

# **MARITIME PATROL REVIEW**

## **Marine Environment & Safety**



**MARITIME SAFETY AUTHORITY  
OF NEW ZEALAND**

*Te Mana Ārai Hauata Moana o Aotearoa*

28 February 2001

## **EXECUTIVE SUMMARY**

New Zealand receives some 3,300 calls by 2,430 international trading ships each year carrying over 99 percent of our external trade by volume and around 84 percent by value, nearly \$20 billion a year. There are a further 2,560 coastal vessels (charter craft, harbour ferries, water taxis, etc.) trading around New Zealand. The New Zealand fishing industry has 1,400 ships and is worth more than \$1.36 billion annually, with some \$1.24 billion being exported. Scenic boat cruising and jet boating on rivers are attracting over one million participants (mainly international tourists) each year and the pleasure vessel sector involves in excess of 250,000 vessels.

While safety and marine environment protection standards on most commercial ships operating within New Zealand are relatively high by world standards, all forms of maritime activity pose an element of risk to people, property and the environment. In particular, the unpredictability of weather and sea conditions, the hazards of submerged containers, collisions with poorly operated ships and the large numbers of recreational vessels create realistic risks that occur on a regular basis.

Approximately 160 oil spills are reported a year in New Zealand waters and of these approximately 35 are identified through aerial detection and monitoring. Also, approximately 540 maritime search and rescues, associated with approximately 30 deaths, occur each year in New Zealand waters. Of the 538 search and rescues in 1999 there were 438 coastal (12 nautical miles) aerial searches involving small fixed wing and helicopter aircraft and 13 medium to long range search and rescues involving six by small fixed wing or helicopters and seven by Air Force Orions.

The prevention, detection and monitoring of oil spills and assistance with maritime search and rescue presently require, and receive, extensive aerial surveillance support from both civil and military aircraft. The management and deployment of resources for the oil spill scenario is already fully catered for and co-ordinated by the Marine Oil Spill Response Strategy managed and operated by the Maritime Safety Authority of New Zealand in conjunction with Regional Government and a Defence Force service contract.

The management and deployment of resources for the search and rescue scenario is, however, another matter as no similar response strategy exists. At present maritime search and rescue is fragmented amongst too many organisations (Police, CAA, MSA, Coastguard Federation, Voluntary Coastguard, RNZAF) to be effectively managed, and the ability to achieve a timely response is increasingly a challenge. This fragmentation means that there is no overall strategic framework to give direction, leadership and fiscal responsibility. It is for these reasons that maritime search and rescue in New Zealand is undergoing review within Maritime Safety Authority and the present Maritime Patrol Study coincides with that review. The MSA review however, is still in its early days and no conclusions or recommendations have yet been drawn. Nevertheless many aspects have



been considered, albeit it in conceptual form, and the following recommendations were put forward within the framework of the Maritime Patrol Review official's group for consideration.

- That the MSA undertake a review of all maritime search and rescue in New Zealand
- That consideration be given to allocating all maritime search and rescue to a single Crown agency
- That consideration is given to forming a single coordinated national maritime search and rescue service.
- That the Crown agency be given the authority to let service contracts for maritime search and rescue services.
- That consideration is given to awarding the Coastguard Federation a service contract for all coastal maritime search and rescue.
- That a 24 hour National Maritime Search and Rescue Centre be formed by amalgamation of Marine Duty Officers, Maritime Operations Centre, National Rescue Co-ordination Centre and NZ Police (maritime SAR) functions.
- That MSA examine the requirement for a national ship reporting system throughout the New Zealand search and rescue area, referred to as NAVAREA XIV.
- That the emergency telephone number 111 be extended to include "Maritime Rescue"

If the aerial surveillance resources that are currently provided by the Defence Force for oil spill monitoring and search and rescue are going to be transferred (under contract) to a new Maritime Co-ordination Centre, as recommended by the official's group, and if those resources are going to be added-to in order to give better coastal and medium range surveillance, then the Maritime Co-ordination Centre will need to be a single all encompassing and co-ordinated organisation that will effectively manage information and deploy resources. The Maritime Co-ordination Centre should be a unit that receives information and intelligence from all maritime Crown agencies such as Customs, Fisheries, Maritime Safety and Defence Force and should have the authority to deploy surveillance resources on behalf of those other agencies. The chain of command between the Maritime Co-ordination Centre (controlling funding) and the maritime Crown agencies will need to be more fully analysed after this study. In Australia, for instance, the control of funds by Coastwatch and the Australian maritime Crown agencies is still being debated 12 years after the formation of Coastwatch.

The official's group believes that the creation of a new Maritime Co-ordination Centre will contribute significantly to improvements in the management of many aspects of maritime safety. It also supports the creation of an additional new and all encompassing maritime search and rescue service under the control of a single Crown agency, preferably the Maritime Safety Authority of New Zealand.



## **PREFACE**

At a meeting on 21 August 2000 the Cabinet decided not to proceed with Project Sirius, the re-equipping of the Air Force P3 Orion aircraft. The Cabinet further decided that New Zealand's future requirements for maritime patrol should include a greater consideration of civilian functions. To this end a group of Ministers were invited to (a) examine how the civilian requirements for maritime patrol can best be met, (b) examine whether a military maritime patrol capability should be maintained, and (c) report its findings back to Cabinet by the end of February 2001. The Department of the Prime Minister and Cabinet (DPMC) was tasked to convene an official's group to investigate and report to Ministers on these issues, now referred to as the Maritime Patrol Review.

The Maritime Safety Authority of New Zealand is represented on the official's group and has been tasked to look at the needs of a maritime patrol for the purposes of assisting in the maintenance of the marine environment and maritime safety.

It has been agreed that each member of the official's group will individually prepare a report of their specific area of responsibility to address the needs and this report does that. The contents of the individual reports will then be combined by the official's group to form a single Maritime Patrol Review Report. This report will be presented by Ministers to the Cabinet in February 2001.

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## **WARNING**

The contents of this document are the individual views of the author as a member of the official's group on the Maritime Patrol Review. They have not been vetted by the Director of Maritime Safety and can therefore not be used as an official expression of MSA policy and philosophy.





	Page
EXECUTIVE SUMMARY	2
PREFACE	4
CONTENTS	5
INTRODUCTION	
7	
THE MARITIME SAFETY AUTHORITY OF NEW ZEALAND	8
Overview	8
Background	8
Operating Philosophy	
9	
PROFILE OF THE MARITIME INDUSTRY	
10	
Overview	10
Environmental and Safety Protection Record	11
MARINE ENVIRONMENT	13
Prevention	
13	
Surveillance	13
Monitoring	14
Control	
14	
Response	
14	
Surveillance	14
Monitoring	15
Control	
15	
MARINE SAFETY	16
Prevention	
16	
Surveillance	16
Monitoring	16
Control	
17	
Response	
17	
Surveillance	19
Monitoring	19
Control	
19	
Statistics	
21	
THE NEED FOR A MARITIME PATROL	23



Marine Environment	
23	
Marine Safety	23
<b>MEETING THE NEEDS</b>	<b>25</b>
Management and Control	25
Aerial Surveillance	27
On The Water Resources	28
Contracting Of SAR Services	
28	
Recommendations	
28	
<b>ATTACHMENTS</b>	
A. NRCC New Zealand Search & Rescue	
B. New Zealand Coastguard Federation	



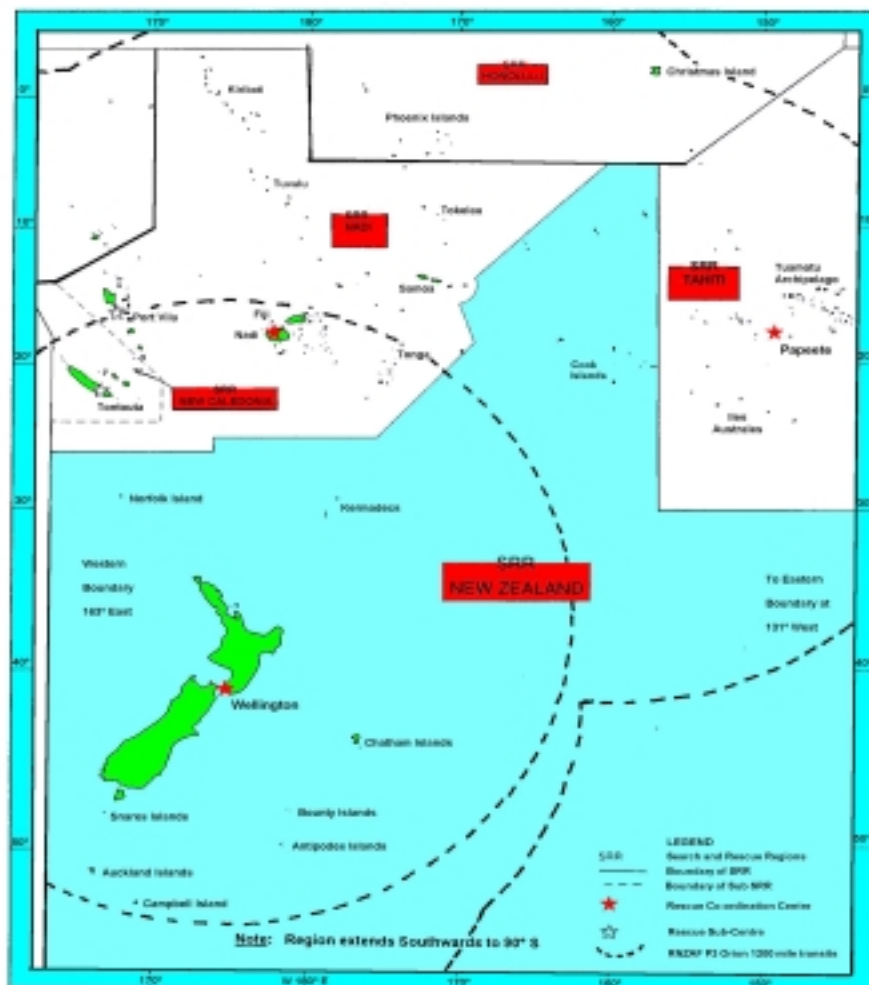


## INTRODUCTION

The purpose of this report is to identify and address the need for a maritime patrol to maintain the marine environment and marine safety in and beyond New Zealand waters. In so doing, the report first establishes the respective national and international requirements laid down in the Maritime Transport Act 1994 and how this governs the role of The Maritime Safety Authority of New Zealand (MSANZ) to meet those requirements.

The report follows a step by step approach starting with the legal mandate on MSANZ to provide specific maritime services, then through the MSANZ process and philosophy of providing those services and finally on to the need for external service providers. In particular, the need for a maritime patrol to support the marine environment and safety.

The picture below shows The New Zealand Search and Rescue Region (NZSRR), a combined International Civil Aviation Organisation (ICAO) and International Maritime Organisation (IMO) region. The region is part of the sea area called NAVAREA XIV.



# **THE MARITIME SAFETY AUTHORITY OF NEW ZEALAND**

## **Overview**

The Maritime Safety Authority of New Zealand (MSANZ) is a Crown entity established in August 1993. Its principal objective, set out in the Maritime Transport Act 1994, is to undertake activities that promote a safe maritime environment, provide effective maritime pollution prevention and provide an effective marine oil pollution response system, at reasonable cost.

The MSANZ enters into a Performance Agreement with the Minister of Transport each year, reports quarterly and annually on its activities, and is subject to policy direction from the Government. However, the Director of Maritime Safety has statutory powers under the Maritime Transport Act which are independent of the Minister.

The main activities of The MSANZ is: to license ships and seafarers; register ships; conduct safety inspections of New Zealand ships and of foreign ships calling at New Zealand ports; provide and operate aids to navigation, such as lighthouses, for ships on the New Zealand coast; investigate accidents; participate in maritime searches and rescues; maintain the New Zealand marine oil spill response strategy and national contingency plan; approve and assist in the development of oil pollution response plans at the individual ship, oil transfer site and regional levels; train oil spill response personnel; and, administer the New Zealand Oil Pollution Fund.

The MSANZ develops, on behalf of the Minister of Transport, draft maritime and marine protection rules, the form of delegated legislation for technical standards provided for in the Maritime Transport Act 1994. Other ministerial services include technical advice on maritime safety and environmental protection issues, advice on Ministerial correspondence, parliamentary questions and industry liaison.

## **Background**

While the MSANZ has just completed its sixth year of operation and is one of the Crown entities to emerge from state sector restructuring in the early 1990s, it can trace its origins back to 1862 and the establishment of the Marine Board, one of the first organs of state established in the colony of New Zealand. After a period of Customs Department control during the last decades of last century, the Marine Department, as it became, operated until absorbed into the Ministry of Transport as the Marine Division in 1972. It was in turn renamed and modestly restructured as the Ministry's Maritime Transport Division during the initial stages of state sector restructuring in 1988.

Using the model of the Civil Aviation Authority, legislation establishing the MSANZ was introduced to Parliament in early 1993. The setting up of the MSANZ was one part of a transport law reform bill which addressed the full



range of New Zealand maritime law and provided for the first major reform of the country's shipping legislation in nearly forty years. Anticipating that Select Committee scrutiny of the law reform package could take some time, it was decided to fast track the institutional restructuring. As a consequence, the Bill was split and the MSANZ came into being on 20 August 1993. From then until the larger reform package was enacted as the Maritime Transport Act 1994 (in force 1 February 1995), the new organisation administered the old Shipping and Seamen Act 1952.

## **Operating Philosophy**

The MSANZ's operating philosophy is based on its principal objective to undertake activities which promote a safe maritime environment and provide an effective marine oil pollution response system at reasonable cost.

The MSANZ's approach is risk-based and focused on the areas where the best results in terms of risk-reduction will be achieved at reasonable cost. The use of the best available technology in provision of safety services and oil spill response capability is an important element of this approach. Equally important is the forging of good relations with the maritime industry in a safety partnership and the promotion of safety management where participants take the primary responsibility for managing the risks involved in their activities.

The MSANZ thus puts a high value on effective communication and consultation, recognising that in certain respects the MSANZ, with its national perspective, its technical expertise and international contacts is uniquely placed to provide the industry with safety information, standards and advice at reasonable cost while the industry has a wealth of practical, site-specific experience and knowledge that need to be harnessed if rules are to be relevant, up to date and widely respected. While the MSANZ is an enforcement agency and recognises that the application of criminal sanction has its place, prosecution is only one of the tools it has at its disposal.

# **PROFILE OF THE MARITIME INDUSTRY**

## **Overview**

New Zealand receives some 3,300 calls by 2,430 international trading ships each year. These carry over 99 percent of our external trade by volume and around 84 percent by value – nearly \$20 billion a year. The international shipping sector contributes around 87 percent of the industry levies collected by the Authority.

The New Zealand coastal and restricted limits (charter craft, harbour ferries, water taxis, etc.) shipping sectors comprises some 2,560 vessels, which contribute around six percent of industry levies.

The fishing industry, another important client group of the Authority, contributes around seven percent of industry levies from around 1,400 New Zealand ships and 230 foreign ships. It is a diverse group – ranging from a few large companies (some with annual operating income in excess of \$300 million) working large vessels with onboard processing facilities out of a few key ports (Nelson, Auckland, Tauranga, Timaru) to small owner-operated boats spread the length of the New Zealand seaboard. The commercial fishing industry is worth more than \$1.36 billion annually, with some \$1.24 billion being exported and around \$130 million consumed in the domestic market. In recent years, investment in large deep sea fishing boats by NZ companies has reduced the use of chartered foreign vessels.

Another developing and equally diverse maritime sector is that serving the adventure tourism, game fishing and scenic cruise markets. There are more than 1,000 commercial boats engaged in these activities, which attract a significant proportion of overseas visitors. Scenic boat cruising and jet boating on rivers are among the most popular activities of international visitors attracting over one million participants per year. White water rafting is also a favourite activity. Foreign tourism is estimated to contribute some \$3.6 billion to the New Zealand economy a year and is projected to grow from nearly 1.6 million visitors in 1999 to over 2.0 million by 2004.

The pleasure vessel sector is an enduring feature of the New Zealand maritime scene, involving in excess of 250,000 vessels. People take their pleasure in a wide range of boat types, from ocean going yachts, manually powered canoes to various types of high speed craft. An important subgroup, one that figures often in the accident statistics, is small powered craft used for recreational fishing. The Authority receives no money directly from the participants in the pleasure sector for services it provides but is paid by the Government some \$1.2 million a year on their behalf.

While safety and marine environment protection standards on most ships operating within New Zealand are relatively high by world standards and in comparison with some other types of transport, all forms of maritime



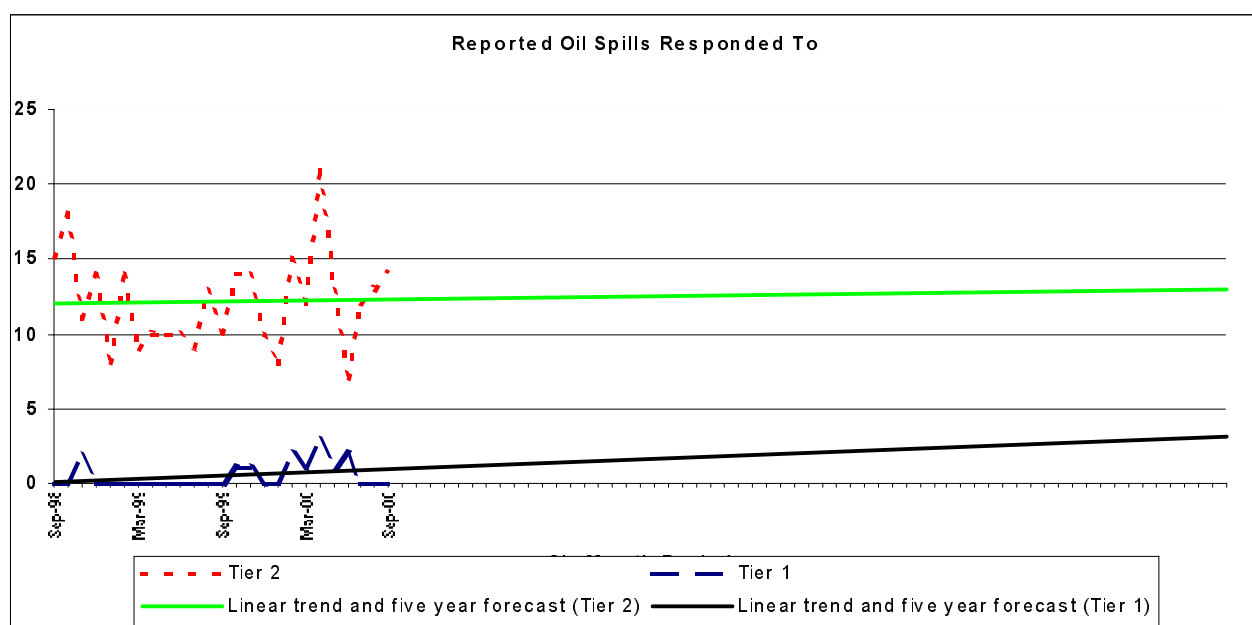
activity pose some element of risk to people, property and to the environment. Moreover, New Zealand, with its heavy reliance on foreign ships to carry international trade is not untouched by international trends in ship safety.

New Zealand maritime activity is also influenced by world trends in the organisation of container shipping (the development of mega-carriers providing total logistics packages) and the further exploitation of economies of scale of container ships by the use of ever larger vessels calling at a restricted range of hub ports.

## Environmental and Safety Protection Record

### Oil Spills

The following graph illustrates the numbers of reported Tier 1 and Tier 2 oil spill responses from September 1998 to September 2000. This shows that the number of Tier 2 responses is rising slightly and that the Tier 1 responses are also rising.

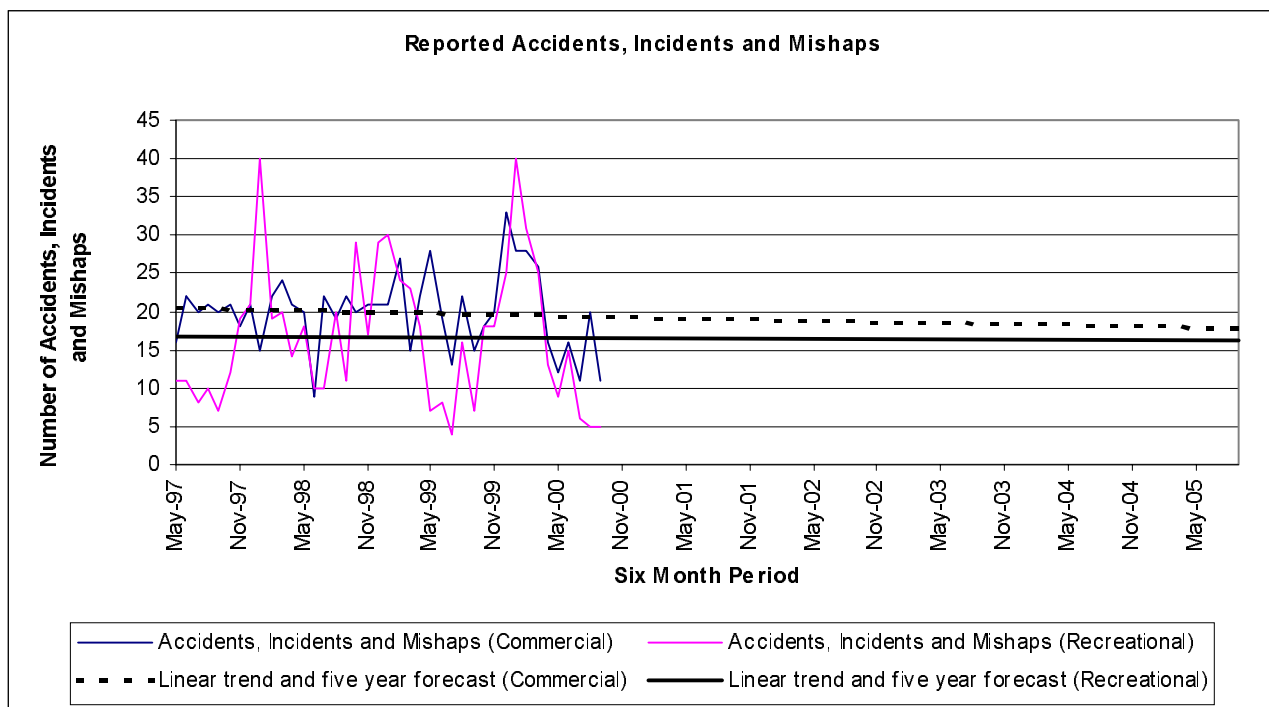


The average number of reported oil spills a year is 160.

### Accidents, Incidents and Mishaps

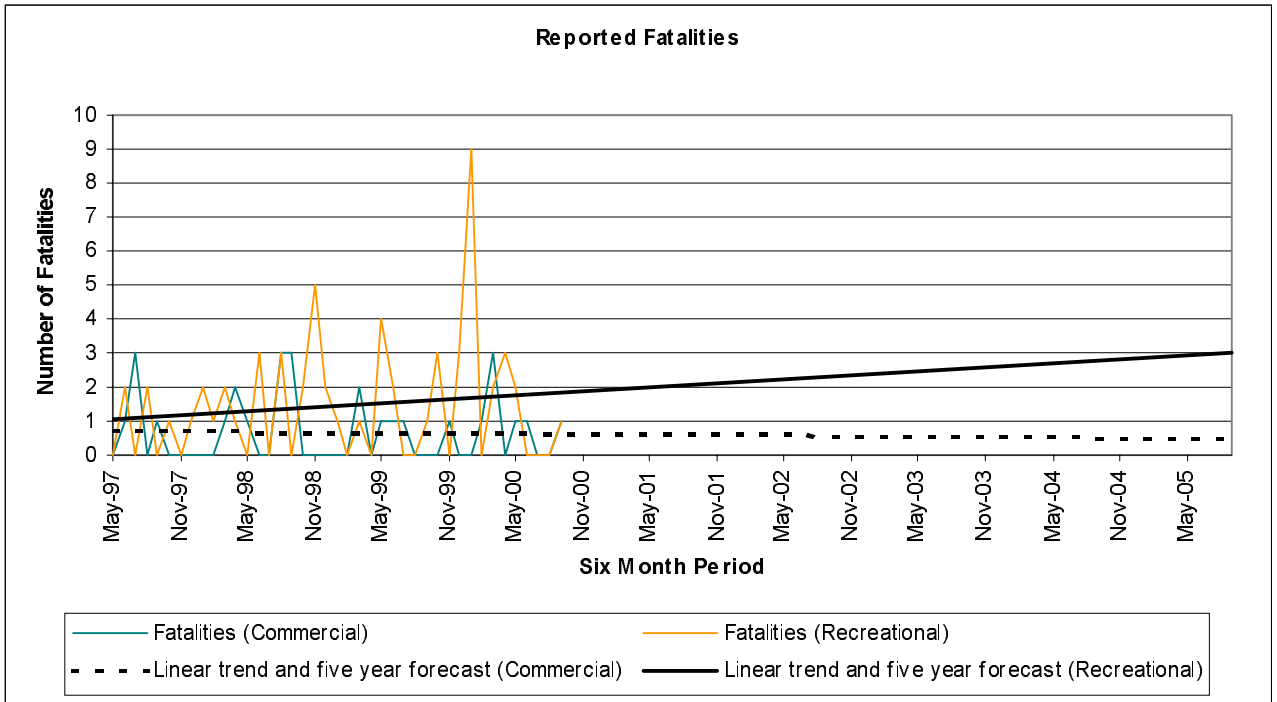
The following graph illustrates the absolute numbers of reported accidents, incidents and mishaps involving **commercial and recreational vessels** since 1997. The three year rolling average shows a slight decline in the numbers of reports. The commercial vessel population has increased from 5000 vessels in 1995 to 6600 vessels in 2000. While the absolute numbers

of reported accidents, incidents and mishaps has remained static overall, there appears to have been a decline in relative risk over the years.



### Fatalities

The following graphs shows the numbers of reported fatalities involving commercial and recreational vessels since 1997. The three year rolling average shows a rise in reported fatalities over time.





## **MARINE ENVIRONMENT**

The marine environment is polluted from land-based and sea-based sources. The Maritime Safety Authority of New Zealand has specific responsibility, with others, for the prevention and response to sea-based pollutants, whereas that for land-based pollutants lies elsewhere. This report therefore addresses those issues relating to the prevention and response to marine pollution from sea-based sources.

As a reminder, it is worth noting that the average number of reported oil spills in New Zealand waters is 160 per year. Of these the vast majority are close in shore or in harbours, as would be expected, as they can be observed (reported) by others. How many occur further off-shore can only be guessed but the number reported (usually in well used shipping lanes or those sighted by aeroplanes) is only 2-3 oil spills a year. It should also be remembered that most if not all of the oil spills are Tier 1 or Tier 2 spills and therefore relatively small.

It is further worth noting that the usual response to oil spills that occur well out to sea is to allow the action of the weather and seas to break up and disperse the oil and not to intervene with dispersing equipment and materials. In these cases, surveillance only takes place.

### **Prevention**

The Maritime Safety Authority has responsibility for promoting the prevention of pollution from ships and offshore petroleum exploration and production facilities. The New Zealand Government has acceded to MARPOL which requires compliance with a range of international standards for the prevention of pollution from ships.

### Surveillance

Whilst there is a 24 hour maritime distress radio watch there is no ongoing aerial surveillance of ships and off-shore platforms taking place in New Zealand waters for the MSANZ. Occasionally, aerial surveillance is requested by MSANZ, of the Defense Force, of a particular vessel or oil spill if a flight is planned to take place over the route for some other reason. But this is usually in response to a previous concern rather than as an ongoing and planned surveillance policy.

Further (indirect) surveillance could be possible if ship routing, ship reporting or automatic (vessel) identification schemes were introduced into New Zealand, as is occurring overseas. This would give a clear indication of the likely position and route each vessel would be taking at any time and if an oil spill were reported in an area then the vessels that went through that area could be investigated. Similarly, it would encourage vessel operators from entering restricted and environmentally sensitive areas. However, this

would be voluntary on the part of ship operators to comply with the operation of these schemes and there is no firm plan to introduce them into New Zealand in the near future.

### Monitoring

Whilst it is neither practical nor possible to continually monitor the activities of ships and off-shore platforms, and hence know if they are illegally discharging pollutants, monitoring through periodic inspections does “encourage” prevention. To this end, the period during which the MSANZ’s safe ship management and safe operation plan systems were introduced showed a slight decline from an average of 15 reported regional oil spill responses (Tier 2) a month to 12 a month. Refer to the graphs on page 11 of this report. However, this trend then reversed and the number of reported Tier 2 oil spill responses rose slightly. Similarly a risk analysis has shown a future trend of a slightly rising average number of both Tier 1 and tier 2 oil spills over the next two years.

### Control

**Compliance**, by arriving local and international ships, with MARPOL standards is managed through the MSANZ’s port state and flag state inspections at all of the main New Zealand ports. Should a vessel operator be unable or unwilling to confirm compliance then the MSANZ has the authority to detain that vessel until compliance is demonstrated. Similarly, if an inspection reveals a deficiency in pollutant handling equipment or system management or if inadequate records have been kept of any stored pollutants then the vessel may also be detained until such deficiency is corrected.

## **Response**

The Maritime Safety Authority is responsible for ensuring New Zealand is both prepared and able to respond to a marine oil spill of any size. The New Zealand Marine Oil Spill Response Strategy details the approach the New Zealand Government has agreed to ensure a response capability. In August 1998, the Government became a party to the OPRC convention which sets out the international obligations for marine oil spill preparedness, response and co-operation with other States. Currently the Maritime Safety Authority and the Ministry of Transport are engaged in a risk assessment and cost benefit analysis to determine if our response capability for marine oil spills should be extended to shipping incidents involving the carriage of hazardous and noxious substances.

### Surveillance

As previously stated in the **Prevention** section, there is no ongoing aerial surveillance for ships or oil platforms in New Zealand waters. However, from time to time, aerial surveillance is undertaken to:



- determine if a reported oil spill is in fact oil;
- determine the extent of the oil spill;
- track the movement and spread of the oil spill.
- locate the offending vessel;
- undertake infrared and other aerial monitoring and detection work;

To this end The Maritime Safety Authority has recently signed an agreement with the New Zealand Defence Force to provide assistance in the carrying out of the aerial surveillance associated with the spill response activities.

### Monitoring

Should an oil spill occur, inspection of the offending vessel immediately takes place to ensure that all further spillage is stopped or minimised. An investigation then takes place to ascertain whether the spill was preventable or not and what may be learnt from the incident. A photographic record of the spill is established for future use in any investigation, including aerial photographs.

Should the identity of the offending vessel not be immediately known, steps are taken to determine who it may be. This is likely to involve the establishment of ship schedules and routing in the area, recovery of pollutant samples from the spill for analysis and an extensive aerial photographic record. Should the likely offender be an international vessel and it's next destination known, then corresponding overseas Authorities are requested to take samples off the vessel on arrival in port. This action was recently taken following a spill near the sensitive Poor Knights Islands resulting in the offending vessel being identified and subsequently prosecuted.

### Control

Control of oil spills in New Zealand follows the established international practice of a three-tiered approach. A Tier 1 response is site-specific and handled by the responsible industry, following a minor spill on board a vessel, an oil platform or a shore based installation. A Tier 2 response is handled by the local Regional Authority following a moderate spill usually on or close in-shore. A Tier 3 response is the responsibility of The Maritime Safety Authority following a major spill either close-in or off-shore and requires the mobilisation of national resources.

The Maritime Transport Act requires the responders to the three response tiers to produce contingency plans to the standards provided within the Act, the Maritime Protection Rules and any guidelines issued by the Director of Maritime Safety. These Contingency Plans have been prepared and are in-place. Similarly, skilled staff are trained in the use of the plans and exercise to ensure proficient deployment in the event of a spill.

Oil spill response equipment has been purchased and stored around New Zealand with responsible authorities. A further major store of oil spill equipment is located in the Maritime Safety Authority's National Oil Spill Command Centre, Te Atatu for immediate re-location by land, sea or air transport to a spill location. A system of On-Scene-Commander can be set up at short notice by experienced operators to provide a command and control centre from which to communicate, manage and control a response.



## MARINE SAFETY

Under international law of the sea, coastal states like New Zealand are obligated to ensure the safety of life at sea within their areas of maritime jurisdiction and to render their waters safe for navigation by vessels. In the case of New Zealand, the area of sea that we have jurisdiction over is NAVAREA XIV, extending from the equator down to the Antarctic ice cap, half way across the Tasman Sea in the west to approximately half way across the Pacific Ocean in the east.

The Maritime Safety Authority of New Zealand meets these obligations, on behalf of the New Zealand Government, by providing aids to navigation, a maritime distress and safety radio communication service, a broadcast service of marine warnings and regular weather reports and a search and rescue service. How those services help to **prevent** accidents and alternatively how they **respond** to accidents after they have occurred is discussed below.

### Prevention

The Maritime Safety Authority has the responsibility for promoting the prevention of accidents at sea. It does this by issuing and enforcing the standards to which vessels and mariners must comply, by education and promotional material on safe practices, by providing timely maritime information on the prevailing conditions and then by providing navigational and radio services that help the marine help themselves.

### Surveillance

A continuous 24 hour radio watch is maintained on all the marine distress channels throughout the sea area NAVAREA XIV. This comprises: the VHF radio coastal sea area watch to a distance of 40 nautical miles from the coastline: the MF/HF radio oceanic sea area from the equator to the Antarctic: the geo-stationary INMARSAT (A, B & C satellite systems) covering a large part of the sea area NAVAREA XIV: and the polar orbit COSPAR/SARSAT satellite system giving emergency beacon locator coverage of the whole of NAVAREA XIV once every 90 minutes. Whilst these systems of radio watch may be considered more responsive than preventative, they do have a significant prevention component. This is with the issuing of weather reports, storm warnings and the location of navigational hazards such as ship wrecks, containers washed overboard from ships and the like.

No aerial surveillance is kept for the specific purposes of maintaining marine safety.

### Monitoring



The MSANZ operates and maintains a comprehensive system of visual aids to navigation (AtoN) around the 5290 km coastline of New Zealand to facilitate safe navigation by the maritime community in accordance with Section 200 of the Maritime Transport Act 1994. The MSANZ system of AtoN comprises 94 lighthouses, 40 day markers and 5 buoys and helps the mariner to navigate a safe passage upon arrival in New Zealand's coastal waters. The lights are classified as landfall and coastal passage lights. The land-fall lights are located at the main points of land-fall that vessels arriving from over-seas would first see, say Cape Reinga in the north and Stephens Island at the northern entrance to Cook Strait. These lights have a maximum range of 19 nautical miles. The coastal passage lights are located along the New Zealand coastline and at the entrance to channels and assist vessels transiting the coast. The range of these lights varies from 19 nautical miles to 3 nautical miles depending on their use.

The lights have a high availability and reliability (better than 99.8%) and the key lights are automatically monitored on a 24-hour basis.

Various new technological systems of automatic tracking of vessels are being promoted by IMO (similar to aircraft tracking). These depend on a transponder (black box) being permanently located on a vessel with it transmitting a set amount of data on the vessel identification and position. This information is received by an Authority and plotted on a chart. This monitoring of a vessel and the associated audio radio communications that usually occurs between the vessel and Authority is primarily to provide search and rescue assistance either to the vessel if in distress or by the vessel to help others in distress. This method of automatic vessel identification (and tracking) is being recommended by IMO for introduction by member states by 2001. Such a system would be of value to MSANZ in aiding safe passage and with a search and rescue exercise, however, no plans exist for its introduction in the near future. **Note.** This system is in use by New Zealand's Fisheries to monitor fishing quota's.

The New Zealand Notices to Mariners is issued each week by the Chief Hydrographer of Land Information New Zealand (LINZ), updating mariners with chart corrections, amendments to navigational aids, navigation warnings and the like. The notices include New Zealand, Australian and British corrections in their respective areas of responsibility.

### Control

With the introduction of port state and flag state control it is becoming increasingly difficult for vessels to operate in substandard conditions. Should a vessel operator be unable to meet the specified standards then the MSANZ has the authority to detain that vessel until compliance is demonstrated.

## **Response**



By far the greatest area of Marine Search and Rescue (SAR) activity in New Zealand is dealing with pleasure boating, and the majority of this is in the close to shore region (up to three miles from the coast). Most of the incidents in these cases are dealt with by New Zealand Police and the Royal New Zealand Coastguard. Incidents also occur with ocean yachts on trans-Pacific or trans-Tasman voyages, although in recent years these have greatly reduced.

The second area of activity for SAR forces is small commercial craft, mainly fishing boats.

The group giving least problems is commercial shipping. This is perhaps because of the relatively low density of large ships in the region, the fact that the ships are manned by trained seafarers and the availability of modern navigational aids on board.

Maritime Search and Rescue operations are conducted in New Zealand in compliance with three international conventions to which New Zealand is party. These are:

- (a) the International Convention on Safety of Life at Sea 1974, as amended and updated.
- (b) the International Convention on Search and Rescue 1979.
- (c) Convention for the unification of certain rules of law respecting assistance and salvage at sea, (Brussels Convention 1910)

The statutory authorities for maritime search and rescue are contained in the *Maritime Transport Act 1994, No 104*. They are as follows:

- (a) Section 32 - imposes a specific duty on the master of any ship to render assistance to any person in danger of being lost at sea.
- (b) Section 199 (1) The Minister shall--
  - (a) Establish, maintain, and operate a Rescue Co-ordination Centre for the conduct of marine search and rescue operations; and
  - (b) Appoint persons to participate, either generally or in any particular case, in marine search and rescue operations in respect of any ship or aircraft or any person which or who is, or is believed to be, in distress or unaccounted for at sea; and
  - (c) Exercise such other powers as may be necessary or desirable for the effective performance of marine search and rescue operations, or for ship reporting systems or for the implementation of any international convention or agreement relating to marine search and rescue operations to which New Zealand is a party.

It should be noted that shipping at sea is obliged to respond to a distress signal, and can therefore be "requisitioned" by the National Rescue Co-ordination Centre, whereas aircraft have to be requested to assist in SAR. However, it is recognised that diverting a large merchant ship costs a great deal of money, and can cause disruption to the schedules of ports and other vessels as well as the ship itself. This resource is therefore used sparingly, and ships are generally co-operative. Inshore operations are carried out using small craft as far as possible, dependent on the circumstances.

The above authorities make it clear that the sole objective of maritime search and rescue operations is to save life, and that neither Government nor ships at sea have any responsibility with regard to preservation of property. Indeed, section 113 of the *Maritime Transport Act 1994* makes it clear that in saving life the rescuers do not lose their right to salvage.

### Surveillance

As previously stated in the **prevention** section, there is a 24 hours radio watch maintained on all the distress radio frequencies and a similar watch is kept for the activation of emergency beacons.

The distress radio network is divided in to a coastal watch on the VHF radio channel 16 and the long distance watch on the MF/HF maritime frequencies of 4, 6, 8, 12 and 16 MHz. The coastal VHF radio coverage extends to approximately 40 nautical miles from the coastline and presently covers 92% of the coastal sea area, soon to be extended to 96%. The long distance MF/HF radio covers the large sea area of NAVAREA XIV.

The geo-stationary INMARSAT (A, B & C satellite systems) covers a large part of the sea area NAVAREA XIV: and the polar orbit COSPAR/SARSAT satellite system giving emergency beacon locator coverage of the whole of NAVAREA XIV once every 90 minutes

No aerial surveillance is kept for the specific purposes of marine safety. However, aerial search is a key part of search and rescue and this is discussed later.

### Monitoring

On receiving a distress call the immediate requirement of the Maritime Operations Centre (or Police or Coastguard) is to ascertain the callers position, vessels state and the number and condition of the people on board. This then is used in the planning and deployment of the rescue resources. **Note.** Frequently the information in the distress call is garbled, incoherent or too short to allow full comprehension and it is at these times that the skills of the search organisers and the services of the aerial surveillance can make the difference of a life saved or not.

Similarly, on receipt of a Emergency Position Indicator Radio Beacon (EPIRB) signal the National Rescue Co-ordination Centre will determine the beacons position through satellite tracking and the vessel type through the EPIRB database (406 MHz beacons only). **Note.** The 121.5 MHz beacon is a much cheaper type beacon than the 406 MHz beacon and the associated satellite system only gives partial information, namely the beacons position, and then in some cases only after two satellite passes. No database of the beacons owner is kept.

The MSANZ provides the services of a Marine Duty Officer 24 hours a day to provide nautical advice in searching for and dealing with vessels in distress. Close co-operation by all



the monitoring and rescue agencies is maintained (and essential) to ensure the best possible co-ordination and control a rescue.

### Control

The control of a search and rescue in New Zealand depends on who receives the distress call and the class of rescue that it is assigned. In New Zealand there are three classes of search and rescue.

Class I: A SAR operation that can be carried out efficiently and effectively by the NZ Police alone. These are SAR actions carried out by Police, and usually concern persons on their own. In maritime terms this is perhaps a swimmer, or board sailor, injured or in difficulties, on or near a beach. Police operate their own well-equipped Police launches in Auckland and Wellington or call on the services of the Coastguard organisations.

Class II: A SAR operation in which the Police obtain assistance from other organisations or persons, but in which the control of and responsibility for, remains at all times with the NZ Police. This classification covers the majority of incidents in all areas including Maritime. The actions are controlled and run by Police, and deal with matters close to shore, mainly utilising Coastguard organisations, private pleasure boats, fishermen and other small commercial craft, boating clubs, and surf-lifesaving clubs. Maritime incidents in the Class II category vary from broken down engines, people not returned from a day's boating, to perhaps a large yacht stranding close to shore. As volunteer organisations have grown and become more professional and better equipped, Police have the ability to tackle large operations. Air support in this close to shore area is obtained from aero clubs, small locally based commercial aircraft, and some commercial helicopters who include SAR as part of their activity. The Royal New Zealand Coastguard Federation also has Air Patrols. These are private aircraft fitted with antennae and peripherals, to quickly fit maritime direction-finding and chart-plotting electronics. Depending on availability, the best aircraft for a particular task can be equipped in a few minutes.

Class III: means SAR operations other than Class I and Class II searches, being:

- (i) all SAR operations associated with activated emergency location transmitters; and
- (ii) all SAR operations associated with missing or distressed aircraft; and
- (iii) search and rescue operations, including those for missing or distressed surface vessels or aircraft, requiring the use of national civil and/or military resources, or co-ordination with other States, controlled from the National Rescue Co-ordination Centre; and
- (iv) search and rescue operations begun as Class I or II when responsibility is transferred by mutual agreement to the National Rescue Co-ordination Centre by NZ Police.

Co-ordination of a Class III action is the responsibility of the Civil Aviation Authority, and control and running of the action is in the hands of the NRCC team. When a Class III Operation is called, the following people are required to staff the National Rescue Co-ordination Centre at Lower Hutt:

SAR Mission Co-ordinator, Civil Aviation Authority (CAA)  
Marine Duty Officer, Maritime Safety Authority of New Zealand (MSANZ)  
Air Direction Officer, Royal New Zealand Air Force (RNZAF)  
Police Co-ordinator

Other people are called in depending upon the nature of the operation, ie the Royal New Zealand Navy (RNZN) representative, should naval vessels be deployed. The National Rescue Co-ordination Centre is not physically staffed 24 hours per day, and generally takes about twenty minutes to activate.

Initiation of Class III Maritime Searches is by the Marine Duty Officer, who will recommend to the Search and Rescue Mission Co-ordinator that a Class III operation be commenced. The MDO will also recommend the decision to upgrade Class II searches when matters have escalated beyond the ability of Police resources to handle the action, or the action has spread beyond the close to shore guideline.

The information in the attachments shows the number, type and location of Class III search and rescues in the past five years, with some information extending out to ten years. It shows that there is an average of 25 Class III search and rescues each year and of these an average of 8 a year require aerial support to locate and assist with the rescue.

### Statistics

The maritime community has approximately 500 accidents, incidents and mishaps a year. This number is split about 50-50 between the recreational and commercial sectors but there is suspected to be a considerable degree of under reporting of accidents by the recreational sector.

The maritime community has approximately 30 deaths a year of which 10 would be commercial and 20 would be recreational.

The number of maritime search and rescues carried out in the 1.7.1999 to 30.6.2000 year is as follows (1998-99 figures in parenthesis):

Class I	134 (168)
Class II	385 (338)
Class III	19 (24)

Of the Class I & II searches 438 included aerial searches using small fixed wing or helicopters.

Of the Class III searches 13 aerial searches occurred, six by small fixed wing or helicopter and seven by the Air Force Orions. For comparison the Air Force Orions were used for 12 (1995), 8 (1996), 10 (1997), 3 (1998), 9 (1999) sorties.

Vessel population in New Zealand waters for the 12 months to 31.8.2000:



Pleasure	252,000 (estimated)
Passenger	1834
Non-passenger	726
Fishing (Foreign)	235
Fishing (NZ)	1418
International (excl fishing)	2430

The “value” of a life is placed at \$2.4 million by the New Zealand Government for the purposes of preparing business cases (cost/benefit analysis). The MSANZ uses this value in its business cases to justify capital works expenditure.

## **THE NEED FOR A MARITIME PATROL**

### **Marine Environment**

As previously stated, there are approximately 160 reported oil spills a year in New Zealand all of which, bar 2-3, are close in-shore or in a harbour. Of the total, about 32 are caused by vessel discharge, about 18 are caused by ship to shore bunkering mishaps, about 3 are caused by ship to ship bunkering mishaps and the remaining 107 are of a minor or unknown cause. All these spills are from a total commercial vessel population of 6643 (31 August 2000).

There are therefore approximate 35 reported oil spills a year at sea (vessel discharges or ship to ship bunkering). All of these, bar 2-3, are within the 12 nautical mile limit. The 2-3 spills out to sea are beyond the 12 nm limit but are well inside the Extended Economic Zone (EEZ) of 200 nautical miles.

The trend over the last four years shows that the rolling average number of oil spills remains at about the same number of 160 with forecasts showing a slight rise due, in the main, to the increase in vessel population (5000 in 1995 to 6000+ in 2000).

The responsible authorities (Regional Councils) for Tier 1 and Tier 2 spills would generally require aerial surveillance for the approximate 35 spills a year that are coastal or close in to shore. The MSANZ would also require aerial surveillance of the infrequent Tier 3 spills. Such aerial surveillance would be for ongoing monitoring of a spill (and aerial photography) until the spill is dispersed.

The type of aerial platform used to take the photographs is not discussed here. But as the surveillance is of a relatively unsophisticated nature and for the majority done either close in-shore or moderately close in-shore most platforms, such as small twin engine planes through to larger planes and satellites, could provide this service. Availability and cost then becoming the key factors.

### **Marine Safety**

As previously stated there are approximately 30 deaths a year in New Zealand waters, ten of which are in the commercial sector and twenty in the recreational sector. This is from a commercial vessel population of 6,643 and a recreational vessel population of approximately 252,000.

By comparison there were 519 close in-shore (Class I & II) search and rescues last year and 19 off-shore (Class III) search and rescues. Of the 519 Class I & II search and rescues there were 438 aerial searches involving small fixed wing and helicopter aircraft. Of the 19 Class III search

and rescues there were 13 aerial searches, six by small fixed wing or helicopters and seven by the Air Force Orion.

The key requirements of aircraft used for aerial searches are:

- availability
- prolonged flying time
- low flying ability
- extended search pattern ability
- good communication equipment
- life raft and survival gear deployment
- cost

New Zealand has a relatively large population of aircraft that can be made available for search and rescue. Even in the more remote locations around the Fiordland coast of South Island both small fixed wing and helicopters are within 30 minutes flying time of the coast, subject of course to the weather. The professional helicopter services offered by the Westpac Trust and the Life Flight Trust and similar are of a high standard and generally on standby. Similarly there are a large number of flying schools and aero-clubs that make their planes available for search and rescue. However, the skill of the pilots in the private flying clubs varies widely and they can be more of a hindrance than help. Coastguard has nine "Coastguard Air Patrols" that operate out of Ardmore, Kerikeri, Tauranga, Hastings, New Plymouth, Paraparaumu, Nelson, Christchurch and Invercargill and the skill and availability of these services is usually high.

The Coastguard Air Patrols typically operate single engine fixed wing aircraft, (usually Cessna 172 or better,) and most have access to twin engine aircraft if required. None of the aircraft, (with the exception of Auckland Voluntary Coastguard based at Ardmore,) are owned by Coastguard. They are typically owned and operated by the local aero club and hired to Coastguard at commercial rates for both training of crews and actual operations.

These Coastguard aircraft and those operated by the like of the Westpac Trust and Life Flight Trust are well suited for aerial searches. They have crew with good navigation and search pattern skills and the aircraft are well equipped with radio communication and directional finding equipment.

The MSANZ nor the National Rescue Control Centre has any aerial surveillance platforms of their own. Therefore, for those Class III search and rescues (average 8 a year) that are well off-shore (beyond the 12 nm limit) and require prolonged search patterns and for those carried out in poor weather the Air Force Orion is the only aerial search platform that is suitable and available. Also in regard to the use of the Orions, the service provided by the Air Force is professional and skilled and the crew have extensive training in search and rescue missions.

## MEETING THE NEEDS

Maritime Search and Rescue in New Zealand is undergoing review and the present Maritime Patrol Review conducted by the officials group for the DPMC coincides with that review. The review, being conducted within the Maritime Safety Authority, is still in its early days and no conclusions or recommendations have yet been drawn. However many aspects have been considered, albeit it in conceptual form, and ongoing discussion with interested parties, such as the Ministry of Transport, Civil Aviation Authority, New Zealand Police and the Coastguard Federation is taking place.

The driving force behind the review is the fact that maritime search and rescue in New Zealand is fragmented amongst too many organisations and individuals to be truly effective. And as a result no one body is taking responsibility for the overall strategic direction and management of this essential service.

Therefore, in submitting these comments on the needs of a Maritime Patrol, the MSA is not in a position to specifically identify the types of platforms and equipment (aircraft, ships, command centres, radar systems and so on) that would best meet those needs. However, the MSA is in a position to put forward opinion on the concept of a maritime patrol, including how it could be integrated into maritime search and rescue and how it could be formed, managed and used. And that opinion is discussed below in "Management and Control".

With respect to the marine environment needs for a maritime patrol study this has already been well researched and documented by the Maritime Safety Authority of New Zealand and reference is made to the work carried out by MSA on the Ocean's Policy. In particular the extensive study of the protection of the marine environment from pollution under the auspices of the **New Zealand Marine Oil Spill Response Strategy**. The study resulted in the creation and operation of National and Regional Oil Spill Command and Service Centres. Specialists were employed and trained by MSA in the strategic and tactical management and control of oil spills. Also contractual agreements were put in place for the deployment of both civilian and military resources in an oil spill responses situation. Therefore, what ever comes out of the maritime patrol review will most likely compliment the existing oil spill strategic framework.

**Note.** The New Zealand Marine Oil Spill Strategic Framework gives a good working model of service purchaser/service provider that could be applied to both maritime search and rescue and maritime patrol.

## Management and Control

The overwhelming message being given to MSA, from national and international contacts, on maritime search and rescue is the need for New



Zealand to establish an overall strategic framework against which all future maritime work would be managed and controlled.

By comparison, under the Maritime Transport Act 1994 the Director of Maritime Safety is required to prepare and maintain such a strategic framework for the protection of the marine environment against pollution incidents, and this he does. However, no similar requirement or strategic framework exists for maritime search and rescue in New Zealand.

Therefore, no one body is taking responsibility for the overall strategic direction and management of maritime search and rescue. The New Zealand Police are mandated to look after some parts of search and rescue, Civil Aviation Authority another part, Maritime Safety Authority for maritime distress and safety radio communications, Voluntary Coastguard (not mandated) to rescue people, and many other voluntary organisations add their contribution. But no one organisation co-ordinates the total resources, no one manages the overall finances and no one monitors and manages overall performance. Therefore by default, the Maritime Safety Authority is considering, as part of its review, to provide the missing leadership and direction, subject to Board and Ministerial approval.

Why such an overview of search and rescue has not been developed is mainly historical and a brief explanation is inserted below.

All search and rescue in New Zealand is categorised by type, namely land, sea or air with responsibility variously delegated by the New Zealand government to the New Zealand Police and Civil Aviation Authority for all three types. The New Zealand Police respond to those search and rescues that use local resources (Class I & II) and the Civil Aviation Authority via the National Rescue Co-ordination Centre responds to those search and rescues that use national resources (Class III). Specifically, maritime search and rescue in New Zealand has historically evolved from the individual maritime communities that had to fend for themselves (and in many localities still do) to the conglomeration of national, regional and local organisations that now exist. Whilst the New Zealand Police and the Civil Aviation Authority are mandated to respond to calls for maritime search and rescue the Police have very few sea going resources to provide national coverage and CAA have none. They both, therefore, call on the services of many voluntary and commercial organisations to carry out the search and rescues. The main rescue body they call on is Coastguard, a federation of 67 independent affiliates (62 sea going and 7 air support affiliates). The Coastguard affiliates have in many localities, set themselves up as autonomous search and rescue organisations with their own community radio service, rescue vessels and voluntary crew. Whilst this may be perceived to benefit specific localities (and local fund raising draws on this) it has frequently had the opposite effect as most search and rescues need a more wide spread input. Valuable time (the golden hour) has frequently been lost by the local voluntary rescuers "going-it-alone" only to find they need outside support from the New Zealand Police, Maritime Radio and

others to complete the rescue. Also, instances have been recorded of adjacent Coastguard affiliates competed for rescue call-outs (and memberships) and others of failing to involve the New Zealand Police, as they are required to.

Finally, the biggest problem for maritime search and rescue is the ongoing development and promotion by Coastguard of its own distress radio frequencies and cell phone number in direct opposition to the internationally recognised distress frequencies operated by Maritime Distress Radio and the 111 emergency number.

It is because there are many coordinating issues arising in maritime search and rescue that the Maritime Safety Authority has taken the initiative to carry out a review in the area. A large part of the review will be to consider the creation of a strategic framework that will lead to the management and control of all maritime search and rescue in New Zealand.

A similar scenario will need to be considered for a future Maritime Patrol. Input from civilian (Fisheries, Customs, Maritime SAR, Foreign Affairs) and military (Defense Forces) sources would provide information and intelligence into a centralised maritime intelligence centre. The centre would then co-ordinate the deployment of national resources for the civilian and military needs. **Note.** In Australia, the Coastwatch operation receives **ALL** maritime information from both civilian and military sources. It then manages the planned deployment of resources that meets each individual contributing organisations needs as defined in respective Service Level Agreements.

## **Aerial Surveillance**

Aerial surveillance for maritime search and rescue is provided in New Zealand by both civilian and military bodies. In 1999 there was a total of 451 aerial searches. Of these, 444 (98.4%) were carried out by civilian aircraft (fixed wing and helicopter) and 7 (1.6%) by the RNZAF.

The civilian aerial surveillance was conducted by Coastguard, Life Flight Trust, Rescue Helicopters and the many private flying schools and aero clubs located around New Zealand.

There are seven affiliated Coastguard Air Patrols and they typically operate single engine fixed wing aircraft, (usually Cessna 172 or better,) and most have access to twin engine aircraft if required. None of the aircraft, (with the exception of Auckland Voluntary Coastguard based at Ardmore,) are owned by Coastguard. They are typically owned and operated by the local aero club and hired to Coastguard at commercial rates for both training of crews and actual operations.

These Coastguard aircraft and those operated by the like of the WestpacTrust and Life Flight Trust are well suited for aerial searches within



the coastal 12 nautical mile limit. They have crew with good navigation and search pattern skills and the aircraft are well equipped with radio communication and directional finding equipment.

Maritime aerial surveillance into the Economic Exclusive Zone of 200 nautical miles is possible but limited, being dependent upon the availability of suitable aircraft and flying time. In this area and beyond, in to the greater 1200 nautical mile range, the RNZAF P3 Orions are used. At present the P3 provides by far the best platform to conduct aerial surveillance for SAR. Many of the searches are for relatively small objects, such as life rafts, with poor radar reflections. The crews of the P3's have proven very successful in searching for people in distress. How many P3's would be needed for the small number (usually less than ten a year) of blue water SAR's is obvious at one, with maybe a second on standby for sorties of more than 7-10 hours.

## **On The Water Resources**

The Coastguard Federation and Affiliates provide the majority of sea going vessels and skilled mariners in New Zealand for maritime search and rescue. However, the Coastguard Affiliates that man the vessels are not co-ordinated on a national basis, nor are they prepared to answer to the Coastguard Federation. There is therefore little or no cohesion and accountability in this important area of maritime safety. More over there is conflicting leadership and strategic direction. This needs to be resolved and the best approach would be to do it financially. This does not mean that Central Government should pay for the full services of Coastguard (estimated at \$6.5M). At present Coastguard is funded primarily by Lotto Grants Board and membership subscription. This should be retained but Central Government should finance, via MSA and the Coastguard Federation say, the cost of a full time coxswain at each of the 62 coastguard affiliates. The estimate for this would be \$1.6-2.0M. This would give control of the facility, training and performance standards to the Coastguard Federation. It would also help MSA to co-ordinate the whole of maritime SAR including performance audits.

## **Contracting Of SAR Services**

The present standard of SAR services varies between each organisation and each part of each organisation. Whilst the Coastguard Federation and MSA identify the standards to which the coastguard affiliates will operate there is no direct means of control. Similarly the Coastguard affiliates have no Government mandate or contract of service to perform search and rescue. This needs to be resolved and the best way to do this is via service contracts. Such contracts could be tendered for and award by a national maritime SAR centre. It would be expected that the Maritime Safety Authority would have the responsibility for specifying and awarding the service contracts (similar to the present maritime radio service contract and the lighthouse service contracts). Also that the Coastguard Federation would be the likely service providers since they have the resources and infrastructure in place. Such contracts would reinforce the management and control of both the service provision and performance standards. It would also provide the leadership, cohesion and strategic framework that is presently lacking.

## **Recommendations**

The following recommendations were put forward within the framework of the Maritime Patrol Review official's group for discussion.

- That the MSA undertake a review of all maritime search and rescue in New Zealand
- That consideration be given to allocating all maritime search and rescue to a single Crown agency

- That consideration be given to forming a single coordinated national maritime search and rescue service.
- That the Crown agency be given the authority to let service contracts for maritime search and rescue services.
- That consideration be given to awarding the Coastguard Federation a service contract for all coastal maritime search and rescue.
- That a 24 hour National Maritime Search and Rescue Centre be formed by amalgamation of Marine Duty Officers, Maritime Operations Centre, National Rescue Co-ordination Centre and NZ Police (maritime SAR) functions.
- That MSA examine the requirement for a national ship reporting system throughout the New Zealand search and rescue area, referred to as NAVAREA XIV.
- That the emergency telephone number 111 be extended to include "Maritime Rescue"

If the aerial surveillance resources that are currently provided by the Defence Force for oil spill monitoring and search and rescue are going to be transferred (under contract) to a new Maritime Co-ordination Centre, as recommended by the official's group, and if those resources are going to be added-to in order to give better coastal and medium range surveillance, then the maritime Co-ordination Centre will need to be a single all encompassing and co-ordinated organisation that will effectively manage information and deploy resources. The Maritime Co-ordination Centre should be a unit that receives information and intelligence from all maritime Crown agencies such as Customs, Fisheries, Maritime Safety and Defence Force and should have the authority to deploy surveillance resources on behalf of those other agencies. The chain of command between the Maritime Co-ordination Centre (controlling funding) and the maritime Crown agencies will need to be more fully analysed after this study. In Australia, for instance, the control of funds by Coastwatch and the Australian maritime Crown agencies is still being debated 12 years after the formation of Coastwatch.

The official's group believes that the creation of a new Maritime Co-ordination Centre will contribute significantly to improvements in the management of many aspects of maritime safety. It also supports the creation of an additional new and all encompassing maritime search and rescue service under the control of a single Crown agency, preferably the Maritime Safety Authority of New Zealand.

## ATTACHMENTS

### A. Search and Rescue Statistics

#### SEARCH AND RESCUE TASKS UNDERTAKEN BY RNZAF P3K ORION AIRCRAFT: 1995 – 2000

During the period from 1 January 1995 to the present, the P3K Orion aircraft of No 5 Squadron, RNZAF, have assisted the National Rescue Co-ordination Centre by completing 47 SAR missions involving over 430 flight hours. These searches resulted in the safe rescue of 118 people while 12 people did not survive their ordeal. The data does not include tasks conducted outside the NZ Search and Rescue Region in support of neighbouring SAR Authorities or tasks which are MEDIVAC rather than SAR missions.

A breakdown of the Orion SAR missions by calendar year is as follows:

*Year: 1995*

<u>Date</u>	<u>Search Target</u>	<u>POB</u>	<u>Search Location</u>	<u>Flt Time (hrs)</u>
10 Mar	Distress Flares	Unknown	Taranaki Bight	5.7
21 May	Aircraft	1	Hawkes Bay	4.0
26 Jun	Yacht	2	Bay of Plenty	15.4
15 Jul	Yacht	2	30s 176E	14.3
22 Jul	Yacht	2	29S 179E	7.0
20 Aug	Yacht	2	27S 178W	12.5
3 Aug	F/V	5	43S 174E	1.3
12 Sep	Yacht	5	17S 159W	8.5
10 Oct	Distress Flares	Unknown	Near Cape Brett	5.1
16 Oct	F/V	2	28S 179W	4.5
16 Nov	Launch	2	South Taranaki Bight	3.6
23 Nov	Yacht	4	Near Poor Knights	6.5
<b>Totals:</b>	<b>12</b>	<b>27</b>		<b>88.4</b>

*Year: 1996*

<u>Date</u>	<u>Search Target</u>	<u>POB</u>	<u>Search Location</u>	<u>Flt Time (hrs)</u>
27 Jan	Launch	2	Bay of Plenty	6.0
22 Feb	F/V	2	Near Westport	4.0
24 Apr	F/V	2	Near Manakau Heads	1.0
26 May	Yacht	2	32S 175E	5.0
30 May	Yacht	2	34S 174E	3.5
18 Jul	F/V	8	42S 172W	12.5
2 Aug	Dinghy	3	Near Whangerei	4.0
1 Oct	F/V	Unknown	Near Hokitika	6.5
<b>Totals:</b>	<b>8</b>	<b>21</b>		<b>42.5</b>

Year: 1997

<u>Date</u>	<u>Search Target</u>	<u>POB</u>	<u>Search Location</u>	<u>Flt Time (hrs)</u>
12 Jan	Launch	4	Cook Strait	4.0
22 Jan	Yacht	4	50s 170E	7.8
20 Jan	ELT	Unknown	46S 160W	3.8
28 Feb	Ship	Unknown	41S 171W	6.5
8 May	Yacht	1	26S 178E	12.0
30 May	Ship	Unknown	46S 160E	6.3
16 Jun	ELT	Unknown	14S 168W	12.1
12 Jul	Yacht	3	18S 176W	5.0
22 Jul	Island Trader	26	17S 163W	23.25
5 Nov	Hurricane	Several	9S 166W	14.5
<b>Totals:</b>	<b>10</b>	<b>38</b>		<b>95.25</b>

Year: 1998

<u>Date</u>	<u>Search Target</u>	<u>POB</u>	<u>Search Location</u>	<u>Flt Time (hrs)</u>
16 Jul	Distress Flares	Unknown	34S 175E	6.0
20 Aug	F/V	3	Near Cape Brett	20.0
27 Nov	Yacht	2	Near Cape Brett	12.2
<b>Totals:</b>	<b>3</b>	<b>5</b>		<b>38.2</b>

Year: 1999

<u>Date</u>	<u>Search target</u>	<u>POB</u>	<u>Search Location</u>	<u>Flt Time (hrs)</u>
21 Feb	Yacht	3	27S 164E	17.0
7 May	Dinghy	2	37S 176E	5.0
24 May	Yacht	2	19S 167E	11.0
4 Jun	F/V	2	40S 172E	7.2
18 Jun	Yacht	2	50S 179E	23.0
13 Aug	F/V	8	32S 179W	6.5
27 Aug	Yacht	2	23S 175E	12.0
23 Sep	Yacht	1	19S 175W	7.7
30 Nov	Yacht	3	34S 169E	7.5
<b>Totals;</b>	<b>9</b>	<b>25</b>		<b>96.9</b>

Year: 2000 (to date)

<u>Date</u>	<u>Search Target</u>	<u>POB</u>	<u>Search Location</u>	<u>Flt Time (hrs)</u>
9 Mar	Launch	4	Bay of Plenty	4.2
14Apr	Yacht	3	25S 168E	11.8
2 May	Yacht	1	20S 165W	14.3
13 Jul	Yacht	1	30S 176E	13.5
29 Jul	ELT	Unknown	31S 175E	16.8
29 Aug	Launch	2	35S 176E	4.0
26 Sep	Yacht	3	34S 176E	6.0
<b>Totals:</b>	<b>7</b>	<b>14</b>		<b>70.6</b>

## **B. Royal New Zealand Coastguard Federation**

Howard

We do not have accurate statistics specifically for our aerial search units. They are typically a part of a waterborne affiliate of the Federation. The statistics which have been kept are weighted towards the marine units SAR matters.

I am able to give you best estimates of usage in the interim.

Coastguard has 9 "Coastguard Air Patrols". These are situated at :

Ardmore  
Kerikeri  
Tauranga  
Hastings  
New Plymouth  
Paraparaumu  
Nelson  
Christchurch  
Invercargill

These Air Patrols typically operate in single engine fixed wing aircraft, (usually Cessna 172 or better,) and most have access to twin engine aircraft if required. None of the aircraft, (with the exception of Auckland VCG based at Ardmore,) are owned by Coastguard. They are typically owned and operated by the local aero club and hired to Coastguard at commercial rates for both training of crews and actual operations.

Coastguard units aspire to cover up to 20 miles offshore around our coastline, though typically most operations are conducted within 10 miles and the search aircraft normally operate within these boundaries as well. We do not recommend our crews operate over water at distances greater than 10 miles in a single engine aircraft.

Coastguard Air Patrol Crews are trained in search pattern techniques, specialist Air Observer techniques for maritime operations and RDF tracking techniques. The crews must be adept at low level search and liferaft deployment.

The Coastguard database I was referring to is in the process of being developed. It is a membership database which has a detailed attachment for vessel details so that these may be used for SAR purposes if needed. We already have a reasonable database with these details compiled from the VHF licensing.

We do not keep details of affiliate SAR or precautionary-SAR operations. All operations involving the Police are recorded on the Police P130 Form and are held by Police at their Nat. HQ - You may be able to access this information from them. Snr Sgt Gerry Prins would be a good starting point.

Our annual "workload" is now fairly consistent at around 5,500 calls for assistance each year. About 15% of these involve the Police. After discussing the matter with our Operations Support Staff, we estimate that our Air Patrols would be deployed as a SAR resource approx. 200 - 225 times p.a. (sum of all Air Patrols)

I hope this is of assistance to you.

Kind Regards

Kevin J Rangi

