

MARITIME FORCES REVIEW

KEY FINDINGS



**Defence Policy & Planning Unit
Ministry of Defence**

JANUARY 2002

TABLE OF CONTENTS

1.	Summary	2
2.	Policy Requirements	9
3.	Shaping Factors	10
4.	Requirements of the Navy	11
5.	Gap Analysis	21
6.	Capability Requirements to Meet Policy Gaps	24
7.	Fleet Composition Option for the Royal New Zealand Navy	28
8.	Implications	30
9.	The Way Ahead	31
	Glossary	33
	Annex A – Terms of Reference	

1. SUMMARY

INTRODUCTION

1.1 On the 8th May 2001 the Government announced a series of decisions that built on the Defence Policy Framework (DPF) with the aim of developing a modern, sustainable Defence Force that will concentrate defence resources in a range of affordable and sustainable military capabilities to meet our requirements, our strategic interests and our obligations.

1.2 The announcements signalled the need for increased coastal and mid-range offshore surface surveillance, as concluded in the *Maritime Patrol Review* chaired by the Department of Prime Minister & Cabinet and released in February 2001. This conclusion, coupled with the impending withdrawal from service of the last of the Leander-class frigates, *Canterbury*, in 2005, provided an opportunity to review the composition of the Navy's surface fleet. The Government also requested that the two roles performed by the Royal New Zealand Navy Volunteer Reserve (RNZNVR), Mine Countermeasures (MCM) and Naval Control of Shipping (NCS), be examined.

1.3 In addition to the military and foreign policy related uses of naval vessels, the Review was to take into account the recommendations of the *Maritime Patrol Review*, in particular:

- The civilian requirement for coastal and mid-range offshore capabilities;
- The roles to be performed in conjunction with New Zealand's responsibilities and obligations in respect to the Southern Ocean and Ross Dependency;
- The need for an appropriate sealift capability, including the use of such a capability for disaster relief and other tasks in the South Pacific; and
- The need for, and priority to be accorded to, the roles performed by the RNZNVR.

1.4 To be fiscally sustainable, capital acquisition costs to meet this requirement must not exceed NZ\$500 million and operating costs must be accommodated within the NZDF baselines that were set as part of the 2001 Budget. Initial Rough Order of Magnitude costings suggest that within this ceiling it is possible to acquire a Multi-Role Vessel (MRV) to replace *Canterbury* at a maximum cost of \$US100 million, at least two offshore patrol vessels and to upgrade the Navy's existing fleet of five Inshore Patrol Craft (IPC) so that they are able to provide some capability to meet the inshore patrol requirements of civilian agencies. This is considered a minimum option that would provide an affordable and acceptable solution although it would leave some gaps. Replacing the existing IPCs with fast inshore patrol boats would be a longer term objective.

The Requirement for Maritime Forces

1.5 The Government's objective is to equip the Navy with a practical fleet that is modern, sustainable and matched to New Zealand's needs. To meet this objective the Navy requires the capability to undertake an extensive array of military and non-military tasks in widely varied environmental conditions. This requires a Naval Combat

Force, Naval Support Force, Naval Patrol Force, Mine Countermeasures and Diving Support Force, and a Hydrographic service.

- **A Naval Combat Force** is required to undertake the most demanding military tasks. These include providing for the defence of New Zealand and its territorial waters and Exclusive Economic Zone (EEZ), meeting our alliance commitments to Australia including responding to South Pacific and Southern Ocean contingencies across a broad front, meeting our Five Power Defence Arrangements (FPDA) obligations and contributing to UN and other multilateral peace support operations. The ships of the Naval Combat Force also demonstrate New Zealand's commitment to regional and global security through ship visits, and training and exercises with other countries. With the disbandment of the Air Combat Force the ability of the Naval Combat Force to participate in FPDA activities will take on added importance.
- **A Naval Support Force.** There are two elements to the Naval Support Force. The first is the provision of underway replenishment of deployed forces, currently provided by the fleet tanker, *Endeavour*. The second is the provision of a sealift capability for the transport and deployment of equipment, vehicles and personnel without access to a port. No Royal New Zealand Navy (RNZN) capacity currently exists. A MRV that is able to meet a range of roles in our region would also have a tactical sealift capacity. The MRV's roles would also include: responding to natural disasters in the South Pacific; undertaking humanitarian relief operations; participating in peace support operations; military support activities; and contributing to development assistance in the South Pacific.
- **A Naval Patrol Force** is required to conduct maritime surveillance, in conjunction with maritime air patrol assets, in the New Zealand EEZ, to assist South Pacific Island states to patrol their EEZs, and in the Southern Ocean. The surveillance tasks are primarily non-military in support of civilian agencies. These tasks can be grouped as inshore tasks that cover the area from the shoreline to about 24 nautical miles; offshore tasks that extend to the limit of New Zealand's EEZ; tasks in the South Pacific; and Southern Ocean tasks.
- **A Mine Countermeasures and Diving Support Force** is required to provide mine countermeasures and clearance diving support capabilities. The requirement is to protect New Zealand's seven major ports through: the development of safe routes into them; the maintenance of a route survey database; the development of a capacity to dispose of mines and other explosives underwater; and by practicing the skills necessary to lead merchant ships through cleared access routes into the ports.
- **A Hydrographic Service** refers to the provision of hydrographic survey and associated services to the NZDF, Land Information New Zealand (LINZ) and other civilian agencies (this is the subject of a separate review and is not addressed further in this report).

Meeting the Requirement

Naval Combat Force

1.6 The Navy currently has a naval combat force of three frigates with embarked Seasprite maritime helicopters supported by the fleet tanker, *Endeavour*. The force will be reduced to two frigates when *Canterbury* is taken out of service in 2005.

1.7 Because the ANZAC frigates have few training bunks, they need to spend considerable time on combat training tasks in order to maintain sufficient crew to provide an appropriate level of capability to meet operational requirements. This high training requirement, in addition to operational commitments and maintenance requirements, means that in a 12-month period, the Navy would be able to guarantee one frigate for operational tasking for no more than six months. The Review concluded that the naval combat force, supported by *Endeavour*, should be devoted to primarily military tasks in the achievement of the Government's global and regional security objectives. There would be some capacity to respond to patrol tasks that may arise during training.

Naval Support Force

1.8 The naval support force provides two capabilities: underway replenishment of deployed forces and sealift. Underway replenishment is currently provided by the fleet tanker *Endeavour*. There is no capacity for sealift at present. Based on the findings of the 2000 Sealift Review the Government determined that, given the infrequent need for sealift, the ability to charter commercial ships when required, and the lack of versatility for other tasks, the acquisition of a dedicated sealift ship would not be a wise investment. A better investment would be a MRV that can undertake a number of roles in our region, including a limited tactical sealift capacity for such operations as disaster relief in the South Pacific. It could also be used for humanitarian relief operations, peace support operations, military support operations and contribute to development assistance in the South Pacific. It must also take over the training role currently performed by *Canterbury*. The MRV will be available to supplement the naval patrol force when not engaged on these roles.

1.9 The military and civilian sealift requirement is for the transport of people and equipment into a theatre of operations so that they will be able to operate effectively once ashore. Given the limitations in port facilities in the South Pacific and parts of Southeast Asia, there is a requirement to be able to off-load people and equipment without access to a port facility. The civilian requirement could include the delivery of heavy equipment such as bulldozers for disaster relief. The military requirement for sealift includes the transport of the Army's light armoured vehicles. The requirement to deliver onshore heavy equipment will influence the design of the MRV.

1.10 In the past, New Zealand has relied on coalition partners to provide this capability, in particular France and Australia. The increasingly fragile security situation in the South Pacific will likely drive an increase in concurrent operations such as peace support, humanitarian assistance and evacuations. New Zealand will need an independent capability to conduct these types of operations. Growing demands on the naval assets of other countries make it increasingly likely that they would be unable to meet our needs. Reliance on other countries could also significantly slow down response times for military and civilian emergencies.

Naval Patrol Force

1.11 The *Maritime Patrol Review* identified that there was very little routine surveillance undertaken around New Zealand and that RNZN vessels were not appropriately configured for this work. The Maritime Forces Review has confirmed that patrol capabilities are required to conduct maritime surveillance, in conjunction with maritime air patrol assets, in the New Zealand EEZ, to assist South Pacific Island states patrol their EEZs, and in the Southern Ocean.

1.12 Surface surveillance provided by the naval patrol force would complement aerial surveillance and other sources of information. Although aircraft are the most cost-effective method of providing surveillance over a large area, surface vessels are required to maintain a physical presence and provide enforcement. They provide the capability to board, inspect, and arrest or conduct hot pursuit of offending vessels that may be engaged in illegal or unregulated activities and would be interoperable with maritime patrol aircraft. Their presence also serves to deter would-be offenders and demonstrate New Zealand's will to protect its territorial sovereignty and natural resources.

1.13 There are several agencies with surface patrol requirements. They are the Ministry of Fisheries (MFish), the New Zealand Customs Service, the Maritime Safety Authority (MSA), the New Zealand Police, the Ministry of Foreign Affairs and Trade, the Department of Conservation (DoC) and the Ministry of Agriculture and Forestry (MAF). The tasks required of the Navy by civilian agencies include: surveillance; monitoring; boarding and inspection of vessels; arrest; hot pursuit of vessels beyond the EEZ; finding and retrieving items from the sea floor; detecting and responding to marine oil spill incidents; conducting search and rescue operations; providing limited towage facilities; and observing and recording marine species. There is also a sealift requirement for transport of personnel and supplies to remote DoC bases such as Raoul Island.

1.14 Patrol tasks are grouped as inshore tasks that cover the area from the shoreline to 24 nautical miles; offshore tasks that extend to the limit of New Zealand's EEZ; and tasks in the South Pacific and Southern Ocean. Analysis of the civilian requirements highlighted a number of tasking patterns:

- About two-thirds of the total civilian agency requirement is in the inshore zone;
- Over half of the total requirements were considered to be high priority by the responsible agency;
- Tasks in the northern half of the EEZ (north of and including the Marlborough Sounds and Tasman Bay) are almost all inshore and tasks in the southern half of the EEZ are mostly offshore. The southern half of the EEZ experiences the most extreme sea states (See Table 1, Page 10, for description of sea states);
- The level of activity in the north remains relatively constant during the year. Activity almost doubles in the south during winter, coinciding with the worst sea states.

1.15 The requirement is for about 950 sea days annually performing inshore patrol tasks and about 420 days annually performing offshore patrol tasks. This Review, and consultation with civilian agencies, suggests that a mix of five small inshore patrol

vessels for most of the inshore tasks and at least three capable offshore patrol vessels (OPV), plus the MRV, for the offshore tasks would meet this requirement.

1.16 Financial constraints may limit the ability to acquire immediately both a MRV and all of the patrol force capabilities needed. Innovative and bridging solutions need to be investigated. Upgrading the Navy's existing fleet of five IPCs would provide a low cost solution for meeting the inshore requirement, although it would not satisfy the total requirement. The Navy's IPCs as presently configured are not ideally suited for the inshore patrol task, due largely to a significant speed limitation that cannot be improved (a maximum speed of 12.5 knots). Civilian agencies agree, however, that upgraded IPCs could provide a workable solution should financial constraints prevent the immediate acquisition of a more suitable capability. Upgrades would include improving seakeeping, enhancing communications and fitting a faster, more capable Rigid Hull Inflatable Boat (RHIB). The IPCs, in conjunction with the diving support vessel, *Manawanui*, would still be required to provide training and a mine countermeasures and clearance diving support capability. As further funds become available, the IPCs would progressively be replaced by specialist fast inshore patrol vessels.

1.17 Discussions with industry and other countries have indicated that there may be other, less traditional, ways of meeting the requirement. It is therefore proposed that the shipbuilding industry be approached to proffer solutions based on commercial design standards to meet output-based specifications. The specifications will indicate how many sea days are required, the tasks that have to be performed, the operating conditions in which the tasks will have to be performed, and the financial constraints that will govern affordability.

1.18 This is the approach used by Australia and the United Kingdom in addressing their surface patrol requirements. Contact with the shipbuilding industry indicates they will be receptive to this approach. Some companies have indicated they will be prepared to respond with a package approach to meet our requirement for both a MRV and a patrol force. The shipbuilding industry has also indicated that there will be considerable scope for New Zealand industry involvement in the acquisition projects to meet this requirement.

1.19 The minimum patrol option is for the MRV, at least two OPVs, and upgrading the five IPCs. This would provide a minimum level of coverage but would not satisfy the total requirement.

Mine Countermeasures and Diving Support Force

1.20 The requirement is to protect New Zealand's seven major ports through: the development of safe routes into them; the maintenance of a route survey database; by developing a capacity to dispose of mines and other explosives underwater; and by practicing the skills necessary to lead merchant ships through cleared access routes into the ports. The Review has concluded that the mine countermeasures role should be retained for three reasons. First, New Zealand is vulnerable to mining of its harbours and shipping lanes (laying mines is a cheap and relatively unsophisticated capability). Second, the lead time for developing a mine countermeasures capability is longer than the lead time for an aggressor to develop a mine-laying capability. Third, it would take 2-3 years to redevelop the existing database of mine-like objects along safe routes if the surveys were allowed to lapse. This capability is provided by the diving

support unit, the diving tender *Manawanui* and four of the IPCs. The latter are manned and operated by the RNZNVR and located in the major ports throughout New Zealand. As mentioned above, these vessels would still be required to undertake mine countermeasures tasks if they were modified and utilised to undertake inshore patrol duties.

Other Issues

Management Of Maritime Patrol Resources

1.21 All of those agencies involved in the review acknowledge that management and tasking of air and surface assets will be critical to the success of maritime patrol in the EEZ. The Maritime Coordination Centre, currently under consideration by an interdepartmental working group, will meet this need.

Ice-Strengthening

1.22 The Navy does not currently have the capability to conduct surface patrols in the Southern Ocean below about 65 degrees south. There is a requirement for patrolling in the deep Southern Ocean (below 65 degrees) and in the Ross Sea, both to provide a New Zealand presence and to meet our obligations under the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). An ice-strengthened ship is needed to meet this requirement. It may be possible to ice-strengthen either the MRV or one or more OPVs. Advice will be sought from industry as to which is the most appropriate and cost effective vessel type for ice-strengthening.

Helicopter Capability

1.23 A helicopter, such as the Seasprite with its sensor suite, extends the surveillance range of a surface vessel up to twelve times. Given the vastness of our EEZ, this enables fewer vessels to cover a larger area. Helicopters operating from the MRV and/or OPVs would provide an additional means by which to board vessels of interest and rescue/evacuate people when sea conditions preclude the use of RHIBs, and would meet the DoC requirement for resupply of offshore bases. The long duration of patrols in distant parts of the New Zealand EEZ and the distances involved in some resupply tasks will require a basic hangar to prevent damage to the helicopter caused by sustained exposure to sea spray. Industry will be consulted as to how to best find an affordable and viable solution to this requirement. The need for helicopters will be met by the recently acquired fleet of five Seasprite maritime helicopters.

Naval Control of Shipping

1.24 This role was not considered during the review because whether or not this capability is retained will not have an impact on the size and composition of the Navy fleet.

Gap Analysis

1.25 While the addition of a MRV and a patrol force will substantially add to the Navy's ability to meet maritime patrol requirements, there are some civilian tasks and

capabilities that would not be met by this fleet mix. These include towage/salvage of large vessels, close inshore search and rescue (0-3nm), and response activity for Customs and MFish.

Costs

1.26 An important consideration in terms of the type of MRV and the mix of patrol vessels is the financial costs associated with acquisition. Financial issues include not only the initial purchase, but also the impact of the acquisition on the NZDF's operating costs, any associated infrastructure costs, and any additional costs of developing new skill groups.

1.27 The NZDF's draft Long Term Development Plan (LTDP) has included a provision of NZ\$500 million for capital acquisition to meet this requirement. The operating costs must be affordable within the NZDF baseline. The proposal for acquisition will need to be a 'design to cost' approach to fit within these parameters.

Timing Issues and Priorities

1.28 The two key issues are the urgency of filling the gap in meeting the civilian agency patrol requirements around New Zealand and bringing into service a MRV to replace *Canterbury* when she is retired in 2005. Given the demand and priority accorded by the civilian agencies to the inshore patrol tasks, meeting these requirements should be pursued ahead of offshore patrol capabilities.

1.29 Planning the entry into service of a MRV on the retirement of *Canterbury* is sensible for a number of reasons. First, the MRV is needed to meet the Navy's training requirement for sustaining sufficient personnel to operate other naval vessels. Second, the tactical sealift requirement of the MRV is part of the Government's core requirement for a modernized land force that can be deployed to where it is required. Third, a MRV will be the most capable vessel and have utility across the range of military and civilian requirements.

Next Steps

1.30 It is intended that a set of output based statements to meet both the MRV and patrol requirements be prepared by the Ministry of Defence (MoD), in consultation with the Defence Force and civilian agencies, to identify the functions that potential vessels must perform and the standards and conditions to which those functions are required to be performed. It is proposed that these functional statements be provided to industry to allow for a range of alternative vessel options and acquisition strategies to be developed that can be acquired within the set financial limitation. Following the identification of feasible options, the MoD will report back to Government with specific proposals to proceed to acquisition.

1.31 To ensure that there is no loss in training capability within the Navy, a smooth transition from *Canterbury* to the MRV will be necessary. The planning process for this replacement will require a realistic timetable for any build or modification programme.

2. POLICY REQUIREMENTS

2.1 The Government's policy requirements of the Navy are based on three major policy statements that clearly set out the roles and tasks for New Zealand's naval fleet.

- *The Government's Defence Policy Framework*, June 2000.
- *New Zealand's Foreign and Security Policy Challenges*, Ministry of Foreign Affairs and Trade, June 2000.
- *A Modern, Sustainable Defence Force Matched to New Zealand's Needs*, 8 May 2001.

2.2 These requirements set out the need for a practical Navy with ships and people that can:

- Conduct maritime surveillance in the New Zealand EEZ, Southern Ocean and South Pacific, in conjunction with maritime air patrol assets;
- Carry out tasks such as search and rescue and disaster relief;
- Deter illegal activity around New Zealand, in the Southern Ocean and the South Pacific, and enforce national and international law if necessary;
- Be interoperable with the Australian Defence Force, able to meet our alliance commitments with Australia, and contribute to our shared security interests;
- Contribute to development assistance activity in the South Pacific;
- Conduct crisis response operations in the South Pacific, including humanitarian and disaster relief operations, peacekeeping and evacuations of New Zealanders and other expatriates;
- Meet our FPDA obligations;
- Contribute to UN and other multilateral peace support operations. This means the Navy must be trained and equipped for combat and be able to support land force operations; and
- Provide a physical demonstration of New Zealand's commitment to regional and global security through ship visits, training and exercises with other countries.

2.3 New Zealand's strategic environment is such that there is no obvious direct military threat to New Zealand. But there is growing pressure from non-traditional threats, especially in New Zealand's maritime environment, including the Southern Ocean. As a nation dependent on trade, New Zealand needs to be able to respond to those threats. It needs to be able to support its objectives for a stable and prosperous South Pacific, to work closely with Australia, to participate appropriately in Southeast Asia, particularly the FPDA and to be able to take part in UN and other multinational peace support operations. Ship visits, training and exercises are an important element in consolidating existing defence relationships and developing new ones. Through the presence and engagement of New Zealand's maritime assets including ship visits a range of non-military national interests are served, and relationships are reinforced in ways that have real practical benefits.

3. SHAPING FACTORS

3.1 There are a number of factors that shape the way in which these policy requirements are delivered. These key shaping factors can be summarised as follows:

- New Zealand needs vessels that are of adequate length and displacement to operate effectively and safely in New Zealand's extreme maritime environment. Vessels also need the range, endurance, and on-board capabilities to perform their roles in New Zealand's extensive maritime area of interest.
- In the inshore zone of the EEZ, vessels need the capability to operate in conditions up to and including Sea State 4. (See Table 1 for an explanation of Sea State conditions.) To operate year round in the offshore zone of the EEZ, vessels need the capability to operate in conditions up to and including Sea State 6. In the Southern Ocean, sea states can exceed Sea State 8.
- Given the vastness of the maritime area around New Zealand and in the Southern Ocean it is desirable to operate a helicopter to extend the surveillance range of the vessel.
- Vessels need to be interoperable with New Zealand civilian agencies, other NZDF elements and regional defence partners.
- Emerging security challenges in the South Pacific, such as illegal fishing and transnational crime, as well as ongoing communal tensions, particularly in Melanesia, are likely to result in increasing demands for RNZN vessels to conduct presence and response operations.
- The vessels that New Zealand deploys to regional and global operations will need to keep pace with advances in technology, particularly in terms of self-protection and interoperability. Maintaining the capability of the ANZAC frigates will be a future requirement.
- Contributing to peace support operations will require naval forces that are trained and equipped for combat. There will be a growing demand for vessels to support land forces in a littoral environment, including provision of: sealift; fire support; command, control and communications; and logistic support.

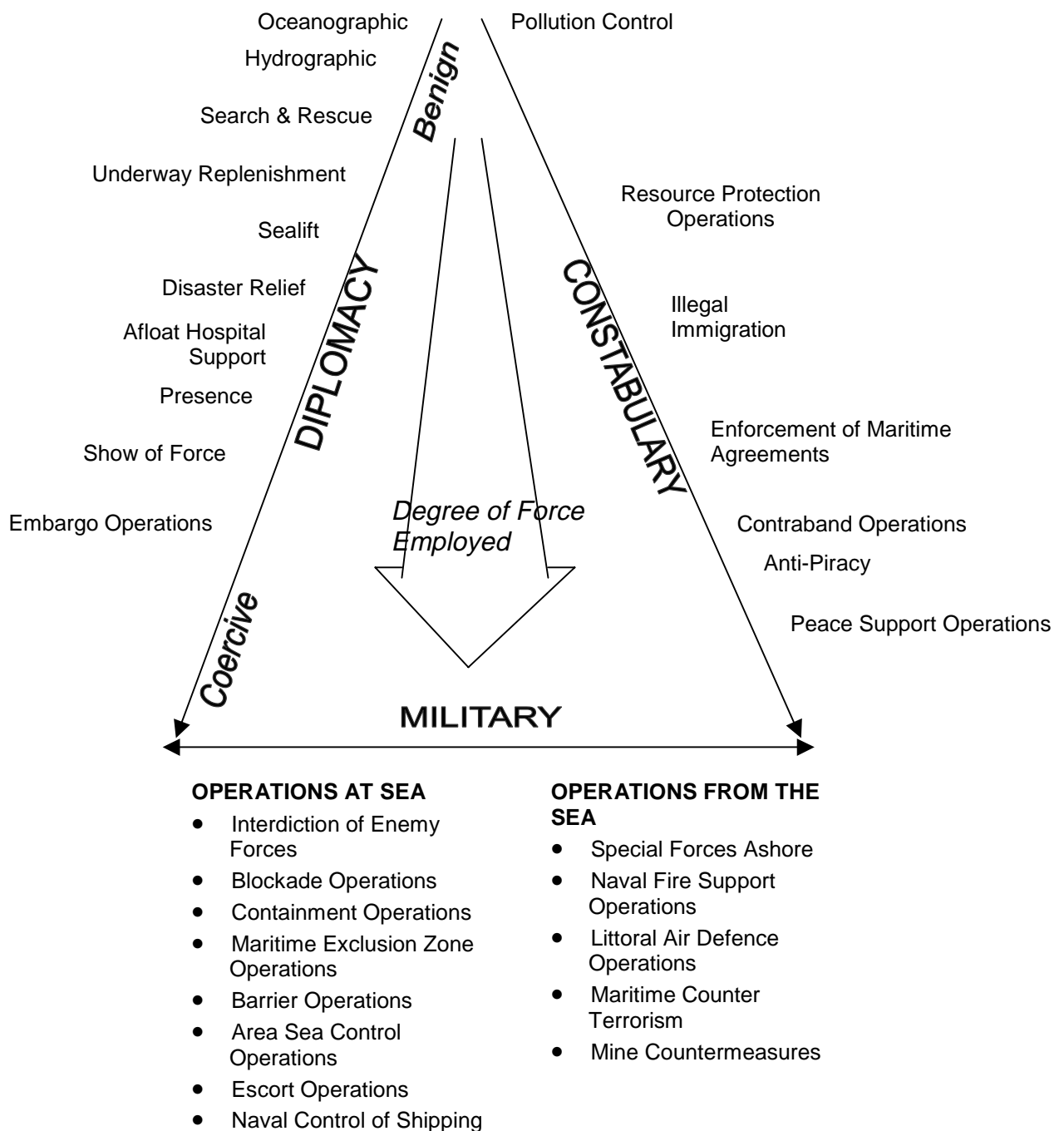
Table 1: Sea State Conditions

Sea State	Mean Wave Height (metres)	Mean Wind State (knots)	Description
0 – 1	0	3	Calm-glassy to calm-rippled
2	0.3	9	Smooth wavelets
3	1	14	Slight
4	2	19	Moderate
5	3	25	Rough
6	5	38	Very Rough
7	8	52	High
8	12	60	Very High
9	>14	>63	Phenomenal

4. REQUIREMENTS OF THE NAVY

4.1 The policy requirements, shaping factors and direction provided by the Government's 8 May statement define a set of roles applicable to the RNZN. Figure 1 illustrates that the roles required of the Navy range from diplomatic and constabulary (or civilian) to military roles. The ability to undertake constabulary and diplomatic roles is built upon the skills and capability inherent in the military roles.

Figure 1: The Span of Maritime Roles



MILITARY REQUIREMENTS

4.2 The military roles are currently met by the RNZN's fleet of three surface combatants, fleet tanker, diving support vessel, five inshore patrol craft, hydrographic survey and oceanographic research ship, and a small training vessel. Those roles are expanded below.

4.3 **Naval Combat Roles**

4.3.1 The naval combat force (*Te Kaha*, *Te Mana* and *Canterbury*), with embarked Seasprite helicopters, supported by the fleet tanker (*Endeavour*), currently fulfils the military or combat related roles that are required of the RNZN.

4.3.2 These roles include operations at sea, and from the sea in support of land operations, as well as a number of diplomatic and constabulary roles.

4.3.3 Recent operations in which the naval combat force has been involved include:

- Enforcement of UN sanctions against Iraq – *Wellington* (1995), *Canterbury* (1996) and *Te Kaha* (1999).
- Escort and sea control operations around East Timor (1999-2000) – *Te Kaha*, *Canterbury* and *Endeavour*.

4.4 **Presence**

4.4.1 Presence is the exercise of naval diplomacy in a general way involving port visits, exercising and routine deterrence operations in areas of interest. These activities declare New Zealand's interest and reassure friends and neighbours. The presence of a naval vessel in an area may be the primary symbol of national commitment.

4.4.2 In the New Zealand EEZ, fisheries and border protection activities by naval vessels also contribute to presence.

4.4.3 Regionally and globally, participation in joint exercises (for example, FPDA), ship visits and training with other navies signals New Zealand's commitment to shared security interests.

4.4.4 The ability to project a symbolic military presence into the Southern Ocean and Ross Sea is desirable for maintenance of New Zealand's claim over the Ross Dependency and would increase in future if New Zealand asserted its claim.

4.5 **Mine Countermeasures (MCM) and Clearance Diving Support**

4.5.1 MCM are operations relating to the prevention or reduction of damage or danger from sea mines.

4.5.2 The Navy's MCM capability is delivered by the four IPCs (*Hinau*, *Kiwi*, *Moa*, *Wakakura*), the Operational Diving Team and the diving support vessel *Manawanui*.

4.5.3 The focus of activity is on protecting New Zealand's seven major ports through: the development of safe (or Q) routes into them; maintaining a

database of mine-like objects along Q routes; by developing a capacity to dispose of mines and other explosives underwater; and by practising the skills necessary to lead merchant ships through cleared access routes into the ports.

4.5.4 There are three reasons to retain an MCM capability:

- New Zealand is vulnerable to mining of its harbours and shipping lanes (laying mines is a cheap and relatively unsophisticated capability);
- Longer lead times in developing an MCM capability compared to lead times for an aggressor to develop a mine-laying capability; and
- It would take 2-3 years to redevelop a database of mine-like objects along Q routes if the surveys were allowed to lapse.

4.6 *Naval Control of Shipping (NCS)*

4.6.1 NCS is control by naval authorities of the movement, routing, reporting and organisation of allied shipping in periods of crisis or conflict.

4.6.2 In peacetime, participation by merchant vessels is voluntary.

4.6.3 Whether or not a NCS capability is retained will not have an impact on the size and composition of the Navy fleet. The retention of a NCS capability was addressed by the Review and further work is required in this area.

4.7 *Maritime Counter Terrorism*

4.7.1 Maritime Counter Terrorism consists of measures to prevent, deter and respond to acts of terrorism in the maritime environment. The requirement is for the transport and deployment of counter terrorism forces either by a boarding party (via RHIBs) or by helicopter.

4.7.2 There is a requirement for this capability in New Zealand and the South Pacific. Apart from the naval combat force, no capacity currently exists for this requirement. The naval combat force will not always be in a position to respond if most of its assets are away on other tasks.

4.8 *Tactical Sealift and Logistic Support for Land Forces*

4.8.1 The tactical sealift requirement is for the transport of people and equipment into a theatre of operations so that they will be able to operate effectively once ashore. There is also a requirement to support these forces ashore for a period of up to 30 days. Given the limitations in port facilities in the South Pacific and parts of Southeast Asia, there is a requirement to be able to off-load people and equipment across the beach.

4.8.2 A sealift capability is also required for disaster relief and humanitarian operations.

4.8.3 In the past, New Zealand has relied on coalition partners to provide this capability, in particular France and Australia. The increasingly fragile security situation in the South Pacific will likely drive an increase in concurrent operations such as peace support, humanitarian assistance and evacuations.

New Zealand will need an independent capability to conduct these types of operations. Growing demands on the naval assets of other countries make it increasingly likely that they would be unable to meet our needs. Reliance on other countries could also significantly slow down response times for military and civilian emergencies.

CIVILIAN AGENCY REQUIREMENTS

The Interaction of Surface and Aerial Patrol

4.9 The civilian agencies' requirements for surface patrol are complemented by aerial patrol. Aerial and surface surveillance, in conjunction with other intelligence, can provide a relatively comprehensive picture of activity in the EEZ. Aircraft are the most cost-effective method of providing maritime surveillance over a large area. A maritime patrol aircraft can cover large areas of ocean in a short period of time and gain a relatively accurate picture of activity. They can gather information on illegal activity, such as vessels fishing in a closed area. That information can then be used as the basis of a prosecution. There are plans to upgrade the surveillance capability of the Orions to enhance their ability to meet both military and civilian requirements for aerial patrol. There is also a study into the options for meeting short-medium range air patrol requirements.

4.10 Surface vessels are able to maintain a physical presence that aircraft cannot. This presence serves to deter would-be offenders and demonstrate New Zealand's will to protect its territorial sovereignty and natural resources. Naval vessels also provide the capability to board, inspect and arrest or conduct hot pursuit of offending vessels that may be engaged in illegal or unregulated activities that are not identifiable from the air, or that have been identified by an aircraft and require a response.

Civilian Agency Requirements

4.11 The *Maritime Patrol Review* identified that there was very little routine surveillance undertaken around New Zealand and that RNZN vessels were not appropriately configured for this work. It recommended that a capacity for surface surveillance be developed. In order to identify more precisely the civilian agencies' requirements for surface patrol, the Maritime Forces Review team conducted a consultation process. This process had two objectives: to identify the type(s) of vessels that would be required to meet the surface surveillance requirement; and to identify the number of vessels that would be needed to meet the requirement.

4.12 The Review team discussed the specific requirements of each agency with them in order to identify the number of sea days that would be needed to meet their requirement. This is summarised in Table 2. Each agency was also asked to prioritise their requirements from 1 (being the highest) to 3 (See Table 3). The priority ratings assigned to each patrol reflected the risk if the patrol was not carried out.

4.13 During the course of the consultation process there were many important issues raised that went beyond the narrow focus of this review. Some were related to the division of responsibilities between the NZDF and civilian agencies and the accountability framework that will be required. Others dealt with the legal aspects of RNZN vessels undertaking some civilian law enforcement functions. Resolving these

issues is the responsibility of ODESC (M) which has a programme of work in progress to do so. The result of this work will need to be taken into account when decisions are taken on the outcome of this review.

Two Types Of Surface Patrol – Programmed And Response

4.14 Surface patrols can be divided into two categories: programmed, and response. Programmed patrols are conducted to provide surveillance and monitoring over a particular area and to detect offences that cannot be detected by aerial patrol. They also deter illegal activity and provide a sustained physical presence. Programmed patrols require the ability to monitor large areas and to respond rapidly to indications of an offence.

4.15 Response patrols occur in response to an indication that an offence is occurring. They are often the result of a programmed aerial or surface patrol, and depend on rapid action to respond to offences or to stop fleeing vessels.

4.16 Both programmed and response patrols require the boarding of vessels to search for and seize evidence, and may lead to detainment, arrest, escort and hot pursuit.

Fisheries Protection

REQUIREMENT: Conduct programmed and response patrols throughout the New Zealand EEZ, in the Southern Ocean/Ross Sea, and in the South Pacific.

4.17 The tasks required include surveillance, monitoring, boarding and inspection of vessels, arrest, and hot pursuit of vessels beyond the EEZ. There is also a requirement to embark fisheries officers.

4.18 The primary agency is MFish. DoC and MAF also have fisheries protection requirements. New Zealand's international obligations lead to a requirement for patrols in the Southern Ocean and South Pacific.

4.19 MFish and DoC both own very small patrol vessels for close inshore work. MFish have a surface patrol requirement for 520 days of priority one and 500 days of priority two and three patrols that they are unable to meet themselves. They require the Navy to meet the priority one tasks, and as many of the priority two and three tasks as possible.

4.20 There is a patrolling requirement in most areas of the EEZ. High levels of activity are the east coast of the North Island, the Cook Strait/Marlborough Sounds/Wairarapa coast, the west and southern coasts of the South Island and Stewart Island, the Chatham Rise and the sub-Antarctic area of the EEZ.

4.21 Over half of the total requirement is between 0-12nm of New Zealand's shoreline and over half of the total requirement is priority 1.

4.22 Tasks in the northern half of the EEZ are almost all inshore and tasks in the southern half of the EEZ are mostly offshore. The southern half of the EEZ also experiences the most extreme sea states, requiring a larger patrol vessel than may be necessary in the northern area.

4.23 The level of activity in the north remains relatively constant during the year. Activity almost doubles in the south during winter, coinciding with the worst sea states.

Border Protection

REQUIREMENT: Conduct programmed and response patrols throughout the New Zealand EEZ, primarily from 0-24nm, and in the South Pacific.

4.24 Tasks required include surveillance, monitoring, boarding, finding and retrieving items from the sea floor, and hot pursuit of vessels. There is a requirement to embark Customs officers.

4.25 The primary agency is the New Zealand Customs Service.

4.26 Customs have a requirement for 900 surface patrol days that they intend to meet themselves. They require the Navy to deliver an additional 360 days. This includes:

- Supplementing Customs operations during high-risk periods in high-intensity areas - Kapiti Coast/Marlborough Sounds/Tasman Bay and Coromandel/Great Barrier Island/North Cape triangle - and providing a presence outside these areas;
- Operating in extreme weather conditions when Customs vessels cannot;
- Providing a surge capacity for response operations; and
- Providing offshore surveillance to detect potential violations of New Zealand law or monitor vessels of interest.

Conservation Support

REQUIREMENT: Conduct programmed and response patrols in the New Zealand EEZ and provide transport for personnel/supplies to remote DoC bases.

4.27 Tasks required include surveillance, monitoring, boarding vessels, observing and recording marine species, transport, and hot pursuit of vessels.

4.28 The primary agencies are DoC and MAF.

4.29 The aim of this activity is to protect New Zealand's biosecurity and biodiversity by preventing the introduction of species and the export/extinction of native species.

4.30 The inshore requirements to patrol marine reserves and protected areas are covered by patrols for MFish.

4.31 The requirement to detect vessels that may pose a biosecurity risk to New Zealand is covered by patrols for Customs.

4.32 The offshore requirement is for patrols around remote islands and reserves, and for transport of personnel and supplies to remote DoC bases such as Raoul Island and the sub-Antarctic.

Search and Rescue (SAR)**REQUIREMENT: Conduct search and rescue operations in the New Zealand and Nadi Flight Information Regions as required.**

4.33 New Zealand has responsibility to coordinate SAR operations in the New Zealand and Nadi regions - 4.5 million nm². This includes the Southern Ocean and Ross Sea. The agencies with responsibility for the coordination of maritime SAR are the Police and the National Rescue Coordination Centre (NRCC).

4.34 All Navy vessels would respond to any SAR incident if they were available in the area of the incident.

4.35 Most SAR incidents, around 500 each year, occur within 3nm of the coast. Responding to these incidents requires a large number of small craft deployed around New Zealand. The Police coordinate the majority of these rescues using resources from a number of groups, primarily the Coastguard.

4.36 The MSA has expressed some concerns to the Review team about the current service provision of this close-inshore SAR service. The major concern is with the uncertain future viability of the Coastguard, a volunteer organization which funds itself by a combination of grants and public donations. The MSA feels that dedicated, small fast inshore craft crewed by professionals would offer a credible alternative that would put New Zealand on a par with other countries with whom we might wish to be compared.

4.37 The operation of these kinds of vessels in this role, or taking over responsibility for inshore SAR, is not considered by the Review team to be an appropriate role for the Navy. The problem is more one of appropriately funding existing service providers. The concern of MSA is that, if the Navy are unable to provide or supplement this service, and given the uncertain future viability of the Coastguard, then funding must be provided to the Coastguard or an appropriate body tasked with the responsibility of providing inshore SAR on a national level.

Towage and Salvage**REQUIREMENT: Provide towage and salvage response to disabled vessels.**

4.38 The MSA has a requirement for towage facilities to be available around the coast of New Zealand to respond to those incidents where vessels are disabled and at risk of being driven ashore.

4.39 Cases resulting from a vessel grounding and involving oil spill clean up are rare in New Zealand; however, MSA operational experience suggests that there is at least one incident experienced each year involving a disabled ship requiring assistance. The consequences of a vessel not having assistance available and going aground would be catastrophic and would require the mobilisation of national resources to counter potentially devastating environmental damage.

4.40 Towage vessels currently operated by port companies have some existing capacity for this task, but these vessels are being replaced by less capable tugs designed to operate only within harbour limits and with minimum personnel. These

decisions by port companies are being driven by commercial and economic considerations.

4.41 While all Navy vessels have a towage capacity, especially for smaller vessels, the propulsion characteristics of a frigate mean that it would not be sufficient to render assistance and prevent a disabled large bulk carrier or tanker from being driven ashore. MSA has submitted that specialist vessels, such as tugs or supply vessels capable of operating in the coastal environment and able to provide assistance in an emergency situation, are required to cater for this need.

4.42 Large sea-going tug capacity is available with approximately five days notice from the east coast of Australia, but there is a risk that major environmental damage could have occurred in the interim. One option for addressing this potential shortfall would be for the Government to subsidise port companies to acquire, operate and maintain tugs with the required towage capacity. In addition, specially modified naval vessels, particularly the proposed MRV, would be able to provide some assistance in holding a disabled vessel in place, dependent upon the circumstances and their availability, until external assistance arrived to complete the operation.

Pollution Control

REQUIREMENT: Detect and respond to oil spill incidents at sea in the New Zealand EEZ and the South Pacific.

4.43 MSA is the primary agency for marine pollution control. DoC also have pollution control requirements.

4.44 The requirement for pollution control is in the EEZ and the South Pacific. New Zealand may be required to participate in pollution control in the Southern Ocean and the Ross Sea.

4.45 Of approximately 160 oil spill incidents each year, almost all are dealt with by the offender or the regional council.

4.46 The requirement for the Navy is to respond to those cases that require the mobilisation of national resources

4.47 MSA own oil spill response equipment and there may be a requirement for the Navy to transport this equipment on an "as required" basis, including domestically, and to the Antarctic and South Pacific regions.

4.48 Deployment can also be achieved by C-130 if an airfield is nearby; however considering the remoteness of such locations, and the need for delivery to the actual location, air response windows are considered to be limited.

4.49 There is also a requirement to conduct fast response hydrographic work in the event of a vessel sinking near the coast, particularly to locate a wreck which may contain marine oil bunkers to enable recovery operations to be conducted. Hydrography is the subject of a separate review.

Support to the Police

REQUIREMENT: Provide vessels on an as-required basis for maritime emergencies or support to police investigations.

4.50 Tasks include search and rescue, providing surface patrol support for police investigations, and obstacle discovery and retrieval.

4.51 These requirements cannot be predicted but rely on the same capabilities used for other tasks in the EEZ.

Total Civilian Agency Requirement

4.52 Consultation with civilian agencies identified that, with multi-tasking, approximately 1371 surface patrol days were required to meet their collective patrol requirements in the EEZ. Most response patrols are met by the capacity to undertake programmed tasks. Analysis determined that, with multi-crewing, seven additional vessels would be required to meet the full requirement. Four additional vessels would be required just to meet the priority one requirements.

4.53 The requirements are shown on Tables 2 and 3.

Table 2: Non-Military Task Requirements Of The Navy

Role	Principal Agency (s)	Planned/ Response	Full requirement (days)	% of total
EEZ, Southern Ocean and South Pacific Patrols	Fisheries, DoC, MAF, MFAT, Customs, NZDF, Police	Planned/ Response	1279	93.2
Sealift (Civilian)	DoC, MFAT	Planned	45	3.3
Pollution Control	MSA, DoC	Response	20	1.5
Disaster Relief	NZDF, MFAT	Response	15	1.1
Search & Rescue	NRCC, Police	Response	12	0.9
Total			1,371	100%

(Please note that the numbers in this table reflect the multi-tasking assumptions applied by the Review team to requirements provided by departments. This has meant that EEZ patrols include tasks for a number of agencies. This accounts for the variation in days between those provided by individual departments, and the data that appears in the table.)

Table 3: Tasks by Priority

Task	Full Requirement (Days)	% of Total Requirement
Priority 1 Tasks	867	63.2%
Priority 2 Tasks	392	28.6%
Priority 3 Tasks	112	8.2%
Total	1,371	100%

5. GAP ANALYSIS

Table 4: Extent To Which The Policy Requirements Are Currently Met By The RNZN

	Inshore	Offshore	Southern Ocean	South Pacific	Regional/ Global
Fisheries Protection	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Border Protection	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Conservation Support	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Offshore SAR	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Presence	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Inshore SAR, towage, salvage	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Pollution Control	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Support to the Police	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
MCM and Clearance Diving	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
NCS	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Maritime Counter Terrorism	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Tactical Sealift	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Logistic Support for Land Forces	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Disaster Relief	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement
Military Roles	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement	Not a policy requirement

Key:

Policy requirements not currently met	Not a policy requirement	Limited coverage	Not a policy requirement
Currently met	Not a policy requirement	Not a policy requirement	Not a policy requirement

5.1 Gap analysis has identified where the current fleet does not have the capacity or capability to meet the military and civilian requirements (See Table 4). With the exceptions of sealift and towage, the Navy has the **capability** to meet all of these requirements, but not the necessary **capacity**. The Navy can meet some response patrol requirements if a vessel is available, for example, *Manawanui's* recent arrest of a fishing vessel in Cook Strait. The Navy does not, however, have the capacity to meet programmed requirements, which are the majority of requirements. It should be noted that there is some capacity in other agencies to meet inshore requirements to a limited extent.

5.2 It is clear from Table 4 that there are some requirements that the RNZN has limited or no ability to meet. These gaps can be identified on a geographic basis.

Global/Regional

5.3 In 2005 *Canterbury* will be decommissioned leaving two surface combatants to fulfil the required combat related roles. With two frigates the RNZN will be unable to sustain a continuous commitment of one ship to operations in the Asia Pacific or globally. A sustained commitment requires the ship on station to be replaced by another with a crew that is fully trained. The routine maintenance requirements and limited training capacity of the ANZAC frigates do not allow sufficient people to be trained so that a deployment can be sustained beyond six months. Other vessels, such as a MRV or an OPV, would be capable of conducting generic operator/maintainer training. Combat training, however, can only be done in combat capable ships. Because of the need for on-going training to sustain the capability, with a naval combat force of only two frigates, one ship will be available for only six months in every twelve month period.

5.4 One of New Zealand's most visible contributions to regional security is participation in FPDA exercises. With the disbanding of the Air Combat Force, New Zealand's participation in FPDA exercises will be reliant on the naval combat force, *Endeavour* and maritime patrol aircraft. These assets will need to maintain their level of interoperability and current levels of capability to remain relevant. With only two frigates there will be an increased risk that priority tasking will preclude naval combat force participation in these exercises.

South Pacific

5.5 The absence of a tactical sealift capability and limited port facilities in the South Pacific limit the extent to which New Zealand can presently assist with operations such as disaster relief, evacuations of New Zealanders and peacekeeping initiatives. The outlook in Melanesia suggests that over the next thirty years there will be further calls on maritime forces in support of peacekeeping, and that they will need to provide: helicopter support; an across the beach capability; command, control, communications and intelligence gathering functions; storage and resupply facilities; a medical facility; and logistic support for New Zealand troops. The sealift requirement that is not being met also includes the transport of oil spill response equipment to the South Pacific. This could be done by C-130 if an airfield is nearby; however considering the remoteness of such locations, and the need for delivery to the actual location, air response windows are considered to be limited.

5.6 At present, surveillance of Pacific Island countries' EEZs is carried out occasionally when New Zealand ships are visiting or transiting the region, but ships do not currently assist on a regular basis. There is a need for an enhanced presence, which would add to our existing support for Pacific Island countries through Overseas Development Assistance. New Zealand is a member of the Forum Fisheries Agency and has constitutional obligations for the Cook Islands, Niue and Tokelau, which rely on New Zealand support for maritime surveillance and fisheries protection. New Zealand also has responsibilities as a signatory to the Convention on Highly Migratory Species in the Central and Western Pacific.

Southern Ocean

5.7 The Navy does not have the capability to conduct surface patrols in the Southern Ocean below about 65 degrees south. There is a requirement for patrolling in the deep Southern Ocean (below 65 degrees) and in the Ross Sea, to provide both a New Zealand presence and to meet our obligations under the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). An ice-strengthened ship is needed to meet this requirement.

New Zealand EEZ – Inshore and Offshore

5.8 The gaps in the New Zealand inshore and offshore zones are in terms of capacity to meet the fisheries, border protection and conservation support roles. The Navy provides some support for these activities at present, such as offshore search and rescue, fisheries response patrols and carriage of people and supplies to offshore DoC bases. These activities are, however, limited by the availability of vessels in the EEZ.

5.9 There is a requirement for a vessel to be available for maritime counter terrorism tasking. The naval combat force is capable of meeting this requirement, however, it will not always be in a position to respond due to other commitments. Additional helicopter-capable vessels operating in the EEZ would mitigate this shortfall.

5.10 Another requirement that is not met is towage of large vessels. Inherent in the design of naval vessels is the ability to tow other vessels. There are, however, size limitations. Specialist vessels, such as tugs or supply vessels capable of operating in the coastal environment are required to provide assistance in emergency situations. They are not being replaced, however, leaving a future national capacity gap and risk of environmental damage from an oil spill in the event of a vessel becoming disabled and not having assistance available.

5.11 Close inshore SAR (0-3 nm) is not covered by the proposed fleet configuration. This service is currently provided by volunteer organisations, however there is concern for the future viability of Coastguard and the need for a national service provider with dedicated funding.

6. CAPABILITY REQUIREMENTS TO MEET POLICY GAPS

6.1 In order to determine how best to fill the gaps identified above, the capabilities required to meet task demands were defined. It was determined that these capabilities can be embodied in three types of vessel. The capability requirements for an Inshore Patrol Vessel (IPV), an Offshore Patrol Vessel (OPV) and a Multi-Role Vessel (MRV) are summarised in Table 5 and expanded below.

Table 5: Capabilities Required To Meet Gaps In Delivery Of Government Policy Requirements

	IPV	OPV	MRV
Max speed	20-24kts	20-24kts	20-24kts
Cruise speed	13-16kts	13-16kts	10-13kts
Endurance/Range	1 week/2,000nm	3 weeks/2-4,000nm	4 weeks/6,000nm
Seakeeping	Up to and including SS4	Up to and including SS6	Up to and including SS8
Helicopter capability	Replenishment/ winching (no deck)	Helicopter deck for operations up to SS5	Embark 1 Seasprite and operate 2 utility helicopters or 1 heavy helicopter up to SS5
Boats	2xRHIB deployable up to and including SS4	2xRHIB deployable up to and including SS4	2xRHIB deployable up to and including SS4. Lighters or mexeflotes for ship to shore movement
Air/surface radar	Range to 24nm for surface contacts and interaction with aircraft	Range to 24nm for surface contacts and interaction with aircraft	Range to 24nm for surface contacts and interaction with aircraft
Command & control	Non-integrated, able to receive Common Operational Picture and conduct secure communications	Non-integrated, able to receive Common Operational Picture and conduct secure communications	Non-integrated, able to receive Common Operational Picture and Tactical Data Link, and conduct secure communications
Manoeuvrability	No special requirement	No special requirement	Must be able to berth without tug support
Ice-strengthening	None	Required if tasking includes Southern Ocean / Ross Sea	Required if tasking includes Southern Ocean / Ross Sea
Lift capability	None	Limited	Transport and support an Army heavy company
Gun	Small (e.g. .50 cal)	40-76mm	40-76mm

Inshore Patrol Vessels

6.2 An IPV is essentially a large launch used primarily for surveillance activities and response or continuous presence in coastal waters. In accordance with their role, IPV's have a small crew, limited endurance and no helicopter capability, but are capable of relatively fast speeds. IPV's would perform inshore and coastal tasks, mainly for MFish and Customs. The relatively small size of IPV's would mean they would not normally perform tasks outside the coastal zone, although they would have some ability to do so in good weather conditions.

6.3 Vessels conducting operations in the inshore zone would not require the capability to operate a helicopter as aerial surveillance could be provided by fixed or rotary wing aircraft operating from the shore. The minimum level of helicopter capability for IPV's is to be able to embark Fisheries or Customs officers, which could be done by winching, and the ability to vertically replenish the vessel if necessary.

6.4 Financial constraints may limit the ability to acquire immediately both a MRV and all of the patrol force capabilities needed. Innovative and bridging solutions need to be investigated. Upgrading the Navy's existing fleet of five IPCs would provide a low cost solution for meeting the inshore requirement, although it would not satisfy the total requirement. The Navy's IPCs as presently configured are not ideally suited for the inshore patrol task, due largely to a significant speed limitation that cannot be improved (a maximum speed of 12.5 knots). Civilian agencies agree, however, that upgraded IPCs could provide a workable solution should financial constraints prevent the immediate acquisition of a more suitable capability. Upgrades would include improving seakeeping, enhancing communications and fitting a faster, more capable RHIB. The IPCs, in conjunction with the diving support vessel, *Manawanui*, would still be required to provide training and a mine countermeasures and clearance diving support capability. As further funds become available, the IPCs would progressively be replaced by specialist fast inshore patrol vessels.

Offshore Patrol Vessels

6.5 OPVs are vessels with the ability to operate for extended periods and undertake a range of tasks. An OPV is therefore more capable than an IPV. OPVs could perform both inshore and offshore tasks, although they provide a greater level of capability than is required for meeting inshore civilian tasks around the North Island. This does mean however, that they are able to conduct patrols that range between these two areas and beyond. They provide a higher level of flexibility for managing programmed and response tasks in both the inshore and offshore zones.

6.6 An OPV can contribute to tasks in the South Pacific such as providing a New Zealand presence and contributing to resource protection tasks. An OPV is also the desired platform for maritime counter-terrorism capabilities as it embodies the required characteristics of speed, helicopter capability and multiple RHIB launch.

Helicopter Capability

6.7 A helicopter, such as the Seasprite with its sensor suite, extends the surveillance range of a surface vessel up to twelve times. Given the vastness of our EEZ, this enables fewer vessels to cover a larger area. Helicopters operating from the

MRV and/or OPVs would provide an additional means by which to board vessels of interest and rescue/evacuate people when sea conditions preclude the use of RHIBs, and would meet the DoC requirement for resupply of offshore bases. The long duration of patrols in distant parts of the New Zealand EEZ and the distances involved in some resupply tasks will require a basic hangar to prevent damage to the helicopter caused by sustained exposure to sea spray. Industry will be consulted as to how to best find an affordable and viable solution to this requirement. The need for helicopters will be met by the recently acquired fleet of five Seasprite maritime helicopters.

6.8 There is no requirement for a helicopter to be permanently embarked on an OPV. It would be desirable, however, to temporarily embark a helicopter for specific operations. These would include maritime counter-terrorism and distant operations within and around New Zealand's EEZ, particularly in the southern zones. An embarked helicopter is required for efficient DoC resupply tasks if it is not possible to unload people and supplies by RHIB.

Multi-Role Vessel

6.9 In its 8 May statement the Government directed that a suitable MRV, with long distance and Southern Ocean capabilities, would replace *Canterbury* when she is retired in 2005. The Government also directed that a limited tactical sealift capability be investigated for operations such as disaster relief in the South Pacific. The MRV would also need to be able to carry out other tasks such as maritime patrol.

6.10 The military and civilian sealift requirement is for the transport of people and equipment into a theatre of operations so that they will be able to operate effectively once ashore. There is also a requirement to support and sustain this deployed group for a period of up to 30 days. The military requirement for sealift includes the transport of the Army's light armoured vehicles. This requirement will influence the type of MRV that is purchased. Given the limitations in port facilities in the South Pacific and parts of Southeast Asia, there is a requirement to be able to off-load people and equipment without access to a port facility.

6.11 The military requirement for sealift is driven by the smallest land force component that is operationally viable, which is a company group. Components of this lift will include personnel, vehicles, fuel, water, ammunition, spares and food. The civilian sealift requirement requires the ability to transport rebuilding equipment and materials and vehicles such as small bulldozers and utility vehicles.

Ice-strengthening

6.12 Tasks in the Southern Ocean and Ross Sea require an ice-strengthened vessel. It may be possible to ice-strengthen either the MRV or one or more OPVs. Advice from industry will be sought as to which is the most appropriate and cost-effective vessel for ice-strengthening.

6.13 Any ice-strengthened vessel would be reliant to a large extent, as the fishing vessels are, on an icebreaker operated by another country to gain access to the Ross Sea. An ice-strengthened MRV could operate in the Southern Ocean and Ross Sea during the summer months, and would be able to conduct Southern Ocean patrols

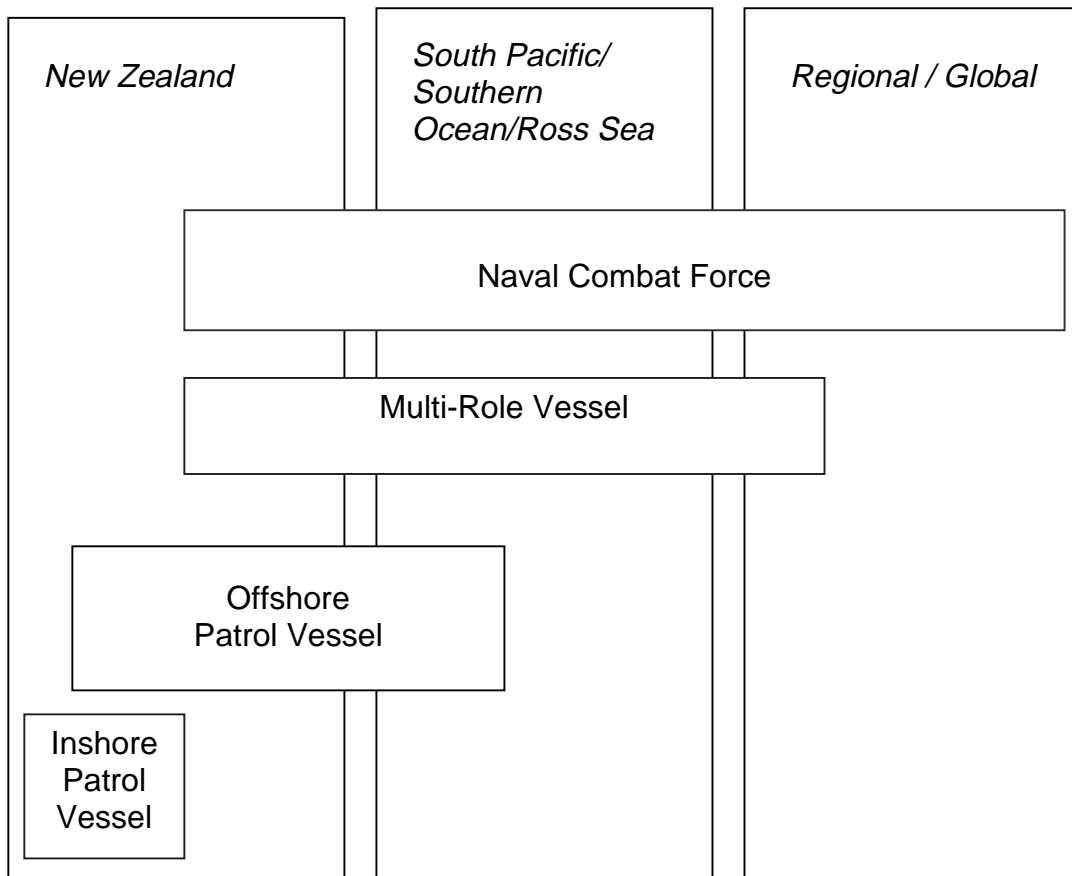
(north of the Ross Sea) for most of the year. There may be some cost and design limitations in this option, depending on the actual vessel chosen.

6.14 An ice-strengthened OPV would be able to operate in the Ross Sea and Southern Ocean during summer when the majority of tasks are required. It is unlikely to be able to operate in the Southern Ocean during winter, although the number of tasks required during this period would be minimal. An embarked helicopter is considered necessary for Southern Ocean patrols.

Utility of Vessel Options within the Geographic Zones

6.15 As highlighted above, the task requirements and physical environments are diverse and challenging. The result is a need for a mix of vessels able to provide depth of utility across the roles, and be fiscally sustainable. Figure two shows where inshore and offshore patrol vessels and the MRV would be used. It also demonstrates that the naval combat force would be used primarily for South Pacific, regional and global tasks.

Figure 2: Utility of Vessel Options within Geographic Zones



7. FLEET COMPOSITION OPTION FOR THE ROYAL NEW ZEALAND NAVY

7.1 The analysis of vessel types that will meet the policy gaps identified earlier in this paper led to the development of a fleet composition option to meet civilian and military requirements. This option is considered to be the minimum that is achievable within the \$500 million capital funding provision. Consultation with industry may reveal other more innovative options that are better able to meet the requirements.

7.2 In the process of drawing together military, foreign policy and civilian requirements, it became clear that meeting this extensive array of tasks in widely varied environmental conditions would require a Navy with five distinct elements: naval combat forces; naval support forces; naval patrol forces; and mine countermeasures and diving support forces. The need for a hydrographic survey capability is the subject of a separate review.

Naval Combat Force

7.3 A naval combat force is required to undertake the most demanding military tasks. These include the defence of New Zealand's territorial waters and EEZ, meeting our alliance commitment to Australia including in responding to South Pacific and Southern Ocean contingencies across a broad front, meeting our FPDA obligations and contributing to UN and other multilateral peace support operations. The naval combat force has a diplomatic and military role in demonstrating New Zealand's commitment to regional and global security through ship visits, training and exercises with other countries.

7.4 The Navy currently has a naval combat force of three frigates with embarked Seasprite maritime helicopters, and is supported by the naval support force. The naval combat force will be reduced to two frigates when *Canterbury* is taken out of service in 2005.

7.5 Because the ANZAC frigates have few training bunks, they need to spend considerable time on combat training tasks in order to maintain sufficient crew to provide an appropriate level of capability to meet operational requirements. This high training requirement, in addition to operational commitments and maintenance requirements, means that in a 12-month period, the Navy would be able to guarantee one frigate for operational tasking for no more than six months.

The Review has confirmed the retention of *Canterbury* (to 2005), the two ANZAC frigates, *Te Kaha* and *Te Mana*, and the tanker *Endeavour* to respond to the defence policy objectives associated with Australia, Asia-Pacific and global obligations. This fleet, however, would only be able to provide one frigate for such tasks for up to six months in any twelve-month period.

Naval Support Force

7.6 The naval support force provides two capabilities; underway replenishment of deployed forces and sealift. Underway replenishment is currently provided by the fleet tanker, *Endeavour*.

7.7 There is no capacity for sealift at present. Based on the findings of the 2000 Sealift Review, the Government determined that, given the infrequent need for sealift, the ability to charter commercial ships when required, and the lack of versatility for other tasks, the acquisition of a dedicated sealift ship would not be a wise investment. A better investment would be a MRV that can undertake a number of roles in our region, including a limited tactical sealift capacity for disaster relief; humanitarian relief operations; peace support operations; military support activities; and development assistance support in the South Pacific. It must also take over the training role currently performed by *Canterbury*. The MRV will be available to supplement the naval patrol force when not engaged on these roles.

The Review has confirmed the gap in tactical sealift capability. A MRV with the ability to offload personnel and equipment without access to a port is considered an appropriate configuration given the roles. The MRV is also required to contribute to civilian patrol tasks, humanitarian and disaster relief and military support operations.

Naval Patrol Force

7.8 Patrol capabilities are required to conduct maritime surveillance, in conjunction with maritime air patrol assets, in the New Zealand EEZ, to assist South Pacific Island states patrol their EEZs and in the Southern Ocean. Surface surveillance provided by the naval patrol force would complement aerial surveillance and other sources of information.

7.9 This Review, and consultation with civilian agencies, suggests that a mix of five small inshore patrol vessels for most of the inshore tasks and at least three capable OPVs, plus the MRV, for the offshore tasks would meet this requirement.

The Review has identified a significant capacity gap in the provision of inshore, offshore and South Pacific patrol. Additional capacity in the form of a mix of inshore and offshore patrol vessels will need to be acquired if this role is to be met. There is an option to reconfigure the existing IPCs although a speed capability gap will remain.

Mine Countermeasures and Diving Support Force

7.10 This capability is provided by the diving support unit, the diving tender, *Manawanui*, and four of the IPCs. The latter are manned and operated by the RNZNVR and located in the major ports throughout New Zealand. These vessels would still be required to undertake mine countermeasures tasks if they were modified and utilised to undertake inshore patrol duties.

The diving support vessel *Manawanui* is retained to perform clearance diving tasks and mine countermeasures. This is a full-time specialist role, and there is limited capacity to perform other roles. The four IPCs also contribute to the performance of this role.

8. IMPLICATIONS

PERSONNEL IMPLICATIONS

8.1 With an increase in fleet size, each of the options will provide challenges for managing personnel issues. Issues that need to be considered are recruitment, training, retention, maintaining adequate sea/shore ratios and the adoption of multi-crewing concepts to generate more sea-days for the patrol vessels. It is envisaged that retention would be improved by demonstrating a national commitment to a practical navy, providing more variety, reducing training bottlenecks and giving younger officers and senior ratings earlier opportunities to take up command and management positions.

8.2 The fleet composition option is based on a multi-crew concept in order to generate 200-220 sea days a year from new vessels. This assumes that the RNZN has, or can develop, a capacity to recruit, train and retain additional personnel. The RNZN's ability to achieve this will be examined in more detail in the next phase of the review when actual vessels are selected.

SUPPORT IMPLICATIONS

8.3 The introduction of additional vessels will raise logistic support issues. These include planned and unprogrammed maintenance requirements, the support strategy adopted, and the types of systems and equipment installed. Ensuring that new vessels have as much equipment commonality as possible with existing vessels could significantly mitigate the risks associated with these issues. A mix of OPVs and IPVs would present greater support issues than introduction of a single type of patrol vessel.

FINANCIAL IMPLICATIONS

8.4 Financial issues include the impact of acquisition and operating costs on the NZDF, and the total capital acquisition budget available against all other defence capital requirements for expenditure on naval acquisitions.

8.5 The NZDF's draft Long Term Development Plan (LTDP) has included provisions of \$500 million for capital acquisition to meet this requirement. The operating costs must be affordable within the NZDF baseline. The proposal for acquisition must be a 'design to cost' approach to fit within these parameters.

8.6 The NZDF operating baselines have been set until FY 05/06 which coincides with the planned retirement of *Canterbury*. The fleet structure proposed by this Review will have no impact on baselines until after that time. Subsequently, it is expected that it may be possible to meet the direct operating and personnel costs of the new vessels from within current funding once *Canterbury* is taken out of service. The introduction into service of \$500 million of new capital equipment, however, has the potential to increase depreciation expenses by about \$10 million annually. The NZDF is unlikely to be able to manage this within current baselines.

9. THE WAY AHEAD

Timings and Priorities

9.1 The two key issues are the urgency of filling the gap in meeting the civilian agency patrol requirements around New Zealand and bringing into service a MRV to replace *Canterbury* when she is retired in 2005. Given the demand and priority accorded by the civilian agencies to the inshore patrol tasks, meeting these requirements should be pursued ahead of offshore patrol capabilities.

9.2 Planning the entry into service of a MRV on the retirement of *Canterbury* is sensible for a number of reasons. First, the MRV is needed to meet the Navy's training requirement for sustaining sufficient personnel to operate other naval vessels. Second, the tactical sealift requirement of the MRV is part of the Government's core requirement for a modernized land force that can be deployed to where it is required. Third, a MRV will be the most capable vessel and have utility across the range of military and civilian requirements.

Acquisition Strategies and Industry Participation

9.3 The acquisition of vessels will be influenced by:

- the ability to attract alternative financing arrangements;
- the ability to establish flexible operating expense schemes; and
- the potential to provide regional development opportunities in New Zealand.

9.4 The OPV and any new IPVs will be based on civilian standards of design. This means that the ability to finance the acquisition of these vessels can be more easily arranged through a third party (typically the ship builder). There is a low risk in ship builders entering into a short-term lease (5-10 years) as there exists a ready civil market able to also operate the vessels in the event of a lease termination. Both the Royal Navy and the Royal Australian Navy are currently developing this type of fleet acquisition strategy in the OPV class of vessel.

9.5 The Royal Australian Navy are also looking at arrangements in which the utilisation of the OPVs is based entirely on guaranteed access to the capability through a third party who will be responsible for maintenance, upgrades, etc. In the case of their Fremantle replacement project, the Navy will purchase the use of the OPVs for a guaranteed period each month. This transfers the risk for fleet management out to the private sector.

9.6 Finally, there are considerable opportunities for regional development initiatives in the building of inshore and offshore vessels. Ship builders contacted during the course of the Review indicated a willingness to build ships in New Zealand.

9.7 The potential for similar arrangements in the acquisition of a MRV is very limited given that these vessels tend to be military specific with little potential for crossover to the commercial sector.

Next Steps

9.8 It is intended that a set of output based statements to meet both the MRV and patrol requirements be prepared by the MoD, in consultation with the Defence Force and civilian agencies, to identify the functions that potential vessels must perform and the standards and conditions to which those functions are required to be performed. It is proposed that these functional statements be provided to industry to allow for a range of alternative vessel options and acquisition strategies to be developed that can be acquired within the set financial limitation. Following the identification of feasible options, the MoD will report back to Government with specific proposals to proceed to acquisition.

9.9 To ensure that there is no loss in training capability within the Navy, a smooth transition from *Canterbury* to the MRV will be necessary. The planning process for this replacement will require a realistic timetable for any build or modification programme.

GLOSSARY

Customs	New Zealand Customs Service
DoC	Department of Conservation
EEZ	Exclusive Economic Zone
FPDA	Five Power Defence Arrangements
IPV	Inshore Patrol Vessels
MAF	Ministry of Agriculture and Forestry
MCM	Mine Countermeasures
MFAT	Ministry of Foreign Affairs and Trade
MFish	Ministry of Fisheries
MoD	Ministry of Defence
MRV	Multi-Role Vessel
MSA	Maritime Safety Authority
NCS	Naval Control of Shipping
NRCC	National Rescue Coordination Centre
NZDF	New Zealand Defence Force
OPV	Offshore Patrol Vessel
RHIB	Rigid Hull Inflatable Boat
RNZN	Royal New Zealand Navy
SAR	Search and Rescue

ANNEX A

TERMS OF REFERENCE

BACKGROUND

1. In its 2 April 2001 decisions on a sustainable capability plan for the NZDF (CAB MIN (01) 10/10) Cabinet agreed to a Maritime Forces¹ Review to identify fleet composition options for the Government. In addition to the civilian, military and foreign policy related uses of naval vessels, the Review is to take into account:
 - The civilian requirement for coastal and mid-range off-shore capabilities;
 - The roles to be performed in conjunction with New Zealand's responsibilities and obligations in respect to the Southern Ocean and Ross Dependency as well as the Cook Islands, Niue and Tokelau;
 - The need for tactical sealift capability, including that specifically relating to disaster relief and other tasks in the South Pacific;
 - The roles to be performed by the RNZN at a wider regional and global level;
 - The combat and detection equipment on the Seasprite helicopters; and
 - The need for and priority to be accorded to the roles to be performed by the RNZN Volunteer Reserve.
2. These requirements are to also consider the interaction of the civilian requirements identified by the Maritime Patrol Review and the military requirements identified in the Land Forces and Sealift Reviews.
3. A separate study will be conducted to review the utility of the hydrographic and survey roles currently performed by *Resolution*. Options developed in this Maritime Forces Review will, therefore, need to consider the impact of the potential disposal of *Resolution* from the current RNZN fleet.

AIM

4. The aim of the Review is to identify fleet composition options of the future RNZN surface fleet taking into account the civilian, military and foreign policy roles. In identifying these fleet options the following capability areas will be addressed:
 - a. Combat, including helicopter capabilities;
 - b. Constabulary (resource protection, customs, etc);
 - c. Tactical sealift;
 - d. Tanker/support;

¹ Maritime forces refer to all of those elements that operate in the maritime environment, including ships and aircraft. While this review will not address specific capability issues associated with aircraft (these having been addressed in the Feb. 2001 Maritime Patrol Review), it will nevertheless take into account the roles performed by maritime surveillance aircraft within the concept of a maritime system.

-
- e. Mine counter-measures (MCM);
 - f. Naval control of shipping (NCS); and
 - g. Interaction with maritime aircraft.

SCOPE

- 5. The Review is to be conducted in two phases, utilising where appropriate, information already compiled for previous reviews. The broad aims of the two phases and the tasks within each phase are:

Phase I – Strategic Guidance

- a. Identify and confirm the intent of the high-level defence policy guidance of the Government that will influence the shape and size of the maritime surface fleet. This will include:
 - i. Identification of the defence policy underpinning the requirement for surface vessels;
 - ii. Incorporation of the Government's views on broad defence strategies and responses for achieving defence policy goals utilising maritime surface capabilities, either independently or as part of a joint or combined force;
- b. Review the current and future strategic environment to identify those key factors and threats likely to impact upon the demand for, and capabilities required of, the maritime forces. Included within these relevant key factors will be assessments of the following:
 - i. Physical environmental drivers;
 - ii. Technological trends and issues;
 - iii. Economic & Financial implications;
 - iv. Foreign Policy/Political trends; and
 - v. Personnel/Human resources trends.
- c. Identify the broad strategic roles that the maritime surface vessels should be capable of contributing to and the operational tasks that it should be capable of performing that are consistent with the policies of the Government. This will be done by:
 - i. Identifying strategic relationships, civilian and military roles and military tasks that take into account the demands of the maritime environment in the NZDF's potential areas of operations, maritime doctrine and other NZDF assets, including maritime patrol aircraft;
 - ii. Identifying performance characteristics and measures, consistent with the identified roles, policy and operating environment demands;
 - iii. For operational analysis purposes, identifying generic missions and associated tasks within scenarios that reflect the Government's policy;
 - iv. Identifying possible fleet mix options for generic platform types and general characteristics for performing selected roles and tasks. The options need to take into account the current and future investment in the two ANZAC frigates (*Te Mana* and *Te Kaha*), the retention of *Endeavour*, the disposal of *Charles Upham* and the desirability and practicality of retaining the existing fleet of inshore patrol craft (*Moa*,

Kiwi, Wakakura and Hinau), the diving tender *Manawanui*, as well as the pending decommissioning of HMNZS *Canterbury*. It will also need to consider any consequences associated with the potential disposal of *Resolution* following the Hydrographic Review;

- v. Identifying rough-order costs and capabilities for each fleet option, including any mid-life upgrades and other investments needed to maintain required capability levels; and
- vi. Refining the options and selecting an appropriate set for study in detail.

Phase II – Analysis of Fleet Options and Numbers

- d. Analyse and cost the potential options for the future composition of the maritime surface fleet as well as possible transition plans from the current force structure. The policy and operational implications of those options will be assessed by:
 - i. Identifying the effectiveness of each option for meeting the Government's defence policy needs, including any operational risks, tradeoffs and policy gaps;
 - ii. Estimating the rough order of magnitude costs of future capital investment and through life costs for each option, including any costs associated with transitioning to a new force structure and mid-life costs associated with maintenance of required capability levels;
 - iii. Identifying a broad general transition plan from an existing force structure that can act as a guide for subsequent force structuring and capital acquisition/disposal activity; and,
 - iv. Completing a final report summarising the findings and fleet options.

Conduct of the Analysis

- 6. The Review will require an interdisciplinary team involving MoD (Policy & Planning Division) who will lead the study, RNZN and HQ NZDF. The Review is to be conducted with regular consultation and dialogue with Treasury, MFAT and DPM&C. Other interested parties, including participants in the Maritime Patrol Review (Feb. 2001), will also be consulted as deemed appropriate by the Secretary of Defence.
- 7. Consultants will need to be engaged in the modelling and costing sections of the Review. Project specification and approval associated with this external work will be undertaken separately. Where appropriate, existing material emanating from previous Review's will be utilised where possible.
- 8. A report will be submitted for consideration of the Minister of Defence at the conclusion of the Review.
- 9. Based on experience a large policy Review of this nature takes approximately 6 to 9 months to complete. However, a considerable amount of this work has already been completed through 1999-2001. To ensure sufficient time for the Review to work through the issues associated with revised policy, a timeframe of the end of September 2001 has been set for the completion of a draft final report. This will provide the Government with guidance on decisions related to investments within the existing fleet, as well as new purchases where necessary.

Deliverables

10. The Review will identify options for the future size and shape of the maritime surface fleet including potential transition plans from the existing force structure. The Review will be used as the basis against which detailed specifications for maritime capabilities will be developed and any future acquisition will be undertaken.
11. Once decisions have been made in relation to the outcome of this Review, force structuring and capital acquisition planning will be undertaken to develop detailed programming and budgeting proposals.

Graham Fortune
Secretary of Defence

June 2001