 1130 to 1200, the SARMC had had extensive contact with the Wanaka search, but then became increasingly concerned that he had not heard from the Oamaru rescue helicopter. The SARMC tried two cellphone numbers, the first at **1237** and then the other at **1250** and, with these calls being unsuccessful, called ATC at Dunedin to seek advice on the helicopter's flight plans. ATC was asked to contact the helicopter and request that it phone the SARMC. The resulting call from Graeme Gale, at **1302**, advised of the rescue, the short search following, and his intended delivery of the survivors to Moeraki. The call was brief, as Mr Gale indicated that *Air I* was in an active rescue situation. The SARMC instructed Mr Gale to call him back as soon as he had finished what he was doing.

At **1303**, the Maritime Operations Centre (MOC) advised the MDO that it had heard the Mayday message, and passed on the details of the rescue and the fact that two persons were still missing. The first Mayday relay was sent by the MOC at **1305**. The MDO conveyed advice on the rescue to the SARMC at **1310**.

Air I did not contact the SARMC until **1358**. During this time *Air I* was occupied initially in caring for the survivors on the helipad at Moeraki with engines running while ambulances arrived to take them to Oamaru, and unloading the body of the deceased man. Having around 30 minutes fuel remaining, *Air I* left Moeraki to take on fuel from a local helicopter company in Herbert, so that the search could be continued.⁶ Subsequently a SAR helicopter from this company entered the search.

At 1358, the SARMC requested that *Air I* and the other helicopter commence an expanding square search, up to 20 nautical miles out from the incident location. After several situation reports, *Air I* called the SARMC at **1536** saying that nothing had been found and it was agreed it should return to base.

During the afternoon, two boats were dispatched from Moeraki in the search effort, without any success in finding the two missing men. Sea conditions by that time were reported to have deteriorated significantly.

The SARMC discussed the situation of the search with the MDO at **1600**, and subsequently with the Director of Maritime Safety at **1618**. It was decided to suspend the search and effectively downgrade the incident from Class III to Class II, so transferring coordination to the local Police. The suspension took effect at **1630**. The

⁶ This was apparently in an area of poor reception for the helicopter's cellphone.

local Police handled duties such as overseeing search activities, interviewing survivors and informing next-of-kin.

In subsequent days, search by fixed wing aircraft was carried out and boats in the area were asked to be alert for any signs of the missing men or debris from *Time Out*. On some of these days, sea conditions were very poor and limited the extent of search activity. A search of the coastline was also carried out.

The search for the two missing men was later suspended, without any success in finding their bodies, or any significant debris from the boat.

2.3 THE WANAKA INCIDENT

In assessing the response to the Oamaru incident, it is critical to keep in mind that the SARMC faced another alert on the morning of 11 May. This incident could have been as serious as at Oamaru and also required a high level of attention from the SARMC.

The helicopter company contacted at 1109 to carry out the search for this beacon, Aspiring Helicopters of Wanaka, could not provide a helicopter with direction-finding equipment, but was still tasked for the search, as other possible services were some distance away. However the consequence was a high level of cellphone activity between the pilot of the helicopter and the SARMC, as is clear from the Chronology of Events.⁷

The Aspiring Helicopters' pilot showed considerable initiative in using the resources available to him to track down the beacon, but in this process made considerable calls on the time of, and required decisions by, the SARMC.

The source of the Wanaka signal was ultimately reported at **1422** to be an inadvertently activated beacon in a herd-mustering helicopter. This may explain why it proved hard to pin down, through the combination of the helicopter's movement and the approximate location methods necessarily used (in the air and on land) by the pilot of the search helicopter.

The impact of the Wanaka incident on the response to the Oamaru incident is further discussed in Section 3.

2.4 CHRONOLOGY OF EVENTS

The following table provides a sequence of the times and events in the Oamaru incident (unshaded), and the times of relevant activity from the Wanaka incident (shaded). In some cases, times are necessarily approximate. More precise times have been taken from telephone and radiocommunication time sheets. All times reflect local time (or Universal Time Constant (UTC) +12 hours).

For each event, the table shows the time and nature of the event, the initiator and recipient of the communication and the source(s) of the information. The Elapsed

⁷ In Section 3, the telephone activity of the SARMC is set out for both incidents through the key time span 1020-1400, as part of the discussion of the overall workload faced by the SARMC.

Time column shows time points before and after the activation of the distress beacon at 1020.

List of Acronyms

ATC	Air Traffic Control
AUMCC	Australian Mission Control Centre
BB	Brian Benn
DMS	Director of Maritime Safety
GG	Graeme Gale, owner/pilot of <i>Air 1</i>
IA	Ian Anderson, owner of <i>Time Out</i>
JM	John McLellan, North Otago Marine Advisor
MDO	Maritime Duty Officer
MOC	Maritime Operations Centre
MSA	Maritime Safety Authority
NRCC	National Rescue Coordination Centre
Police SCC	Police Southern Communications Centre, Christchurch
SARMC	Search & Rescue Mission Coordinator
SCAC	South Canterbury Aero Club
St John	St John Ambulance Control Room, Dunedin
TK	Terry Knight, duty SARMC

CHRONOLOGY OF EVENTS: 11 May 2003

Time	From\To	Event	Elapsed Time	Source
0715		<i>Time Out</i> leaves Oamaru, sea calm, nil wind	-03:05	IA
~1015		<i>Time Out</i> capsizes	-00:05	IA
1020		EPIRB activated	+00:00	IA
1021	ATC Christchurch\ NRCC	Christchurch ATC advise NRCC of beacon reports from aircraft	+00:01	NRCC\TK
1024	NRCC\ ATC Christchurch	Request low level aircraft listen out – nil aircraft	+00:04	NRCC\TK
1027	ATC Christchurch\ NRCC	Aircraft reports of ELT activation	+00:07	NRCC\TK
1030	ATC Christchurch\ NRCC	Aircraft reports of ELT activation	+00:10	NRCC\TK
1031	NRCC\SCAC Timaru airport	Request aircraft listen out Timaru airport	+00:11	NRCC\TK
1037	SCAC\NRCC	SCAC advise nil beacon heard Timaru airport. NRCC requested airborne aircraft also be contacted. SCAC advised would only call back if aircraft were hearing beacon. SCAC did not call back	+00:17	NRCC\TK
1043	NRCC\ AUMCC	Discussion with AUMCC on beacon detections	+00:23	NRCC\TK
1045	NRCC\ATC Christchurch	Request any other aircraft reports	+00:25	NRCC
1046	ATC Christchurch\ 	ATC advise aircraft hearing beacon 50 NM north of Invercargill	+00:26	NRCC

	NRCC			
1047	ATC Christchurch\ NRCC	AFTN Christchurch contacts SARMC - 2 initial satellite alerts	+00:27	NRCC\TK
1047	AUMCC\NRCC	Initial AUMCC Alert 15338\39 received by fax	+00:27	NRCC\TK
1047	AUMCC\NRCC	Initial AUMCC Alert 15340\41 received by fax	+00:27	NRCC\TK
1048	ATC Christchurch\ NRCC	Contact with SARMC	+00:28	NRCC\TK
1048-1109	NRCC	SARMC actions - plotted positions - consulted database - updated computer log	+00:28-49	TK
~1050	NRCC	SARMC initial assessment – 2 beacons – 2 locations	+00:30	TK
1102	ATC Christchurch\ NRCC	Contact with SARMC	+00:42	NRCC\TK
1109	NRCC\Aspiring	Initial call to Aspiring Helicopters	+00:49	NRCC\TK
1110	NRCC\Aspiring	Initial call to Aspiring Helicopters	+00:50	NRCC\TK
1111	NRCC\Aspiring	Aspiring Helicopters - nil DF – but tasked to use vehicle to do land DF	+00:51	NRCC\TK
1116	NRCC\ATC Christchurch	Discussion on next AUMCC alert messages	+00:56	NRCC\TK
1119	NRCC\GG	Taieri based helicopter <i>Air 1</i> tasked. ETD 15 mins	+00:59	NRCC\TK
1125	AUMCC\NRCC	Merged MCC Alert 15339 received by fax (Oamaru)	+01:05	NRCC\TK
1125	ATC Christchurch\ NRCC	2 resolved AUMCC position alerts	+01:05	NRCC
1126	D Flett\St John	Doug Flett contacts Dunedin St John Ambulance control to locate	+01:06	St John

		Brian Benn		
1127	Aspiring \NRCC	Telephone call Aspiring Helicopters	+01:07	NRCC\TK
1131	NRCC\ Aspiring	Telephone call Aspiring Helicopters	+01:11	NRCC\TK
1134	ATC Christchurch\ NRCC	Aircraft ELT reports	+01:14	NRCC
1136	Aspiring\ NRCC	Telephone call Aspiring Helicopters	+01:16	NRCC\TK
1145	Aspiring \NRCC	Telephone call Aspiring Helicopters	+01:25	NRCC\TK
~1150		Brian Benn's wife arrives soccer field	+01:30	BB
1152	Aspiring \NRCC	Telephone call Aspiring Helicopters	+01:32	NRCC\TK
1201/02	NRCC\MDO	MDO advised of two incidents active Hawea Flat\Wanaka and Oamaru. Helicopters responding. Discussed issuing broadcast for Oamaru but, as helicopter was expected 5-15 minutes away, MDO decided to await advice from helicopter before issuing any alerts	+01:41\42	TK\BW
~1206	<i>Air 1</i>	Brian Benn arrives Otago Helicopters at Taieri airport	+01:46	BB
~1210	<i>Air 1</i>	Helicopter <i>Air 1</i> departs Taieri	+01:50	GG
1212	<i>Air 1</i> \Dunedin ATC	Helicopter <i>Air 1</i> advises Dunedin ATC has departed Taieri airport	+01:52	NRCC\TK
1216	St John\T Kent	Ambulance supervisor Terry Kent given Sitrep of incident	+01:56	St John
1224	AUMCC\NRCC	Merged MCC Alert 15339 received by fax (Oamaru)	+02:04	NRCC
1224	AUMCC\NRCC	Merged MCC Alert 15341 received by fax(Hawea Flat\Wanaka)	+02:04	NRCC
1226	ATC Christchurch\ NRCC	Resolved AUMCC position alerts	+02:06	NRCC
1229	Aspiring\NRCC	Telephone call Aspiring Helicopters	+02:09	NRCC\TK
1233	Aspiring\NRCC	Telephone call Aspiring Helicopters	+02:13	TK
1237	NRCC\ <i>Air 1</i>	Call to <i>Air 1</i> – nil contact	+02:17	NRCC\TK
1239	Aspiring\NRCC	Telephone call Aspiring Helicopters	+02:19	NRCC\TK
1230-50	<i>Air 1</i> \St John	Helicopter conducting 4 winches - 2 survivors rescued – 1 deceased	+02:10-30	St John

		- 2 missing – EPIRB recovered		
1246	Aspiring\NRCC	Telephone call Aspiring Helicopters	+02:26	TK
1250	NRCC\Air 1	Call to Air 1 – nil contact	+02:30	TK
1250	NRCC\Air 1	Call to Air 1 – nil contact	+02:30	TK
1251	NRCC\ATC Christchurch	Aircraft ELT reports	+02:31	NRCC\TK
1252	Air 1\St John	Request to arrange Ambulance to Moeraki helipad	+02:32	St John
1255	Aspiring\NRCC	Telephone call Aspiring Helicopters	+02:35	NRCC\TK
1256	Air 1\VHF CH 16	Broadcast to shipping	+02:36	NRCC
1256	St John\ Ambulance	Ambulance tasked to Moreaki helipad	+02:36	NRCC
1300	NRCC\Dunedin ATC	Request contact with Air 1. ATC advise Air 1 departed 1212	+02:40	NRCC\TK
~1300	John McLellan	North Otago SAR Marine Advisor commences local response and issue of local broadcast to vessels	+02:40\41	Police
1300/01	MOC\Police SCC	MOC contact Police Southern Communications Centre to seek information on the incident	+02:41	MOC\Police
1302	Air 1\NRCC	Air 1 in process of survivor rescue, contact NRCC at next available opportunity	+02:42	NRCC\TK
1303	MOC\MDO	MOC advises MDO of sunken vessel south of Oamaru, 2 persons missing position 45 14S 171 08E. Search helicopter had issued a VHF CH 16 broadcast to vessels in the area to assist. MDO instructs MOC to broadcast Mayday relay	+02:43	NRCC\BW
1304	NRCC\ ATC Christchurch	Response to Pager message	+02:44	NRCC
1305	MDO\VHF CH 16	First official Mayday relay broadcasted via MOC	+02:45	NRCC
1305	ATC Christchurch\	Missed alert from AUMCC for Oamaru	+02:45	NRCC

	NRCC			
1305	NRCC\CAA Media Manager	Message left with CAA Media Manager	+02:45	NRCC
1305	AUMCC\RCC	Missed MCC Alert 15339 (Oamaru)	+02:45	NRCC\TK
1305	AUMCC\RCC	Missed MCC Alert 15341 (Hawea Flat\Wanaka)	+02:45	NRCC\TK
1306	<i>Air 1</i> \St John	Request from <i>Air 1</i> for Police to meet helicopter at Moreaki helipad	+02:46	NRCC
1307	NRCC\ ATC Christchurch	Response to pager message	+02:47	NRCC
1309	MDO\NRCC	MDO advises NRCC\SARMC of sinking of vessel <i>Time Out</i>	+02:49	NRCC
1310	Aspiring\NRCC	Telephone call Aspiring Helicopters – located ELT in helicopter	+02:50	NRCC\TK
1310	<i>Air 1</i> \St John	Air 1 at Moeraki helipad	+02:50	St John
1312	MDO\MOC	MDO queried details of incident. MOC advise 2 rescued, 2 missing, and 1 deceased. Sunken vessel believed to be a fishing vessel	+02:52	MDO
1314	NRCC\ATC Christchurch	SARMC contact with ATC	+02:54	NRCC
1319	NRCC\MDO	Sitrep from SARMC, Wanaka beacon inadvertent distress beacon activation by helicopter involved in herd control. Oamaru confirmed 2 rescued and 1 deceased	+02:59	MDO\DMS
1323	MDO\DMS	Sitrep on Oamaru incident given to Director of Maritime Safety	+03:03	MDO
1324\6	NRCC\MDO	SARMC confirmed Oamaru incident Class III, agreed more airborne assistance required as nil response from vessels to assist	+03:04\06	MDO
1328	Oamaru Police\NRCC	Discussion on Police actions with SARMC	+03:08	NRCC\TK
1329	MDO\MOC	MDO advises MOC that Class III incident in progress. MOC advise contact established with Police SCC who knew little of incident. Oamaru Police undertaking local response	+03:09	NRCC\MDO
1332	MDO\NRCC	Attempt to contact	+03:12	NRCC\TK
1333	Ambulance\St John	Ambulance advises deceased person recovered from Moeraki helipad	+03:13	St John

1333\4	MDO\NRCC	MDO confirms position of boat sinking. SARMC discusses lack of communications with <i>Air 1</i>	+03:13	MDO\TK
1333	Police SCC\MOC	Police Southern Communication Centre contacts MOC	+03:13	NRCC
1335\6	<i>Air 1</i> \St John	<i>Air 1</i> advises St John ambulance helicopter was on ground at Herbert for refuelling	+03:15\16	NRCC\St John
1336	NRCC\Dunedin ATC	Request contact <i>Air 1</i>	+03:16	
1341	NRCC\Dunedin ATC	Request contact <i>Air 1</i>	+03:21	
1343	NRCC\ <i>Air 1</i>	Attempt contact	+03:23	
1346	MOC\MDO	Police SCC confirmed status of <i>Time Out</i> crew. F\V Resolution 40 NM from incident location had responded to broadcast, released by MOC after discussion with MDO as vessel too far away to assist	+03:26	MDO
1353	<i>Air 1</i> \St John	<i>Air 1</i> completed refuelling Herbert	+03:33	St John
1358	MDO\MSA	MDO rang MSA Accident Investigation Manager to advise	+03:38	MDO
1358	<i>Air 1</i> \NRCC	Discussions on tasking. NRCC advised second helicopter was assisting in search	+03:38	NRCC\TK
1409	NRCC\MDO	MDO advised by NRCC of helicopter search. SARMC tasking helicopters to conduct 20 NM expanding square search	+03:49	NRCC\MDO
1420	Media\MDO	One News media request	+04:00	
1422	Aspiring\NRCC	Aspiring Helicopters advise that Hawea Flat\Wanaka beacon located in helicopter ZK-IAS	+04:02	NRCC\TK
1422	MDO\DMS	Discussed media response. Director Maritime Safety agreed to handle media inquiries to MSA	+04:02	NRCC\MDO\DMS
1425	MDO\DMS	Director Maritime Safety advised by MDO that a Class III incident	+04:05	NRCC\MDO\DMS
1430	MDO\MOC	Request weather in Oamaru area. Advised SW winds 40 kts, rough seas. MOC tasked to obtain sea temperature	+04:10	MDO

1433	<i>Air I</i> \NRCC	Telephone call <i>Air I</i> to NRCC	+04:13	GG
1445	MDO\DMS	On pass media inquiry from TV 3	+04:25	MDO
1446	<i>Air I</i> \St John	<i>Air I</i> request for information from survivors in regard to missing person wearing lifejackets	+04:26	St John
1458	MDO\NRCC	Request update SARMC, no new development	+04:38	MDO
1500	MDO\DMS	Sitrep, no new change	+04:40	MDO
1513	<i>Air I</i> \NRCC	Cellphone call <i>Air I</i> to NRCC	+04:53	GG
1536	<i>Air I</i> \NRCC	Task completed, helicopter return to base	+05:16	NRCC\TK
1547	MOC\MDO	Sea temperature 11C, lethal range estimate 3.5 – 4.5 hours	+05:27	MDO
1600	MDO\NRCC	Sitrep requested. Discussed use of private surface vessels involved in search. Missing persons had been in water well past survival\lethal times. SARMC advises he is closing incident and will turn search over to Police for search for bodies	+05:40	NRCC\TK\ MDO
1602	MOC\MDO	MOC instructed to cancel “Mayday Relay” broadcast to Oamaru area, incident closed	+05:42	MDO
1608	MOC\MDO	Broadcast ceased	+05:48	MDO
1610	MDO\NRCC	Discussed closing of Class III incident. SARMC considered an “Air” response not “Marine” response because of resources used. SARMC advised to contact Director of Maritime Safety regarding suspension of incident	+05:50	MDO
1618	NRCC\DMS	SARMC calls Director Maritime Safety	+05:58	NRCC\TK
1628	DMS\MDO	MDO asked to clarify type\status of vessel via mainstay database. Director Maritime Safety advised Class III suspended	+06:08	MDO
1630	NRCC\DMS	SARMC advises Class III incident suspended, incident returned to Police Oamaru. Discussion of suspension protocols	+06:10	NRCC\DMS\ TK
1709	Media\MDO	Media enquiry	+06:49	MDO
1712	MDO\DMS	On pass media inquiry. Confirmed vessel <i>Time Out</i> not on mainstay database	+06:52	MDO

3. ASSESSMENT OF SEARCH AND RESCUE RESPONSE

This Section considers Term of Reference #2, which asks that the Reviewer *"ascertain whether the current search and rescue arrangements and procedures were followed"*.

3.1. BACKGROUND CONSIDERATIONS

Under New Zealand's SAR structure, the Oamaru incident was a Class III incident, in that it involved an activated emergency location transmitter. The Wanaka incident was also Class III in nature. Class III incidents are handled by the National Rescue Coordination Centre (NRCC), based in Aviation House, Lower Hutt.⁸

The NRCC is fully set up, 24 hours a day, and can be staffed by the relevant NRCC member organisations (eg Maritime Safety Authority, Police, Civil Aviation Authority, the Defence Forces) for the planning and conduct of a SAR response. During normal business hours, Monday to Friday, a Search and Rescue Mission Coordinator (SARMC) is on duty in the NRCC and can request assistance from NRCC member organisations, as required. Outside business hours, five contracted SARMCs rotate on a weekly basis in being on call to respond to Class III incidents

The SARMCs are provided with a comprehensive Operations Bag, comprising relevant documents and databases, two cellphones, a facsimile machine, and a laptop computer. The contents of the Bag enable the duty SARMC to respond to an emerging situation from his home or another location. As will be discussed further below, the duty SARMC has considerable discretion in deciding how to handle an incident, and whether support resources should be sought from other NRCC members, or the NRCC should be fully activated on-site.

SAR Performance Agreement

The services of the NRCC are funded through an annual Performance Agreement between the Minister of Transport and the Civil Aviation Authority, under the Civil Aviation Act and the Maritime Transport Act. In 2002-03, \$1.309 million was directed to the NRCC's functions, covering both administration costs and contracted SAR costs. If contracted SAR costs are incurred over the allocated sum, then the Minister undertakes in the Agreement to provide extra funds to the NRCC.

As well as funding, the Performance Agreement includes a SAR goal ("To deliver superior Class III search and rescue services"), three output objectives and details of the services to be provided. The latter include coordination of, and communication with, all relevant persons, organisations and government departments, and provision of adequate skilled staff to underpin a 24-hour service each day. Performance expectations include that 100 per cent of SAR incidents will be responded to within

⁸ Class I operations are those which can be carried out by the Police alone, while Class II operations are controlled by the Police, but involve assistance from other organisations and persons.

10 minutes of notification, and that 100 per cent of SAR operations will be successfully concluded.

SAR Policy Manual

The annual Performance Agreement is given further substance by the Civil Aviation Authority's Class III SAR Policy Manual (current version dated 1 June 2001). The Manual spells out international and national obligations, legislative underpinning, the area of New Zealand's SAR responsibility and lines of accountability.

The Policy Manual provides the framework for the conduct of SAR operations and, in relation to Section 5.2, Search Operations and Co-ordination, para 5.2.1 states that "The initiation of a SAR operation shall be the responsibility of the SARMC in consultation with the agency most concerned with the particular operation as follows(c) Ships and other marine vessels (other than Class II); SARMC in consultation with MDO, Maritime Safety Authority". The Manual provides in Section 6.3 that the Suspending Authority for missing non-naval ships and other marine vessels is the Director of Maritime Safety or Duty Manager.

In relation to Media and Public Information, para 12.1.2 states "The Manager, NRCC, shall be responsible for the release of operational information relevant to the process of a specific search. Where matters of concern arise the matter shall be referred to the appropriate Suspending Authority for guidance."

SAR Operations Plan

The above two documents provide the context for the key NRCC operational document, the Search and Rescue Operations Plan (SAROPs, current version dated 31 May 2001). This Plan provides the operational framework for the operation of the NRCC and its members, and is the central guide to SARMCs. The other document of general relevance to SAR operations is the International Aeronautical Maritime Search and Rescue (IAMSAR) Manual. This Manual, produced by the International Civil Aviation Organisation and the International Maritime Organisation, provides baseline guidance for the provision of SAR services.

The procedures set down in the SAROPs require the duty SARMC to go through a number of processes in addressing a Class III incident. In the case of activation of an emergency beacon, the SARMC is required to take steps to identify the location and nature of the beacon, initiate a SAR response as appropriate, and notify and coordinate with relevant member organisations of the NRCC.

The SARMC is in overall charge of a Class III operation, but may in some cases delegate local control to another organisation in New Zealand, usually the Police, or another authority elsewhere in New Zealand's Search and Rescue Region (SRR). If, in the opinion of the SARMC the situation so warrants, the NRCC can be activated on site at Lower Hutt. While the procedures in Section 5 of the SAROPs are detailed, there remains a substantial level of discretion available to the SARMC in managing a SAR response, to address the specific nature and requirements of each incident situation.

Other organisations with membership of the NRCC have their own supportive documents and procedures to guide their representatives, and their SAR activities more generally. Reference is made also in this Report to documents used by the Maritime Safety Authority and the Police.

3.2 NRCC RESPONSE

The following analysis of the NRCC's SAR response on 11 May has been made against the framework of the above documents, and particularly the SAROPs. The analysis has also been informed by interviews with the duty SARMC on 11 May, and the NRCC Manager, Mr Rodney Bracefield, their responses to written questions and their statements of evidence to the Coroner. Operational databases held in the NRCC were also consulted.

The Reviewer was provided with a copy of the Management Review Report on the incident, as finalised on 17 June 2003. Interviews with other SARMCs assisted the Reviewer form an opinion of the interpretation and application of certain current SAR arrangements and procedures.

3.2.1 The Application Of Arrangements And Procedures

At the outset of this analysis, the Reviewer notes that specific references to distress beacon activation are not extensive in Section 5 of the SAROPs. If broader references were not made to the other content of the Section, there would be very little in way of written arrangements and procedures to guide SARMCs specifically in response to these incidents. Discussion with SARMCs has indicated a degree of variation in individual approaches to distress beacon activations, built up through experience as well as documentation and training. This somewhat "loose" situation in regard to formal arrangements and procedures complicates the assessment of the NRCC/SARMC response on 11 May. The situation is further complicated by an apparent lack of uniformity in, and linkages between, documentation in other agencies.

Initial Response

On 11 May, the SARMC responded to the notification of the Oamaru and Wanaka beacons within three minutes, well within the ten minutes set down in the Performance Agreement and para 5.5.1 of the SAROPs.

After receiving advice of emergency beacon signals being received by aircraft at 1021, the SARMC acted promptly and appropriately in contacting Air Traffic Control (and subsequently the South Canterbury Aero Club), and Mission Control in Canberra, in the early stages of the response.

At around 1050, after receiving information from the 1040 satellite pass, it was clear to the SARMC that two beacons were in activation, one inland, the other off the coast. While the next satellite pass would give him definite information on the locations by around 1125, he considered he had sufficient to proceed with. This is consistent with the advice in the SAROPs that "If confirmation of uncertain information cannot be

obtained without undue delay, the SARMC should act on a doubtful message rather than wait for verification” (para 5.2.2, and repeated in 5.6.2 and 5.6.10).

At this stage he moved to task a response to both distress beacons, going to the database of operators in the Operations Bag to identify local helicopter operators with direction-finding equipment. (There is otherwise no detail provided in the SAROPs to guide the SARMC in the selection and tasking of SAR resources.) The SARMC did not consider relative priorities between the two incidents and their locations (noting there is nothing in the SAROPs to prompt or guide such consideration).

Notification and Coordination of Other NRCC Members

At this point the issue of notification of, and coordination as necessary with, other NRCC members became a relevant consideration. In Section 5 of the SAROPs, there are a number of references to prompt SARMC consideration of notification and coordination tasks, and who should be involved in particular cases. Notification and coordination are consistent with the cooperative approach set out in the Performance Agreement and the Policy Manual.

In the SAROPs, para 5.5.1(c) (iii) requires the MDO to be advised if a Local User Terminal (LUT) alert message is received from a position at sea; the Distress Phase Checklist in para 5.5.1(d) prompts alerting and briefing of other NRCC members. Para 5.6.8, for an Alert Phase, requires the SARMC to alert and fully brief appropriate NRCC duty personnel – specifically, the MDO in the case of all incidents involving or likely to involve marine vessels. Para 5.6.13 for a Distress Phase indicates that “The SARMC is responsible for all Class III SAR operations”, and provides guidance on coordination activities for the SARMC.

The SARMC has confirmed that he did not formally declare either an Alert Phase or a Distress Phase in the case of the Oamaru and Wanaka incidents. In his response to the Reviewer’s preliminary questions, the SARMC said that he did not see the requirements in section 5.6, specifically 5.6.8 and 5.6.13, of SAROPs as relevant to the search for an emergency signal. Rather, he considered that they primarily relate to situations involving an overdue aircraft or vessel, and are not usually pertinent to the search for a distress beacon.

The Reviewer does not find that Alert or Distress Phases should have been declared for this incident under current arrangements and procedures. The SARMC’s approach is consistent with the view held by SARMCs that it is not necessary to declare such Phases for distress beacon activations – such declarations being seen as applying particularly to overdue aircraft.

However, there is a more general issue about the application of 5.6 of the SAROPs in distress beacon incidents. The Manager, NRCC said in response to questions that provisions in 5.6 applied generally to the response to a distress beacon situation (and particularly para 5.6.13), and this was the view of most other SARMCs. The Reviewer’s reading of this part of Section 5 accords with these views about general applicability. Certainly the common reaction to emergency beacon activation is that it represents a potential distress situation, and particularly so where a resolved alert position is determined. This view is generally held in the SAR community, and is

consistent with other documentation, such as the MDO Manual. (The need to resolve any ambiguity in this important area is taken up in Sections 4 and 5.)

There are no timelines or particular decision points mandated about when such notification and coordination should take place. The SAROPs leaves these steps as a matter for the discretion of the SARMC in the particular circumstances of the incident(s). However, there is no implication that the time span is open-ended, and the Reviewer has assumed that action would be expected within as short a timeframe as circumstances allow.⁹

In the Reviewer's opinion, the two key NRCC members that also had a central interest in the Oamaru incident were the Maritime Safety Authority and the Police. (The Police certainly also had an interest in the Wanaka incident, as potentially did the MSA if the incident was on Lake Hawea.)

The Reviewer notes that the MDO was contacted by the SARMC at 1201. However the Police were not contacted at all during both incidents, either through the Southern Communications Centre or the PLO.¹⁰ The SARMC indicated to the Reviewer that he considered the Oamaru incident to be "a marine incident", as it did not fall within the 12 nautical mile limit that he understood to be the boundary of Police coverage.

However the Reviewer considers the lack of contact with the Police to be inconsistent with current SAR arrangements and procedures. Apart from the important consideration of workload, this lack of contact cannot be explained by any formal arrangement or procedure. The Reviewer was not able to substantiate the existence of the 12 nautical mile limit in any SAR documentation. The Manager of the NRCC confirmed there was no fixed limit, and noted that the 12 nautical mile figure had a historical base in the New Zealand territorial sea limit. The NRCC Manager considered that SARMCs should use commonsense about Police notification in the particular circumstances.¹¹

Even if such a figure was to be applied as a "rule of thumb" in the Oamaru incident, the Reviewer anyway notes that the beacon signal was broadly located 11-12 nautical miles off the coast, and given the margins of uncertainty in such cases the use of SARMC discretion to contact the Police would be expected.

The Police indicated that, with near to shore incidents, their expectation was that the NRCC/SARMC would be in contact to assess whether they had a capacity to respond

⁹ The introductory paragraph to Section 5 of the SAROPs provides general guidance about the speed of response to incidents, given the assumption that there are survivors who need assistance, and whose survival chances diminish with time. "The success of a SAR operation depends on the speed with which the operation is planned and carried out" (para 5.1).

¹⁰ Although not set out in the current SAROPs, the procedure now applied is that the Police would usually be contacted through the relevant Communications Centre, in this case Christchurch. The Police Liaison Officer would be contacted if the NRCC was to be activated, where there were next-of-kin issues, where special issues arose in the SAR response which the PLO could help address, or where there were problems in accessing the Communications Centre.

¹¹ The views of other SARMCs indicate a variety of interpretations – some use 10 nautical miles as a guide or "starting point", some 12, and some no figure, leaving judgement of involvement to the Police when contacted. None could indicate a formal advice on this matter. There is mention of the term "close to shore" in another context in para 5.4.2 of the SAROPs, but no distances are defined.

in the particular circumstances. However this expectation is not recorded in the SAROPs.

The Reviewer notes that there had been considerable debate about Police notification issues in recent years, including through a series of workshops to discuss improvements to notification and communications arrangements. In the most recent of these workshops in April 2002, Police representatives put their case for early notification by the NRCC to learn of an incident, provide input to SAR considerations as appropriate, and assist in mobilising local Police and volunteer SAR resources. Subsequent to this workshop, the Police established a new Beacon Protocol to assist in responding promptly to NRCC/SARMC advice in cases such as Oamaru and Wanaka.

Consistent with the guidance in the SAROPS, the Reviewer considers that there were two points early in the response where the SARMC should have given consideration to alerting the MDO and the Police. Indeed, in the case of the MDO, contact was clearly required.

At around 1050-1100, contact with the MDO and the Police was entirely appropriate under the SAROPs to discuss possible responses and advise of the SARMC's intention to task search aircraft. The tasking of aircraft indicates that a judgement has been reached that the incident is potentially serious and requires a physical response. Certainly 5.5.1(c) (iii) made contact with the MDO necessary at this point, with a LUT alert position identified at sea. Contact with the MDO at this alert stage would, if considered necessary, trigger an "all ships" (or CQ) advisory message (para 5.5.1(c)(ix)).¹²

However the SARMC did not initiate any contact with the MDO and the Police at around this time, and confirmed to the Reviewer that neither did he directly refer to the Distress Phase Checklist (which prompts consideration of such contact), stating that he had relied on his experience and training in choosing his actions.

If contact was not considered at 1050-1100, the second point where the SARMC should have given consideration to alerting the MDO and Police was around 1130, after the two helicopters had been tasked – and just after the resolved alert advice was received at 1125. This contact could have resulted in local SAR resources being placed on alert, and the issuing of an "all ships" advisory or a Mayday broadcast.

Tasking of SAR Resources and Search Planning

The Reviewer notes that the lack of formal arrangements and procedures for some SARMC tasks and actions in the current SAROPs, as mentioned in the opening paragraph of this sub-section, makes it difficult to address Term of Reference #2 in two other areas. The first is the detail of tasking the SAR resources, and related requirements for communication between the resources and the SARMC/NRCC. The only reference to this matter is in para 5.8.2, and this relates mainly to the role of the Air Directing Officer (ADO). There is provision for the ADO or SARMC to check the

¹² The MDO manual provides that a Mayday message could be sent at this point, the choice of message being a decision for the MDO. This apparent difference is discussed further in Section 3.3.1 below, and Section 4.

tasking message with the operator (para 5.8.2(g)). In this incident, the initial tasking by the SARMC appears to have been short - search for the source of the distress signal, with a request that he be contacted before the helicopter took off. Mr Gale said in interview that he was tasked for a search, but was asked to call the SARMC when airborne.

The second area is related to the first, and involves requirements to begin overall search planning. Here, the Reviewer notes that there was no overall search plan considered or prepared for the Oamaru incident, no alerting or involvement on this matter of the ADO (as provided for in paras 5.8.1 and 5.8.2), and a limited involvement of the MDO later in the day. Contributing factors to this situation were the lack of communication from the helicopter, and the SARMC's overall workload. The result was that a number of local decisions were taken to bring in another helicopter and to send out boats, without the involvement of the SARMC.¹³ As events transpired, a major search was not required, but had it been, planning would have started late.

Activation of the NRCC

The Reviewer does not have sufficient reason to conclude that the SARMC should have activated the NRCC on 11 May and, if so, when this should have been done. Activation of the NRCC is a discretionary matter for the SARMC. Rather the Reviewer's opinion is that, consistent with para 5.5.1 (c) (iii), the Distress Phase Checklist, and sub-section 5.6, alerts of NRCC members (and particularly the MDO and the Police) should have been made early in the response. The lack of action in this respect by the SARMC resulted in him bearing all of the heavy workload.

The Reviewer notes that such an outcome is one of the risks of the SARMC concept, and the issue is discussed below in 3.2.2 and then further in Sections 4 and 5.

Other Areas of Inconsistency

After the main SAR response, there were three other instances of inconsistency with the SAROPs.

Neither of the duty Public Relations Officers (PRO) were contacted, instead the SARMC left a message with another CAA media relations employee, which did not elicit a response. Given this lack of response, and that the PROs were not involved, the SARMC should have alerted the Manager of the NRCC, who would have been able to provide advice. The lack of PRO assistance, and the resulting non-performance of the Media Liaison role in the incident (for example as provided for in para 5.6.24 of the SAROPs) should also have been taken up in the Debrief Report. In effect, the media liaison role on 11 May was taken on by the SARMC himself, the Director of Maritime Safety, and local Oamaru Police.

The suspension process was not in accord with the SAROPs. Although there was telephone discussion between the SARMC and the Director of Maritime Safety, the

¹³ The only contact the SARMC had with the Police was at 1328 when Oamaru Police rang and received some details on the initial SAR response and rescue.

Reviewer has seen no evidence of the detailed steps in paras 5.6.23 to 5.6.26 (and Appendix 17) being followed. These steps require a comprehensive review of the operation by the SARMC, advice to the NRCC Manager and approval of the Suspending Authority, and the recording of a media bulletin. Again involvement of the Manager NRCC could have assisted the SARMC in this regard.

Finally, there is no evidence that the form at Appendix 22 of the SAROPs, relating to transfer of coordination responsibility of a Class III incident to the Police, was completed. This procedure is required by para 5.6.14 of the SAROPs.

Summary

The SARMC handled the early parts of the incident effectively and in accordance with current SAR arrangements and procedures, having a fix on the Oamaru incident and the nearby Wanaka incident within around 30 minutes of the emergency beacons being activated. He responded to the Wanaka incident first. Here, the SARMC had no obvious alternative but to task a sub-optimal SAR resource, which created heavy cellphone traffic and placed real limits on his capacity to handle both incidents. The SARMC tasked a well-equipped SAR helicopter to respond to the Oamaru beacon, which led to the rescue of two survivors, however lack of communication from the helicopter became a concern for him as the day went on.

The SARMC's heavy workload might have been relieved if he had followed the SAROPs and, between 1050 and 1130, contacted the two other key members of the NRCC for these incidents – the MDO and the Police. Such contact could have enabled local SAR resources to be put on early alert, and marine distress alerts put out in the Oamaru area. A base could have been provided for more comprehensive search planning and coordination.

There were also further failures to follow arrangements and procedures as the afternoon developed, in relation to not contacting the duty Public Relations Officers, the process of suspension not being consistent with the SAROPs, and the transfer of coordination to Police again not being consistent with the SAROPs. For at least the first two matters, calling the Manager of the NRCC would have assisted the SARMC.

The conclusions of the Reviewer, in relation to whether the current SAR arrangements and procedures were followed, are generally consistent with the conclusions reached on the response to the incident by the Manager of the NRCC, in the Management Review Report dated 17 June 2003.¹⁴

3.2.2 The SARMC Concept

Conscious that the preamble to the Terms of Reference indicates that the purpose of the Review is not to allocate fault (if any), the Reviewer considers it important to place the preceding analysis of the SARMC's actions on 11 May in a broader context. On the one hand, it is the opinion of the Reviewer that the SARMC did not adhere to important elements of the SAROPs arrangements and procedures, and should have acted differently in relation to notification and coordination in particular.

¹⁴ Elements of this Report have since been followed up in meetings of the SARMCs.

On the other hand, it must be recognised that the SARMC can only be expected to do his best in the framework provided to him. On 11 May, the SARMC handled the response to the incident from his home in a period of extremely high workload, with two nearby alerts needing to be assessed at the same time.¹⁵

- The nature of the other incident at Wanaka, and the equipment available locally to respond to it, created a high level of cellphone activity between the SARMC and the search unit.
- The SARMC was correct in giving attention to the Wanaka incident, which could have been serious.
- The overall workload, especially in the critical 1100-1300 period, limited the capacity of the SARMC to take tactical decisions in managing the two incidents, as is evidenced in statements to the Reviewer.

This workload can be put into broad perspective by comparing the NRCC's SARMC approach with a rescue centre that operates on a daily, 24-hour basis. From discussion with Australian Search and Rescue, AusSAR, the Reviewer understands that, in circumstances involving two simultaneous incidents, at least three and possibly four officers would be working on the response to the incidents.

The assessment of SAR response in an incident such as Oamaru therefore goes considerably beyond the performance of any one individual, to more systemic consideration of the SARMC concept per se, operating as it does as New Zealand's front-line Class III search and rescue capability for around three-quarters of each week. Over these hours, the SARMC is effectively the NRCC. In this system, the SARMC is always at risk of having to take on, or happening to take on, too great a level of responsibility and workload.

To give an indication of the workload faced by the SARMC on 11 May, the following table shows the SARMC's cellphone call data over the period 1020 to 1400, for both the Oamaru and Wanaka incidents. The time between phone calls shows the extent of the "break" the SARMC had before the next call.

As well as handling this volume of telephone traffic, at several points over this period the SARMC also needed to plot positions and consult databases, maps and other documents, as well as update his computer log (the SAR occurrence report). At times, and particularly the critical hour between 1100 and 1200, the SARMC's workload can only be described as excessive.

SARMC Workload: 11 May 2003

Time	From\To	Event
1021-1022:26	ATC Christchurch \NRCC	Christchurch ATC advise NRCC of beacon reports from aircraft
1:26		

¹⁵ It should also be noted that, later in the day when media and suspension issues were requiring attention, the SARMC became involved in responding to another beacon activation incident.

1024-1024:39	NRCC\ ATC Christchurch	Request low level aircraft listen out – nil aircraft
2:21		
1027-1027:22	ATC Christchurch\ NRCC	Aircraft reports of ELT activation
2:38		
1030-1030:34	ATC Christchurch\ NRCC	Aircraft reports of ELT activation
0:26		
1031-1031:45	NRCC\SCAC Timaru airport	Request aircraft listen out Timaru airport
5:15		
1037-1037:49	SCAC\NRCC	SCAC advise nil beacon heard Timaru airport. NRCC requested airborne aircraft also be contacted
5:11		
1043-1044:31	NRCC\ AUMCC	Discussion with AUMCC on beacon detections
0:29		
1045-1045:53	NRCC\ATC Christchurch	Request any other aircraft reports
0:07		
1046-1046:08	ATC Christchurch\ NRCC	ATC advise aircraft hearing beacon 50 NM north of Invercargill
0:52		
1047-1048:08	ATC Christchurch\ NRCC	ATC Christchurch contacts SARMC re 2 initial satellite alerts
1.08		
1048-1049:17	ATC Christchurch\ NRCC	Contact with SARMC
12.43		
1102-1104:29	ATC Christchurch\ NRCC	Contact with SARMC
4:31		
1109-1109:26	NRCC\Aspiring	Initial call to Aspiring Helicopters
0:34		
1110-1110:56	NRCC\Aspiring	Initial call to Aspiring Helicopters
0:04		
1111-1114:53	NRCC\Aspiring	Aspiring Helicopters - nil DF – but tasked to use vehicle to do land DF
1:07		
1116-1118:20	NRCC\ATC Christchurch	Discussion on next AUMCC alert messages
0:40		
1119-1122:15	NRCC\Gale	Taieri based helicopter <i>Air 1</i> tasked ETD 15 mins
2:45		
1125-1125:12	ATC Christchurch\ NRCC	2 resolved AUMCC position alerts
1:48		
1127-1130:22	Aspiring \NRCC	Telephone call Aspiring Helicopters
0:38		
1131-1131:38	NRCC\ Aspiring	Telephone call Aspiring Helicopters
2:22		
1134-1135:18	ATC Christchurch\ NRCC	Aircraft ELT reports
0.42		
1136-1139:27	Aspiring\ NRCC	Telephone call Aspiring Helicopters
5:33		
1145-1145:53	Aspiring \NRCC	Telephone call Aspiring Helicopters
6:07		

1152-1154:08	Aspiring \NRCC	Telephone call Aspiring Helicopters
6:52		
1201-1202:28	NRCC\MDO	MDO advised of two incidents active Hawea Flat\Wanaka and Oamaru. Helicopters responding
23:32		
1226-1226:12	ATC Christchurch\ NRCC	Resolved AUMCC position alerts
2:48		
1229-1231:35	Aspiring\NRCC	Telephone call Aspiring Helicopters
1:25		
1233-1234:42	Aspiring\NRCC	Telephone call Aspiring Helicopters
2.18		
1237	NRCC\ <i>Air 1</i>	Call to <i>Air 1</i> – nil contact
2.00		
1239-1240:33	Aspiring\NRCC	Telephone call Aspiring Helicopters
5:27		
1246-1247:04	Aspiring\NRCC	Telephone call Aspiring Helicopters
2:56		
1250-1250:08	NRCC\ <i>Air 1</i>	Call to <i>Air 1</i> – nil contact
0:08		
1250:08-1250:16	NRCC\ <i>Air 1</i>	Call to <i>Air 1</i> – nil contact
0:44		
1251-1252:35	NRCC\ATC Christchurch	Aircraft ELT reports
2:25		
1255-1256:04	Aspiring\NRCC	Telephone call Aspiring Helicopters
7:25		
1300-1301:35	NRCC\Dunedin ATC	Request contact with <i>Air 1</i> . ATC advise <i>Air 1</i> departed 1212
0:25		
1302-1303:12	<i>Air 1</i> \NRCC	<i>Air 1</i> in process of survivor rescue, contact NRCC at next available opportunity
0:48		
1304-1304:01	NRCC\ ATC Christchurch	Response to Pager message
0:59		
1305-1305:24	ATC Christchurch\ NRCC	Missed alert from AUMCC for Oamaru
0:00		
1305:24-1305:43	NRCC\CAA Media Manager	Left message, advising of incident, and seeking public relations support
1:17		
1307-1307:09	NRCC\ ATC Christchurch	Response to pager message
1:51		
1309-1309:48	MDO\NRCC	MDO advises NRCC\SARMC of sinking of vessel <i>Time Out</i>
0:12		
1310-1312:36	Aspiring\NRCC	Telephone call Aspiring Helicopters – located ELT in helicopter
1:24		
1314-1315:22	NRCC\ATC Christchurch	SARMC contact with ATC
3:38		
1319-1321:00	NRCC\MDO	Sitrep from SARMC, Wanaka beacon inadvertent distress beacon activation by helicopter involved in herd control. Oamaru confirmed 2 rescued and 1 deceased
3:00		

1324-1315:02	NRCC\MDO	SARMC confirmed Oamaru incident Class III, agreed more airborne assistance required as nil response from vessels to assist
12:58		
1328-1331:53	Oamaru Police\NRCC	Discussion on Police actions
0:07		
1332-1332:00	MDO\NRCC	Attempt to contact
1:00		
1333-1335:34	MDO\NRCC	MDO confirms position of boat sinking. SARMC discusses lack of communications with <i>Air 1</i>
0:26		
1336-1336:24	NRCC\Dunedin ATC	Request contact <i>Air 1</i>
4:36		
1341-1341:43	NRCC\Dunedin ATC	Request contact <i>Air 1</i>
1:17		
1343-1343:20	NRCC\ <i>Air 1</i>	Attempt contact
4:40		
1358-1403:52	<i>Air 1</i> \NRCC	Discussions on tasking. NRCC advised second helicopter was assisting in search

Over the time span of three hours and 43 minutes covered by this schedule, the SARMC was on a cellphone for over one hour and 11 minutes, initiating or receiving some 52 phone calls. There was typically a very short period between calls to give time for tactical consideration of the two SAR responses – only the period 1202 to 1226 gave time for this, and by then the essential path of the two responses had been set.

It is hard to see how such a level of workload, and resulting pressure on the SARMC, assists in achieving a high level of SAR performance under current arrangements and procedures. In the opinion of the Reviewer, a number of changes should be considered to give more support to individual SARMCs in their work, and to avoid them being placed in positions where their operational efficiency is compromised. Such support measures, and other more fundamental changes such as longer hours of operation of the NRCC, are discussed in Sections 4 and 5.

3.3 RESPONSE OF OTHER NRCC ORGANISATIONS

3.3.1 Maritime Safety Authority

The Maritime Safety Authority (MSA) provides the Marine Duty Officer (MDO) in the NRCC arrangements. The MDOs, all Master Mariners, are on duty on a roster arrangement. The following comments have been assisted by interviews with the duty MDO on 11 May, Mr Bruce Wilkinson, his log for 11 May and other documents provided by him, including relevant sections of the MDO Manual. The Reviewer was also given a copy of the internal review of the MSA's involvement in the incident.

Involvement in the SAR Response

The MDO first knew about the Oamaru and Wanaka incidents when he was contacted by the SARMC at 1201 on 11 May (the MDO's log indicates this call at 1202). Their discussion was not conclusive. The SARMC advised that he had tasked two

helicopters to respond to what he considered to be two marine emergency beacons. The SARMC expected a helicopter to be over the coordinates of the Oamaru beacon signal in the very near future. Given the imminent advice expected from the helicopter, the MDO did not issue any alerts following this conversation.

The next advice the MDO received about the Oamaru incident was at 1303 when the Maritime Operations Centre (MOC) advised that a vessel had sunk south of Oamaru with two persons missing. The details had come from *Air I*, which had issued a VHF channel 16 broadcast to vessels in the area to assist. The MDO instructed the MOC to broadcast a Mayday relay. The first relay was sent out at 1305.

At 1310, the MDO advised the SARMC that the vessel *Time Out* had sunk, two survivors had been rescued and a body recovered, and that two men were still missing.

At 1312 the MDO further queried the MOC on details of the incident. There followed a series of situation reports between the MDO, the SARMC, the Director of Maritime Safety and the MOC. (All in all, the MDO was involved in some 30 phone calls on the afternoon of 11 May in regard to the Oamaru incident.)

The MDO next made initial estimates of likely survival time in the water. At 1430, he sought details of water temperature in the Oamaru area from the MOC, to assist more precise estimation of time of survival. At 1547 the MOC advised the MDO that the sea temperature was around 11 degrees Celsius, and the MDO then estimated a likely range of survival of 3.5 – 4.5 hours for a person in the water.

At 1600 the MDO discussed the situation with the SARMC. It was agreed that the missing persons had been in the water well past survival time. The SARMC advised he was closing the incident and would turn the search over to the Police to manage as a Class II incident. At 1602, the MDO instructed the MOC to cancel the Mayday relay broadcast to the Oamaru area and the broadcast ceased at 1608. At 1610 the MDO rang the SARMC to discuss the closure of the incident and advised the SARMC to contact the Director of Maritime Safety regarding suspension.

At 1630, after preliminary discussion at 1618, the SARMC advised the Director of Maritime Safety that the Class III incident had been suspended.

Assessment against Arrangements and Procedures

The MSA Marine Duty Officer Manual provides that " a major incident is defined as one where a Class III operation is or maybe required" (Section 1). The Manual is structured both in terms of the MDO initiating action with the NRCC (Section 1), and where the SARMC is the initiating officer, as for the Oamaru incident (Section 3 - 121.5/243 MHz EPIRB/ELT Alert).

In relation to an EPIRB alert at sea, Section 3 of the MDO Manual provides that the SARMC will only advise the MDO of the ELT if either image of the signal is within the New Zealand rescue area, and there is any chance that it could be over the sea. Unless there is other information to resolve the mirror image, the next pass of the satellite is to be awaited. The Manual then goes to state that "if SARMC advises next

pass indicates position in New Zealand SRR: (a) send standard broadcast, (b) request MOC advise local Police, and establish whether Class II has begun due to other distress signals and (c) request SARMC investigate whether transiting aircraft can hear beacon".¹⁶

Otherwise the MDO is to commence a Class III incident response, by moving to the major incident arrangements in Section 1.¹⁷ This involves the MDO contacting the MOC, briefing them as necessary and requesting the issue of a Mayday broadcast (Section 1 of Manual, Major incident).

In the case of the Oamaru incident, the SARMC was in a position to inform the MDO of an emergency beacon position at sea from around 1050, and had a resolved alert at 1125. In this period, contact with the MDO should have triggered a response under the major incident provisions of Section 1 of the MDO Manual. Once the position of an emergency beacon is resolved, a Mayday relay should go out.

When the SARMC did contact the MDO at 1201/02, no steps were taken by the MDO to request the MOC to issue an "all ships" advisory alert or a Mayday broadcast, or advise the local Police. The MDO's thinking at this time was influenced by the expected imminent arrival of the helicopter *Air 1* at the site of the beacon signal, and resulting advice from the pilot about the situation there. The MDO does not recall that he was advised that it was a resolved alert.

The MDO indicated to the Reviewer that he was somewhat confused about the advice from the SARMC that there were "two signals" - for example, the A and B positions of the one satellite pass, or signals in two separate incidents? However the MDO knew that two helicopters had been dispatched. The status of the active beacons was not clarified by the MDO in discussion with the SARMC. From the information available to the MDO at 1201/2, the Reviewer concludes that alerts should have been triggered at this point under either Section 1 or 3 of the MDO Manual.¹⁸

The MDO became increasingly concerned about the lack of further advice from the SARMC, but did not call him back for a situation report. In the end, the MDO learned of the accident, rescue and subsequent search from the MOC at 1303 and then conveyed this information to the SARMC at 1310.

During the 1303 call from the MOC, the MDO triggered the responses required by the MDO Manual. A Mayday relay first went out from the MOC at 1305.

The Reviewer concludes that the procedures in the MDO Manual were not immediately followed as a consequence of the 1201/02 discussion between the SARMC and the MDO. The lack of a conclusive outcome in terms of alerts from this discussion was influenced by incorrect perceptions about the SAR helicopter's

¹⁶ The Reviewer understands that the MDO Manual has been changed since 11 May, and Section 3 now provides for the SARMC and MDO to consider options for action between an initial alert and the resolution of an alert.

¹⁷ The Reviewer has a difficulty in understanding the wording of step 4 in Section 3 of the Manual, about what steps the MDO should take at this point.

¹⁸ There is also potential for confusion between the action prescribed in the SAROPs (para 5.5.1(c)(ix)) and the MDO Manual (Sections 1 and 3).

position. Further the situation was not then followed up by either the MDO or the SARMC, and resolution of the uncertainty came through the MOC hearing the mayday call from *Air 1*.

Finally, as noted in Section 3.2.1 above, the suspension process was not handled in accordance with the SAROPs. The Director of Maritime Safety was not provided with the analysis and documentation required under paragraphs 5.6.23 and 5.6.24 of the SAROPs. This lack of process was raised by the Director with the SARMC. However, in the circumstances, the Reviewer considers the Director's decision to suspend as fully justified. It was also not the practice within the SAROPs for the Director to take on the task of handling media inquiries for a Class III incident. However given the lack of media liaison resources at the NRCC/SARMC end, and the significant build-up of media inquiries to the MSA, there was no alternative. (It is noted that MSA procedures do not provide for MDOs to handle direct media inquiries.)

The conclusions of the MSA internal review are similar in many respects to the Reviewer's findings. The review queried the MDO's judgement in not initiating a Mayday relay broadcast after the initial call from the SARMC. It noted that the MDO procedures covering "121" distress beacon activations were unclear, and recommended amendment. It recommended workshopping of a communications checklist for MDOs in obtaining information from SARMCs, and of a checklist of factors for MDOs to consider when making a judgement on whether or not to issue a radio message. The internal review also addressed the problems in media liaison and suspension processes.

3.3.2 New Zealand Police

This sub-section has been informed by discussions in Wellington with the national Police Coordinator of Search and Rescue, Senior Sergeant Gerard Prins, in Dunedin with Inspector Terry Richardson and Sergeant Brian Benn and in Oamaru with Sergeant Lane Todd and Constable Lynda Eaton. A range of documents was also provided to the Reviewer, including Call Centre logs, reports from the officers involved, and the internal review of the involvement in the incident of the Southern Communications Centre (SCC) at Christchurch. The Marine SAR Advisor to the Police in North Otago, Mr John McLellan, was interviewed at Moeraki.

The Nature of Police Involvement

The New Zealand Police did not have a significant role in the early stages of this incident, as the SARMC did not contact the SCC or the Police Liaison Officer (PLO). Formal Police involvement came after the MOC alerted the SCC at 1300 (this time is recorded as 1258 by the SCC), following the broadcast from the helicopter, *Air 1*, advising of the rescue. Police were sent to Moeraki and assisted with the search in the afternoon. They also advised next of kin, interviewed the survivors and participated in some media interviews.

The Marine SAR Advisor based in Moeraki, Mr John McLellan, advised in interview that he had broadcast alert signals on the local marine radio network from approximately 1300. He readied the helipad area for the arrival of *Air 1* at 1310, and assisted with the unloading of the recovered body. Mr McLellan also arranged that

two boats go out to search the accident area later in the afternoon of 11 May, and facilitated the helicopter traffic at the Moeraki helipad.

The Police took over coordinating responsibility for the search at approximately 1630, after the Director of Maritime Safety agreed to suspension of the Class III incident. Over following days, police organised search by boats and fixed wing aircraft, and also undertook a coastline search. On some of these days, weather conditions were poor and hampered search activities.

The search effort was later suspended after the Police had continued these local searches for some days, with no trace of the two missing men being found.

Assessment against Current Arrangements and Procedures

The Reviewer does not consider that the actions of local Police require detailed inquiry. There is no reason to suggest that the action taken on the afternoon of 11 May and subsequently was in any way deficient against current arrangements and procedures. The Police were effectively in a "catch-up" situation, and made local decisions as they saw appropriate in the circumstances, not having any advice from the SARMC as to broader search planning or arrangements (and also noting that the documentation in Appendix 22 of the SAROPs was not provided later). Further, at the time that the local Police came into the incident, there was no real hope that the two missing men were still alive – given the sea conditions, the near expiry of estimated water survival time, and advice from the survivors that their two missing colleagues had "gone".

However, there was some Police involvement, prior to the notification of the Southern Communications Centre by the MOC at 1300, which requires mention.¹⁹ The "swimmer" on *Air I*, Sergeant Brian Benn, had to be located on the morning of 11 May. It is emphasised that at this point Sergeant Benn was not being contacted as a policeman, but as a member of the volunteer Otago Swiftwater Rescue team.

The St John Ambulance Call Centre in Dunedin was contacted by the paramedic with Helicopters Otago, and asked to locate Sergeant Benn. The Call Centre contacted the Police SCC at Christchurch at 1129 to inquire whether, if the Centre used the Sergeant's Police pager, this would cause problems in the Police system. It was then decided between the two operators that the SCC would call Sergeant Benn at home, rather than use his Police pager. Further, the message given was that the helicopter was on "standby" rather than being readied for urgent departure.

Ultimately, Sergeant Benn's wife received permission to drive the Police SAR vehicle to where he was refereeing his son's soccer match and at 1050 Sergeant Benn proceeded to Taieri airport, making no haste given the "standby" advice and arriving over 30 minutes after the initial request to page him.²⁰

¹⁹ Local Police first heard of the incident through St John's Ambulance at about 1232 advising that a helicopter had been tasked. The local Police were also informed by Moeraki Radio of the alerts from the helicopter at around 1300.

²⁰ The actual net time delay caused by this contact problem is difficult to estimate. Sergeant Benn pointed out to the Reviewer that the soccer field was closer to the airport, his wife brought to him the Police vehicle that contained his wet suit and other equipment, and then took care of their son. Direct

This discussion does not intend to imply that Police arrangements and procedures were not applied, as Sergeant Benn was being contacted as a volunteer. However, the need to ensure that local contact arrangements are clear and direct is important, and is addressed in the following Sections.

The other issue relating to Police involvement concerns the SCC not linking the request to contact Sergeant Benn with a SAR situation unfolding in the Dunedin area, and so seek further information. This may have led to earlier mobilisation of local SAR resources and a marine alert broadcast from Mr McLellan. The internal review of the SCC's involvement in the incident did not find any major procedural problems at this stage of the morning – given the nature of the request made by the Ambulance Call Centre - but did find some inconsistencies in the recording of messages and then later some shortcomings in passing of information to the Oamaru Police. The internal review also sought further consideration of current operating procedures between the Police and the NRCC.

In the Reviewer's opinion, the Police should not have to resort to indirect methods to learn of distress beacon incidents. A call from the SARMC to the SCC between 1050-1130 (or even later) would have been expected to initiate Police SAR responses, involving the use of the Police's Beacon Protocol. (The MDO Manual also provides a backup procedure for Police contact, with the MOC to contact Police after advice from the MDO. Earlier involvement of the MDO, or action by him when contacted by the SARMC, could have triggered MOC action in this respect.)

Following concern about linkages with the NRCC, and a series of workshops in 2001 and 2002, the Police developed a standard operating procedure for handling distress beacon alert advices from the NRCC. This Beacon Protocol provides a comprehensive list of questions of the NRCC, to ensure all relevant information is received, and a structured contact process down to the local level. The lack of contact from the SARMC on 11 May meant that this procedure did not go into action. The review and revision of SAR procedures sought in Section 5 should include reinforcement of not only the need for timely contact with the Police, but the awareness of Police procedures.

3.4 OVERALL ASSESSMENT

Assessing the overall conformance of the search and rescue mission off Oamaru on 11 May against SAR arrangements and procedures is a complex exercise. Because of the lack of procedural clarity in some areas, the fluid situation that unfolded on that day, and the necessary application of discretion, a degree of individual judgement on the system's SAR performance is inevitable – as is some use of hindsight.

On the one hand, positive outcomes can be seen in the operation of the SAR system to achieve

paging via his Police pager would probably have required him to return home, in the opposite direction to the airport, to deliver his son and pick up the Police vehicle.

- Appropriate use of satellite positioning and checks with aircraft to establish the location of the accident
- The engagement of a fully equipped helicopter that was not only able to use its direction-finding equipment to locate the distress beacon signal, but to carry out a rescue from the sea
- The resulting rescue of two survivors, and their prompt delivery to medical attention
- The recovery of the body of one of the three persons lost in the accident

Yet on the other hand, there were shortcomings in significant elements of the SAR response, where current arrangements and procedures did not work as well as they might

- An extremely heavy (and at times excessive) workload was faced by the SARMC in seeking to handle two complex incidents at once, without having alerted or engaged any support assistance
- There was no structured process of consideration on the part of the SARMC in choosing the priority to addressing the two incidents, and the means of managing them (noting an absence of guidance to assist in responding to incidents where survival times are critical)
- There was a failure to notify the Police at all during an incident which was near to shore for local SAR resources, and for which alerts could have been communicated over local radio networks
- The MDO was not contacted until well into the SAR response, despite a clear maritime incident being underway, and then at a time when there was uncertainty over the status of the SAR effort due to lack of communication with the SAR helicopter
- There was not an overall search and rescue plan prepared for the incident, nor resources readied to prepare a more detailed plan if needed, and local SAR decisions were necessarily taken without overall coordination with the SARMC

In this process, a number of major procedures in Section 5 of the SAROPs were not followed. The MDO was not notified early in the response when a distress beacon (LUT) alert was received from a position at sea. The Distress Phase Checklist, which prompts SARMC consideration of notification and coordination tasks, was not used. The lack of contact with the Police was inconsistent with the broad guidance in the SAROPs, and the recent development of arrangements and procedures to achieve early notification by the NRCC of the Police. There were also subsequent shortcomings against the SAROPs in following arrangements and procedures for the media response, and suspension and transfer processes.

A number of other events also affected the SAR response. While each event can be seen as self-contained, there was a compounding of overall uncertainty or delay in the search mission, and subsequent rescue, through

- The inherent delay through Christchurch AFTN having to record, and then fax to the SARMC, satellite positioning coordinates received from the AUMCC in Canberra
- Communication problems associated with the changeover in cellphone numbers from the 025 to 027 networks
- The delay in contacting the fourth, critical member of the helicopter crew, the "swimmer" who was to carry out the actual water rescue
- Advice to this crew member that the helicopter was in "standby" mode, rather than actually being readied for immediate departure
- The lack of communication from the SAR helicopter to the SARMC

In assessing the time sequence of, and response to, the Oamaru SAR incident, the impact of the Wanaka incident should not be downplayed. The SARMC had to give this incident his attention, having no reason to expect it to be anything other than an emergency situation.

The inadvertent triggering of the emergency beacon in the mustering helicopter in the Wanaka area had the ultimate consequence of creating competition for the SARMC's time, through having to deal with two potentially serious incidents together. The unavailability of a local helicopter with direction-finding equipment resulted in a less than optimal search being undertaken, and a high level of cellphone contact with the SARMC as various options were pursued. (This is not to denigrate the efforts of the SARMC in his response or the pilot involved, who showed great persistence and initiative in ultimately finding the source of the signal.)

This analysis intends in no way to imply that the overall SAR process off Oamaru on 11 May 2003 might have had a different result in terms of loss of life. Any consideration of this question is outside the Reviewer's Terms of Reference.

However what the analysis does indicate is that current arrangements and procedures need either immediate change or urgent reassessment in a number of areas, if a more transparent and effective search and rescue system is to be achieved for Class III incidents. Section 4 considers the appropriateness of current arrangements and procedures for incidents of the nature of Oamaru, and highlights areas for change and review in Section 5.

4. THE APPROPRIATENESS OF CURRENT ARRANGEMENTS AND PROCEDURES

Term of Reference #3 asks that the Reviewer "*ascertain whether the arrangements and procedures are appropriate for an incident of this nature*".

The Reviewer has taken the incident type to be one where an alert is triggered by, or may have been triggered by, an emergency distress beacon.²¹ While the following discussion is focussed on responding to a beacon activation incident, some of the issues raised, and conclusions reached, have broader implications for SAR activity in New Zealand.

4.1 THE EFFECTIVENESS OF THE CURRENT APPROACH

As the preceding Section 3 indicates, there is a considerable volume of documentation and operating arrangements to underpin the response to Class III incidents. Application of all the arrangements and procedures would likely have avoided several of the problems that ensued on 11 May. However this full application did not happen.

Further, it is not apparent that the arrangements and procedures are as comprehensive and as clear as they should be in covering incidents caused by distress beacon activation, and are open to interpretation. Finally, although the SAROPs is a document common to all NRCC member organisations, there are other organisation-specific documents, approaches and expectations which do not provide as firm and consistent a base as is desirable for integrated SAR responses.

The following analysis seeks to provide a systemic overview of the appropriateness of the current approach to handling those Class III incidents that result from a distress beacon being activated, in the light of the experience of the Oamaru incident (and also the Wanaka incident). The analysis is applied in two parts – the first covers the content of the key operational documents, the second the broader support systems that underpin SAR responses.

4.1.1 The Major Operational Documents

No document is going to cover off every eventuality faced by those responding to a SAR alert and response. Situations can differ significantly as to location, scale, weather, and availability of SAR resources. However the official SAR operational documents for the NRCC and member organisations must be expected to provide unambiguous direction on critical steps that must be taken, and clear guidance where discretion must be applied in taking decisions. In turn, this documentation provides a firm basis for training programs and exercises to reinforce the approach.

²¹ The term emergency distress beacon is used in a wide sense, to cover terms such as Emergency Locator Transmitter (ELT) or Emergency Position Indicating Radio Beacon (EPIRB), and to include either "121" or "406" type beacons.

The Reviewer considers that the current documentation fails to meet this benchmark in several key areas.

The Search and Rescue Operations Plan (SAROPs)

In the case of responses to that category of Class III incidents coming from distress beacon activation, the current SAROPs is deficient in several key areas of Section 5.

Section 5 is an amalgam of various SAR situations and related procedures. There is little specific reference to responses to distress beacon activations, with the result that an undue level of interpretation and discretion is required. In this situation, it is perhaps not surprising that the Reviewer has identified some variation in the approach by SARMCs in responding to such incidents.

Distress beacon activations are mentioned in para 5.2.3(a) of the SAROPs in relation to aircraft, and the process of receiving advice of beacon alerts is described in para 5.4.1(a). Para 5.5.1(c) then outlines actions to be taken when advice of a beacon alert is received. There are otherwise no other specific references.²²

Although it is the Reviewer's opinion that 5.6 applies generally to handling emergency beacon activations, this sub-section could be much clearer in relation to this significant and pressing area of NRCC activity.

The SAROPs does not emphasise enough the critical importance of early contact by the SARMC with other NRCC member organisations in relation to distress beacon alerts, for example in stressing the role of the Police, and their related Beacon Protocol. The SAROPs is also out-of-date in relation to the role of the three Police Communications Centres, as normally the first point of contact for SARMCs.

There is the related matter of various interpretations developing about when the Police should be contacted about a sea incident near to shore, when there is no such guidance in the SAROPs. It is undesirable to have a situation where SARMCs have differing interpretations on this point, which have been built up over a period of years, and which can lead to inconsistency in contact procedures between incidents.

There are three other, more general, areas of Section 5 where the current SAROPs are not as helpful as they could be in responding to beacon activations, or other SAR incidents.

First, the SAROPs do not provide any guidance on decision-making in cases where two or more incidents (distress beacon or other alerts) occur at the same, or similar, time. Facing such a situation places considerable pressure on the SARMC and it is desirable that a considered process of thought is followed to underpin decisions on priorities and how the incidents are to be managed. Early contact with other NRCC members, as discussed above, would help these decision-making processes, as would possibly involving another SARMC.

²² Para 5.6.13(a) refers to Personal Locator Beacon situations, but these are different to the "121" or "406" distress beacons. Further these are Class II incidents for which Police coordination is necessary with the SARMC.

Second, neither do the SAROPs provide any detail or emphasis on the urgency of responding to incidents where people are likely to be in the water, with limited survival time. There is only the general highlighting of the need to get to survivors as soon as possible in para 5.1. The significant issue of what situation survivors might be in requires consideration in the early stages of responding to an incident – for example, it can affect the decision to task particular SAR resources.²³

Third, there is only one reference to the tasking of SAR resources in Section 5, and that is in sub-section 5.8 that refers mainly to actions by the Air Directing Officer (ADO). There is limited advice to the SARMC in para 5.8.2(g) as to how to ensure that the operator of a tasked SAR resource knows their specific role, and accepts the requirement to maintain close contact with the SARMC. There is otherwise no advice on tasking SAR resources, the use of relevant databases and the selection of particular types of aircraft, marine vessels or land resources.

MDO Manual

The MDO manual is difficult to interpret in relation to the SAROPs. For example, Sections 1-3 imply a more urgent response than does para 5.5.1(c) (ix) of the SAROPs, viz "if considered necessary, MDO to issue CQ message". As well as clarifying and strengthening the MDO Manual, it is important to also achieve consistency between the Manual and the SAROPs as discussed in Section 5.

Police Procedures

Police procedures were not a key issue in this incident, as the Police were not contacted directly until after the initial location finding, resource tasking, and rescue had taken place. Changes to the SAROPs to emphasise the importance of early Police contact have been discussed above.

In this context, there should be no room for confusion, or for allowing different "rules of thumb" to develop, about when the Police should, or should not be, contacted about a near to shore incident, or any other incident. Rather, the presumption should be that the Police will be contacted, and then will make a decision as to their capacity to respond in that particular area from the viewpoint of both Police resources and related volunteer groups. Besides, it is anyway desirable that local Police are aware that local resources are being used by the NRCC – eg, to help locate resources for their own response, and to know that some resources are unavailable for other tasks (such as air ambulance work) for some time.

4.1.2 The Broader SAR System

As well as identifying deficiencies in key operational documents, there are several points where the experience of the Oamaru incident prompts consideration of the current efficacy of elements of the broader SAR system.

²³ This relates to another concern, that the current SAROPs has a strong aviation bent, and could be strengthened in relation to marine incidents – and incidents on land from, say, a hiking incident.

The Current NRCC/SARMC Concept

The first of these points relates to the current process for responding to Class III SAR incidents. At the heart of many of the problems with applying arrangements and procedures in the Oamaru incident is the nature of the SARMC concept, as the agent of the NRCC.

As Section 3.2 has indicated, the SARMC can be placed in situations of enormous pressure when faced with responding to a complex incident or incidents from his home. The path of the incident(s) can be unpredictable, and it can be no simple matter to decide whether and/or when to activate the NRCC (bearing in mind that crucial time might be lost as members travel to the NRCC and then set up operations). The SARMC can be in danger of shouldering a disproportionately high level of responsibility, for at least significant parts of the incident response. This in turn translates into a high degree of risk for the efficient operation of the entire Class III SAR system.

This was instanced in the Oamaru and Wanaka incidents where, in the opinion of the Reviewer, the workload of the SARMC was excessive for one person during at least parts of the late morning, if not the early afternoon. This workload hampered his ability to address the imbalance of communication with the SAR resources tasked for the respective incidents, and prevented more comprehensive search planning.

The Nature of Communication Channels

A common problem running through the events of 11 May is a weakness in communications processes - procedural, attitudinal and technical. This needs to be considered from a systemic perspective, as it could pose major difficulties in future SAR responses if the lessons from 11 May are not heeded.

In a procedural sense, the issue of late contact with the MDO by the SARMC and the nil contact with the Police have been well canvassed above. The issue of the poor communication between the SARMC and the tasked helicopter has also been recognised, and the future avoidance of such situations should be addressed both through improved tasking procedures in the SAROPs (discussed above), and the development of closer working relationships with operators of SAR resources, with related database advice on communications systems used/preferred by particular operators (discussed below).

Problems of communication procedure were not confined to the NRCC. The contact process for Brian Benn in Dunedin did not go smoothly. It was not direct enough, and the terminology used about the SAR helicopter being on "standby" was totally inappropriate given the urgency of the situation. Information passed through the Southern Communications Centre to Oamaru Police was found in internal review to be not as complete as it should have been.

There were also attitudinal problems in communication processes. The relationships between key members of the NRCC must be robust, and gaps in communication followed up if expected advice is not received within reasonable periods. An example in the Oamaru incident is the lack of clarity the MDO felt after his initial discussion

with the SARMC, and then waiting to hear back from the SARMC, only to hear of the rescue through the MOC. The MDO could have rung the SARMC earlier (although he was to a degree influenced through experiencing long periods of waiting for SARMC calls in past incidents). Similarly, the lack of communication from the SAR helicopter might have received earlier attention from the SARMC (but with the major qualification that both the SARMC's and pilot's workloads did not assist the flow of two-way communications).

The expectation should be that, "if it is considered to be affecting your actual or potential SAR role, and you haven't heard back within an agreed or reasonable period, you should take the initiative and call". Addressing these problems is not a matter for written procedures, but rather for developing strong working relationships, to be reinforced in training exercises.

The technical problems relate to methods of communication. Apart from the issue of the changeover process from the 025 cellphone system to the 027 system, there were problems in cellphone reception when the helicopter was refuelling at Herbert. This was not serious in the overall outcome of the SAR response, but the reliance of the SARMC on cellphone communication poses a major risk in the New Zealand SAR system. There is also the matter of operators having preferred means of contact and/or communication other than cellphones, which should be recorded in NRCC documentation and followed wherever possible by SARMCs.

Relationships with Local Operators of SAR Equipment

Flowing from this discussion of communication is the matter of NRCC relationships with commercial operators of SAR resources. In the case of distress beacon activations, the immediate availability of aircraft, helicopters or fixed-wing, is critical to the search and rescue response.

There is limited information in the current database to guide SARMCs in choosing and tasking SAR resources. The details of operators with direction-finding equipment are recorded briefly at the front of the database, with more extensive details on each operator provided later in the database. A combined entry, or at least flagging of key issues in the first section with appropriate cross-referencing, may assist SARMCs – for example, in having information readily to hand on preferred communication procedures.

The Importance of Supporting Local Police and Volunteer Networks

On the basis that the comments made to the Reviewer by Police, commercial search organisations and volunteer resources involved in the Oamaru incident are representative of broader national opinion, there is a strong local preference to be at least alerted, if not called out, as soon as there is a reasonable likelihood of a SAR response being needed.²⁴

There is nothing in current SAR arrangements and procedures to emphasise this point.

²⁴ This was also a major theme in the workshops held between 2000 and 2002.

4.2 THE FINDINGS OF OTHER RECENT REVIEWS

The Reviewer has been alerted to a number of recent inquiries, reports and workshops that have traversed territory similar to the considerations that have arisen in this Review.

Coronial Inquiries

In two inquiries in recent years, Coroners have made a number of findings and recommendations in relation to SAR responsiveness. The two incidents in question involved aircraft ditching into the sea, with Mayday messages being made by the pilots, a quite different situation to the distress beacon activation in the Oamaru incident. However they are relevant in that there was a focus on the speed of the SAR response for people in the sea, and that a number of problems were identified with then current arrangements and procedures. Changes were made to those arrangements and procedures subsequent to the Coroners' reports and internal NRCC reviews.

In the case of the ditching of ZK-VAC in the Foveaux Strait in August 1998, the Coroner found that, inter alia, there were problems in communications, advice to the media and establishing an "audit trail" of communications through tapes and other means.²⁵ As a result, a number of changes were made to the SAROPs to specifically refer to aircraft crashes, and consultations were begun with national and local SAR organisations to address overall responsiveness and communications issues (leading to the series of workshops discussed below).

In the case of the ditching of ZK-DUU in Pegasus Bay in November 1999, the Coroner referred to the pressures on the SARMC handling the response by cellphone, and the need to take into account local knowledge of conditions and available SAR resources. The Coroner recommended that the NRCC and Police review search protocol to minimise any delays due to locational uncertainties, and to review responsibilities for Class III searches to strengthen "out of hours" capabilities and provide for the SARMC to delegate at least the short-term SAR response to the Police.²⁶

In a major internal review on this incident, the MSA/CAA concluded that written procedures were adequate, save for a change to the SAROPs to mention aircraft ditching and involvement of marine vessels. It found delays in both the NRCC response and the response of the helicopter operator tasked for the search. Recommendations to improve NRCC communications procedures, techniques and telephone equipment were made. The review found problems in the "audit trail" of the incident, such as the recording of times and actions.

The review also examined the relationship between the SARMC and other NRCC members, and concluded "The SARMC should make greater use of team specialists available, to spread the workload especially in the initial stages of a search, and to

²⁵ Finding of Coroner as dated 16 July 1999

²⁶ Finding of Coroner dated 16 January 2001

allow time to concentrate on clarifying the information available, so allowing him to provide initial SAR resources with the best information available."²⁷

Maritime Search and Rescue Review

A major review of maritime SAR responses reported in December 2001.²⁸ The review identified as a key priority the need for stronger strategic coordination and governance for SAR in New Zealand. A working group of officials from the Ministry of Transport, MSA, CAA, Police and Defence was convened subsequently to make recommendations on a new SAR governance structure. The working group's report led to the decision to form the New Zealand SAR Council with supporting secretariat. These review processes also resulted in the decision to make full-time the position of the Manager of the NRCC.

Linked to its findings on coordination and governance, the maritime SAR review found also that while the current system of SAR preparedness and response generally works well, the "system" was more a collection of separate arrangements that have to be coordinated between different agencies. It concluded that any changes to the "maritime" SAR framework should not proceed in isolation from land-based SAR activities, the two being inextricably linked.

The review raised the need for review of the NRCC concept, in the context of providing a significant improvement in SAR response capability. It also raised the need for improved communications processes throughout the SAR network. The focus on NRCC responsiveness in the two Coronial inquiries discussed above was examined.

The review noted the cost of running the NRCC in a 24x7 arrangement to be around \$750,000 per annum (this included the cost of both full-time SARMCs and MDOs). The collocation of the NRCC with the MOC, to form a coordination and communications centre, was seen as a cost-effective option to augment a base 24x7 staffing of SAR Coordinators.

No decisions have been taken on these broader policy and institutional recommendations, and the Reviewer assumes they are still open to consideration and decision.²⁹

Workshops

The third strand in recent SAR review processes was the series of four workshops held between 2000 and 2002, involving the NRCC, its member organisations, the Police and volunteer SAR organisations. These workshops focussed on improving coordination of SAR responses, particularly between the NRCC and related national agencies and local Police and volunteer SAR resources. The catalyst for the

²⁷ Internal Review of Search and Rescue Operation for ZK-DUU, Civil Aviation Authority, April 2000, page 16.

²⁸ Maritime Search and Rescue Review Report, December 2001

²⁹ It is important to note that at no time during the course of this Review were any direct concerns raised about the provision of funding for particular SAR responses, in terms of helicopter hire, search boat costs and so on. Rather the resourcing discussion focussed on the delivery of SAR services.

workshops was the Coroner's report on the aircraft ditching in the Foveaux Strait, and subsequent SAR response, and the workshops were given further stimulus by the Coroner's report and internal CAA review on the aircraft ditching in Pegasus Bay.

At the April 2002 workshop, Police representatives made presentations in relation to the need for early notification by the NRCC, to ensure that local knowledge was applied to any SAR response and to maximise the time available to mobilise local volunteer resources. Police also wished to know that local commercial resources had been tasked, both for information and to ascertain whether Police or volunteer agency members could assist in the SAR mission.

The summary of the meeting noted that, inter alia, "SARMCs should establish contact with the appropriate Police Communications Centre as soon as practicable and state what action, if any, is required from the Police." Further, "It was agreed that SARMCs should err on the side of possibly over-reacting (to a potential terrestrial SAR operation) and possibly need to cancel the action later rather than be deterred by the possible 'cry wolf syndrome'. At the end of the day, however, it will remain a matter for the individual SARMC's judgement".³⁰ The NRCC also agreed to look closely at aligning Class III procedures with the New Zealand Coordinated Incident Management System (CIMS).

4.3 A WAY AHEAD

In itself, the experience of the Oamaru incident should inform some urgent changes to the SAROPs in relation to incidents involving distress beacon activation. Broader steps to support the current SAR system are also justified on the Oamaru (and Wanaka) experience. It is noteworthy that several themes from past SAR inquiries, reviews and workshops support the direction of change. The measures proposed in Section 5 should provide greater coherence to the system in the short term.

However there are also more general policy issues raised by the Oamaru incident, again consistent with the trend of recent history. In many ways, the current system of limited hours of operation for the NRCC and "out-of-hours" service by SARMCs working from home can be said to have served New Zealand well. It has ISO accreditation, and is certainly low in cost. However the SARMCs can become subject to significant pressure, with the system producing less than optimal results in addressing complex situations, and in the quality and speed of SAR response. The current system has a high risk attached to it, and while changes to current arrangements and procedures can help reduce the burden on SARMCs, a sizeable risk will still remain.

In the Reviewer's opinion, consideration of more fundamental reform to SAR arrangements should also begin soon, as it will take some time to work through, and then to implement the resulting decisions. This important area of consideration for the SAR Council is also examined in Section 5.

³⁰ NRCC Report on Class III SAR Coordination Seminar held on 6-7 April 2002; report dated 20 May 2002.

5. AREAS FOR REMEDIAL ATTENTION

Term of Reference #4 requests the Reviewer to, *"in the light of the findings under #1-#3, consider whether the arrangements and procedures need immediate remedial attention"*.

The findings from the preceding analysis suggest that action should be commenced on a wide front, to address deficiencies in current arrangements and procedures, to better support the NRCC, and to strengthen the SAR system overall for Class III incidents. Some of this action can be achieved in a short period of time, while other parts will necessarily take longer, even if commenced soon after consideration of this Report.

As a guide to the Search and Rescue Council in its consideration of managing the process of change and review, the Reviewer has therefore structured his findings on areas for remedial attention into two groups

- The first group covers matters for immediate action, to enhance significantly the current approach, and which should be achievable over a one to three month period
- The second group covers more fundamental policy and institutional matters, leading to a likely new framework for addressing Class III incidents, and which will necessarily take longer to settle over a six month period

The recommendations presented in Section 6 also follow this structure.

5.1 AREAS FOR IMMEDIATE ACTION

The Reviewer concludes that immediate action should be undertaken to strengthen the current system in its responses to distress beacon activations. The current system will need to continue largely in its present form for at least some months while the reviews in Section 5.2 are completed, decisions are taken, and any required new resources and institutional arrangements are put in place. The alternative of putting off immediate change, and waiting until more fundamental reform is considered, is not favoured.

The focus of immediate action should be on revising the SAROPs, supported by workshops and information sessions and ultimately training programs. The Reviewer was informed that plans were being considered to change the SAROPs, to split it into two documents – one based on the quality of SAR responses, the other including procedural detail and documentation. If this change can be made at the same time as the priority areas for revision recommended in this report, it may assist the overall presentation of the changes.

One of the priority areas should be the development of a comprehensive sub-section on incidents that involve distress beacon activation. This sub-section should refer to related procedures in other NRCC member organisations, such as the Police Beacon Protocol. It should also make clear the status of a confirmed emergency beacon

location as a distress situation that needs immediate response, with due consideration of time frame for survival.

The other priority area for attention relates to notification and coordination. Contact with relevant NRCC members could be made mandatory, or at a minimum flagged as highly desirable, when the SARMC makes an early judgement that the situation is likely to require a SAR response. Contact at this point would not only put other NRCC members (and as necessary their local resources) on alert, but also allow a sharing of information and opinion. There could be a canvassing of views on activating the NRCC.

Contact should be mandatory when a resolved alert position is available and then again after a SAR resource is tasked.

These changes will give more confidence to others in the SAR chain of responsibility that certain steps will be considered by the NRCC, and decisions taken, at key points.

Other areas where the SAROPs needs augmentation or revision are

- Updating of Police contact arrangements
- The advice provided to SARMCs in tasking SAR resources
- Advice on the survival time of people likely to be the water, either sea or lake, to inform the SAR response
- Guidance in the case of complex or multiple incidents (eg, priority-setting, delegating tasks, activating the NRCC)

The MDO Manual needs to be reviewed together with the changes proposed to the SAROPs to ensure consistency. Again, it would be appropriate to reduce discretion and make notification of the MOC and the Police mandatory at key points.³¹

The matter of Police contact should be settled between the NRCC, MSA and the Police, ensuring that the SAROPs, MDO Manual and Police procedures are firm and consistent on notification arrangements. In particular, any "near to shore" notification procedure needs unambiguous articulation, rather than the high degree of judgement and interpretation applied currently.

The opportunity should generally be taken to review documents across all NRCC member organisations to ensure consistency and make appropriate cross-references. Throughout this process, shared ownership of the revised approach and supporting documentation should be an objective. A process for regular review, and for ensuring a SAR document is not changed without other organisations being informed, should be instituted.

Communications procedures should be strengthened within and between NRCC member organisations, supported through both documentation and training, to ensure

³¹ It would also be useful to spell out arrangements for incidents that may be located in a lake.

information is passed clearly, and that any failures to hear back on an important matter is followed up, rather than waiting and worrying. Encouragement and assistance for such strengthening of communications procedures should be provided to other communication networks and volunteer organisations linked to the SAR system.

5.2 POLICY AND INSTITUTIONAL REVIEW

The Reviewer considers that a comprehensive review of current policy and institutional arrangements should be commenced and concluded within six months of consideration of this Report.

NRCC Operating Procedures

In focusing on only one incident, the Reviewer is not able to make a definitive judgement on the requirement for major change to NRCC arrangements, such as moving the NRCC to a full "24x7" operation. However it is proposed that the SAR Council commission a full risk analysis of the present NRCC approach. This analysis would cover a range of possible Class III SAR incidents, across the types of SAR incidents and their patterns of incidence and the different forms of institutional arrangements that might apply to respond to them – such as the SARMC acting alone, involving other NRCC members, formally activating the NRCC, or moving toward a full-time NRCC. This analysis should take into account not only the costs of, but also the range of benefits potentially coming from, different courses of action.

The risk analysis would inform consideration of whether the NRCC should be open for longer periods, such as a "12x7" arrangement operating 7am to 7pm, seven days a week, going as far as a full 24x7 arrangement. The risk analysis should include assessment of the risk profile of related communications systems, particularly the current reliance on cellphones, and consider transition and delegation issues for Class III incidents.

This review context will provide the opportunity for a number of decisions to be made on recommendations of the 2001 Maritime SAR Review – including that the NRCC and the MOC be brought together. It is noted that both organisations are scheduled to move in the near future, meaning that at least collocation might be considered, if not full integration.

Implementation of decisions taken from these analyses and assessments also will need to be well informed on resourcing requirements and feasible implementation timetables. For example, a move to longer opening hours for the NRCC will need to be backed up by recruitment and training of SARMCs, and possibly MDOs and support personnel. There is also need for consideration of succession planning to provide replacements when key staff move on.

Consultation programs

The NRCC should undertake a program of consultation with commercial operators of SAR equipment, with close SARMC involvement. One focus would be to discuss issues related to tasking and communication

- The aim would be to develop a protocol, well understood by both SARMC's and operators, about two-way communications during a SAR response
- Issues surrounding the availability and use of direction-finding equipment in particular SAR situations could also be clarified, as could the balance between search only, and search and rescue, responses³²
- As part of this program or as a separate exercise, the database of operators of SAR assets must be regularly reviewed to ensure its currency, and to enable ready identification of primary or regularly used operators and preferred means of communication

Linked to the commercial operators program or to be run separately, the NRCC should also undertake a program of consultation with local Police and SAR volunteers, again with close SARMC involvement

- This would have the benefits of increasing the NRCC's awareness of local issues and response times, give the NRCC a more public profile, and give more confidence in the NRCC's readiness to consider local dimensions in SAR incidents
- It would also help local awareness of the steps that are involved in responding to distress beacon activations, where satellite positioning is critical and where time delays or significant uncertainty has to be faced by the NRCC in responding to possible incidents
- In this latter context, issues surrounding the high percentage of false alerts and inadvertent activations could be discussed

Such a program, together with the program for building relationships with operators of commercial SAR services proposed above, could go a long way to building better understanding and more productive working relationships between all those involved in the national SAR chain of responsibility. Again with the qualification that it is from a restricted sample, the Reviewer identified a present credibility gap in this area between the central organisations, and particularly the NRCC, and local resources – which requires priority attention to address and repair.

Improving the Tracking of SAR Responses

This review has shown how complex and time consuming it can be to pull together a comprehensive chronology of an incident response. This effort does not help review processes, nor learning from experience. Hence, consistent with the recommended improvements in communications procedures, systems for better establishing "audit trails" in SAR responses should be developed. It is noted here that the existence of a large number of un-taped calls by SARMCs is an undesirable by-product of the

³² It is noted here that concern was expressed to the Reviewer about SAR resources without direction-finding equipment being tasked in situations where such equipment was considered to be required, and where resources with such equipment had to be brought in later in the response.

current system, and puts the SARMC in a different position to other NRCC representatives with access to communications networks with better recording arrangements.

A National Policy Statement

As an outcome of these policy and institutional responses, the SAR Council should prepare a SAR policy statement, which would provide a common reference manual for all participants in national SAR activity. The statement would, inter alia, emphasise the importance of coordination and cooperation, and make clear the responsibilities of the individual agencies. For example, the statement would spell out the approach for Class III incidents, linking the key players in the NRCC and in turn linking them to local resources. In turn, this central document would provide a consistent framework for detailed support documents within agencies, and provide for benchmarking arrangements, eg against IAMSAR procedures.

6. RECOMMENDATIONS

Term of Reference #5 requests that the Reviewer *"make recommendations to the New Zealand Search and Rescue Council, as appropriate, by 31 July 2003"*.

The following recommendations continue the format of the preceding discussion in Section 5, with the first group of recommendations considered to be achievable within a one to three month timeframe. While the second group also require an early start, their complexity means that they will take longer to complete or prepare before final decisions are taken, over a six-month period. Besides, as there is a relatively small resource base of expertise to call on, key personnel will need to focus on the immediate actions before switching more attention to the second group of actions.

Appropriate resourcing will need to be provided to complete this wide-ranging package, and to ensure implementation is timely and effective. This latter stage may take twelve or more months, as any new structures are set up, communications systems put in place, all documentation prepared, and personnel trained. While the overall process of implementation is a matter for the New Zealand SAR Council, supportive decisions will also be needed by individual agencies. Ultimately, policy and resourcing considerations are likely to come forward as matters for decision by Ministers.

6.1 IMMEDIATE REMEDIAL ACTIONS

1. *The Search and Rescue Operations Plan (SAROPs) of the National Rescue Coordination Centre (NRCC) be revised to include a specific sub-section on responses to distress beacon incidents, which not only provides guidance to Search and Rescue Mission Coordinators (SARMCs), but also provides clear linkages to related procedures in NRCC member organisations.*
2. *The SAROPs be revised to provide clear advice on responding to incidents where survivors may be in the water, and where priorities need to be struck around likely survival times and the type of response that is most feasible in the circumstances.*
3. *While some discretion must necessarily remain with SARMCs, the SAROPs be further strengthened to ensure that other key NRCC members are alerted without fail*
 - (i) *Where there is any chance that a distress beacon incident may be at sea, the Marine Duty Officer (MDO) to be informed as soon as a reasonable judgement can be made by the SARMC that the signal represents a potential distress situation, but otherwise immediately when a resolved alert is available*
 - (ii) *For any land-based, or near to shore distress beacon incident, the relevant Police Communications Centre or the Police Liaison Officer (PLO) to be informed on a similar basis to the MDO*

- (iii) *As soon as a decision is made to task a search resource, relevant members of the NRCC to be notified (to trigger contact arrangements at the local level and alert/mobilise resources as necessary, if not done already)*
- (iv) *If a significant search by air is in prospect, the ADO to be alerted or brought in to the NRCC*

4. The question of what is a "near to shore" incident, and what procedures and contact arrangements are to apply, be clarified unambiguously in the SAROPs and related documents as part of the responses to recommendations 1-3.

5. The SAROPs be augmented to provide guidance to SARMCs in cases where two or more incidents, or two or more dimensions of the one incident, require prioritisation.

6. The SAROPs be augmented to provide additional guidance on tasking SAR resources, and clear advice on communication with operators of SAR resources.

7. Where there are any problems apparent in mobilising NRCC support, SARMCs be required in such cases to contact the Manager, NRCC or use the Manager to activate the NRCC.

8. As part of the process of revision to the SAROPs, consistent changes be made to key operational documents in other NRCC member organisations. To ensure consistency is maintained, a regular review program also be instituted between agencies, to ensure consultation on possible changes and advice of actual changes.

9. All NRCC member organisations review their paging and "at call" arrangements, to ensure that urgently needed officers and volunteers are located without delay, and are given clear advice on the nature and immediacy of the incident or possible incident, and what is required of them.

10. Communications protocols be established within and between NRCC member organisations, and supported in documentation and training, to ensure that discussions are clear, that all relevant information is provided or sought, and that initiative is taken to call back in instances of failure to receive an expected communication within a reasonable time.

11. Consistent with the changes implemented through recommendations 9 and 10, encouragement and assistance be given to other communications networks related to the SAR system, and volunteer SAR organisations, to enhance their contact and communications procedures.

12. The changes to current arrangements and procedures in recommendations 1 to 11 be endorsed and promoted by the NZ SAR Council, and appropriate documentation sent to all operatives, with a supporting program of seminars and training exercises.

6.2 INSTITUTIONAL REVIEW AND REFORM

13. *The SAR Council commission a full risk analysis of current NRCC arrangements, around a range of possible Class III SAR incidents and the different sets of decisions and institutional arrangements that might be taken to respond to them. These sets of decisions and arrangements to include the possible operation of the NRCC for longer periods, including at weekends. The analysis should take into account not only the costs of, but also the range of benefits potentially coming from, different courses of action and outcomes.*

14. *The risk analysis in recommendation 13 assess also the risks related to particular communications systems, with a view to avoiding over-reliance on a particular system either generally or in responding to a particular incident.*

15. *In the context of this analysis, decisions be taken on related recommendations outstanding from the 2001 Maritime SAR Review, including longer hours of operation for the NRCC and options for a closer relationship between the NRCC and the Maritime Operations Centre (MOC).*

16. *A program of consultation with commercial operators of SAR resources be undertaken by the NRCC, to discuss SAR procedures and tasking arrangements, and to develop a communications protocol. This program then to be maintained as necessary on an annual basis.*

17. *A program of consultation with local Police and volunteer SAR organisations be undertaken by the NRCC, to increase NRCC awareness of local issues and response factors, and inform local SAR resources of NRCC procedures and issues in responding to alerts, emergencies and distress beacon situations. This program then to be maintained as necessary on an annual basis.*

18. *Consistent with new or revised SAR structures, procedures and arrangements to be introduced to provide a clear record of communications and decisions in a SAR response, to enhance performance review, quality assessment and learning from experience.*

19. *The SAR Council prepare a national SAR statement, to outline SAR policy and agency responsibilities, and to provide a common reference manual for all participants in SAR activity in New Zealand.*

20. *The SAR Council develop an implementation plan for decisions based on this review, and on other related inquiries, to ensure their implementation is achieved over the shortest feasible timeframe and that appropriate resources are provided.*

ATTACHMENT 1: TERMS OF REFERENCE

Following a search and rescue incident involving a fishing boat accident off the coast of Oamaru on 11 May 2003 the Minister of Transport has requested the New Zealand Search and Rescue Council to commission Mr John Bowdler to conduct an urgent independent review of the search and rescue procedures involved. Mr Bowdler will be provided with an independent SAR technical assistant, as well as the services of an independent legal advisor.

The purpose of this review is not to allocate fault (if any) on any party or to pre-empt or duplicate any other inquiry into this incident, such as the forthcoming Coroner's inquest or any New Zealand Maritime Safety Authority investigation of the accident. Rather, this review is to provide a prompt investigation, within the terms of reference, to enable the earliest possible implementation of any improvements in current arrangements and procedures that may be necessary.

The New Zealand Search and Rescue Council has requested that the Reviewer complete this review by the end of July 2003.

The Terms of Reference for the Review are as follows:

1. To gain an understanding of the sequence and times of events in the search and rescue response to the incident of 11 May 2003;
2. To ascertain whether the current search and rescue arrangements and procedures were followed;
3. To ascertain whether the arrangements and procedures are appropriate for an incident of this nature;
4. In the light of the findings of 1 - 3 above, to consider whether the arrangements and procedures need immediate remedial attention; and
5. To make recommendations to the New Zealand Search and Rescue Council, as appropriate, by 31 July 2003.

ATTACHMENT 2: ORGANISATIONS AND PERSONS CONSULTED

WELLINGTON

Ministry of Transport

Mr Alastair Bisley
Secretary

Ms Helen Hanify
Manager
Safety and Environment

Ms Hilary Talbot
Principal Legal Advisor

Mr Jonathan Graham
Secretariat Manager
New Zealand Search and Rescue

Maritime Safety Authority

Mr Bruce Wilkinson
SAR Advisor
Marine Duty Officer, 11 May

National Rescue Coordination Centre

Mr Rodney Bracefield
Manager

Mr Terry Knight
Duty Search and Rescue Mission Coordinator, 11 May

Mr Ray Parker

Mr Peter Nalder

Mr Bill Sommer

Mr Jim McLean

Mr John Seward

Mr Bob Randal

Search and Rescue Mission Coordinators

New Zealand Police

Senior Sergeant Gerard Prins
Co-ordinator: Search and Rescue

New Zealand Search and Rescue Council

MOSGIEL

Helicopters Otago Ltd

Mr Graeme Gale

DUNEDIN

Dunedin Central Police Station

Inspector Terry Richardson
District Operations Manager

Sergeant Brian Benn

OAMARU

Owners of *Time Out*

Mr Ian Anderson

Mrs Rose Anderson

Oamaru Police Station

Sergeant Lane Todd

Constable Lynda Eaton

MOERAKI

Mr John McLellan
SAR Marine Advisor
North Otago Police District

ATTACHMENT 3: MAJOR OPERATIONAL DOCUMENTS CONSULTED

Civil Aviation Authority/National Rescue Coordination Centre

Performance Agreement between the Minister of Transport and the Civil Aviation Authority

1 July 2002 – 30 June 2003

New Zealand Class III Search and Rescue Policy Manual

1 June 2001

Search and Rescue Operations Plan

31 May 2001

Maritime Safety Authority

Marine Duty Officer Manual

9 December 2002

(Sections 1 to 3)

New Zealand Police

Protocol for Distress Beacon Incidents

Update of 11 December 2002