



MINISTRY OF DEFENCE
MANATU KAUPAPA WAONGA

NEW ZEALAND DEFENCE FORCE
TE OPE KAATUA O AOTEOROA



REPORT TO THE OFFICIALS' GROUP CONSIDERING MARITIME PATROL NEEDS

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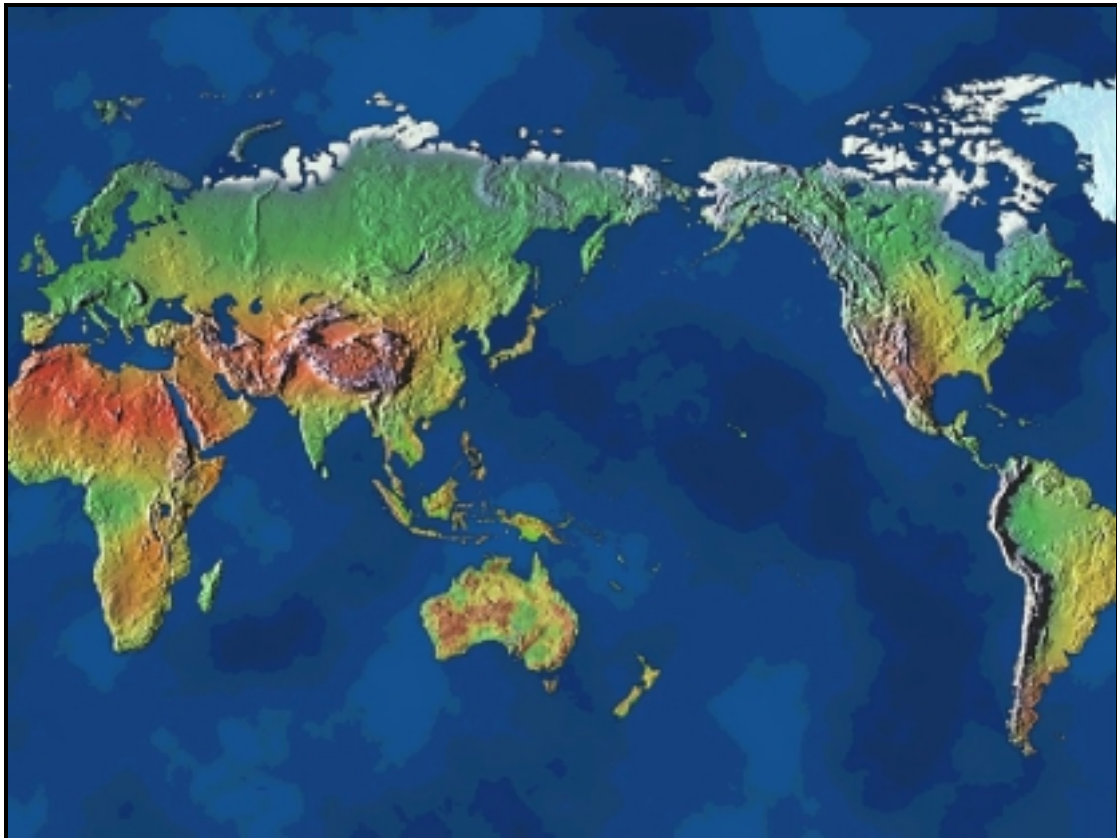


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EXECUTIVE SUMMARY

Maritime patrol is fundamentally concerned with the protection of sovereignty. Having a military maritime patrol capability protects New Zealand's sovereignty by gathering information about its strategic environment and providing a military response option that can be used to counter potential threats. Maritime patrol operations demonstrate New Zealand's will and capacity to assert its sovereignty and act as a deterrent to illegal activity.

A major national task is to conduct surveillance to provide information to support national needs. New Zealand must have independent national information and intelligence gathering capabilities. The military maritime patrol capability is an essential component in this respect.

Military maritime capabilities and intelligence are necessary for dealing with the security challenges New Zealand faces now and in the immediate future in both its immediate strategic environment and the South Pacific.

Maritime patrol aircraft fill the surveillance gap between satellites and surface platforms. They also provide a timely response option to meet sovereignty threats.

Key requirements for effective maritime patrol are capabilities that have sufficient "reach" to operate in New Zealand's maritime area of interest and are interoperable with other force elements.

Maritime patrol aircraft have high utility both in the protection of forces on deployment and as a commitment option for peace support operations. Maritime patrol aircraft can also be used to support land forces in both combat and peacekeeping operations and during non-combatant evacuation operations.

Having a capability that can meet New Zealand's military needs in its immediate environment and the South Pacific can also serve the government by:

- meeting security challenges such as illegal fishing, terrorism and trans-national crime in the maritime environment; and
- contributing to its defence policy objectives with respect to Australia, the Five Power Defence Arrangements and UN and other peace support operations.

There are a number of risks if a military maritime patrol capability cannot meet the military needs.

The Orion is the optimum military maritime patrol platform. It was designed for the task. The Orion has always had an inherent capability to do a wide range of civilian tasks. Doing them is a management issue.

INTRODUCTION

1. One of the key priorities identified in *The Government's Defence Policy Framework* (the *DPF*) released in June 2000 is the need to maintain effective maritime surveillance. The *DPF* also signalled the government's intention to undertake a review to identify options for surveillance of the maritime environment and meeting international obligations for search and rescue. To this end, the government established an officials' group led by the Department of Prime Minister and Cabinet to recommend to Ministers:

- how the civilian requirement for maritime patrol can best be met; and
- in the light of the *DPF*, whether a military maritime patrol capability (MMPC) should be maintained.

2. To assist the group with its deliberations, each department was requested to produce a report that outlined the maritime patrol requirements necessary for meeting their respective legislative and policy responsibilities. The Ministry of Defence and the New Zealand Defence Force (NZDF) were specifically requested by the chair of the group to:

- identify New Zealand's military maritime patrol needs; and
- consider what and how NZDF assets other than the existing maritime patrol platform - the P3K Orion - can contribute to the government's maritime patrol requirements.

3. In further guidance to departments, the Chair emphasised the following:

- in assessing their needs, departments ought to pay particular regard to how their needs relate to New Zealand and the South Pacific; and
- the importance of identifying the risks associated with not maintaining a MMPC.

4. Accordingly, this paper identifies the military maritime patrol requirements necessary for meeting the government's defence policy objectives and wider security requirements, taking into account the guidance provided by the Chair.

5. The Paper is divided into three parts:

- Part I outlines the military needs and tasks.
- Part II outlines the way a MMPC can meet other national and defence policy objectives.
- Part III outlines the maritime patrol capability options and the risks associated with not maintaining a MMPC.

PART I. THE MILITARY NEEDS AND TASKS

6. **The fundamental need of any government is to assert and defend its sovereignty.** This includes protecting its territory, waters, people and resources. To do this, a government needs to know what takes place in its strategic environment as well as having the ultimate security of a military response that can be employed quickly and decisively to deal with sovereignty incursions.

THE MILITARY NEEDS FOR MEETING SOVEREIGNTY TASKS

7. New Zealand needs military maritime capabilities to protect its sovereignty. These capabilities demonstrate New Zealand's will and capacity to protect its sovereignty. New Zealand also needs these capabilities to protect the interests of those South Pacific countries for which it has constitutional obligations (the Cook Islands, Niue and Tokelau). Having these capabilities provides the government with the option of threatening or (as a last resort) actually applying force to enforce its sovereignty. The visible presence of such capabilities is sufficient in itself to demonstrate that New Zealand is serious about asserting and enforcing its sovereignty.

8. **Enforcing sovereignty is a core military responsibility.** Just as security firms undertake security tasks, civil contractors can conduct maritime patrols. But the New Zealand constitutional model reserves general powers of enforcement to police, rather than security firms, because the police are subject to discipline and are accountable to the government as an agency of the Crown. Similarly, the exercise of sovereignty, particularly outside of New Zealand's territory, should be primarily reserved to the NZDF. It is subject to discipline and is statutorily accountable to the government as an agency of the Crown.

9. **Maritime patrol is fundamentally concerned with the protection of sovereignty.** This is because its core functions are to gather information about what is happening in New Zealand's maritime environment and to mount, if necessary, an appropriate military response if New Zealand's sovereignty is threatened. Conducting maritime patrol also establishes **presence**. This in itself **acts as a powerful deterrent against illegal activity.**

10. The MMPC's core functions are described in military terms as: surveillance, reconnaissance and response.

- **Surveillance** is the systematic observation of air, surface, or sub-surface areas, places, or things, by visual, aural, electronic, photographic, or other means. Surveillance is performed on all maritime patrol missions.
- **Reconnaissance** is the examination of an area or target of interest for the purpose of ascertaining specific information.
- **Military Maritime Response.** Providing protection requires some form of response. Each response needs to be carried out sufficiently early to negate

the effects of any threat. Response options require the capability to use proportionate force.

(The military definitions of “surveillance” and “reconnaissance” differ from some dictionary definitions of these terms).

Maritime patrol is fundamentally concerned with the protection of sovereignty. Having a MMPC protects New Zealand's sovereignty by gathering information about its strategic environment and providing a military response option that can be used to counter threats to sovereignty. Maritime patrol operations demonstrate New Zealand's will and capacity to protect its sovereignty and act as a deterrent to illegal activity.

THE NEED FOR KNOWLEDGE

11. A key element of sovereignty is the government's need to know what happens in its strategic environment. Intelligence provides government with that knowledge.

12. From a national security perspective, intelligence informs government about what parties of interest are doing, what they are capable of doing and what they may do in the future. Intelligence, therefore, provides information needed to realise national objectives.

13. From a military perspective, intelligence provides the military with the information needed to accomplish missions. Such information is used to produce assessments that help decide which forces to deploy, when, how, and where to deploy them in a manner that accomplishes the mission at the lowest human and political cost.

14. New Zealand needs to have its own capability for collecting and disseminating both classified and unclassified information for the following reasons:

- The information supports national assessments and decision-making on security issues, including military commitments, resource protection, border control, illegal activity, terrorist threat, and disaster relief.
- Other intelligence sources do not have a complete picture of New Zealand's area of responsibility.
- Access to complete and objective intelligence from other sources cannot be guaranteed.
- Intelligence from other sources inevitably has some constraints and particular interpretation.

- Situations can change quickly and other sources may not be able to respond in a timely manner.
- Contributing information to the collective intelligence effort supports ongoing access. New Zealand is not expected to be a major contributor of information. In return for reasonable access to shared intelligence, New Zealand is expected, however, to gather information in its area of interest where others have limited capability to do so.

15. Maritime patrol is an essential component in New Zealand's intelligence gathering process:

- it both contributes to and acts on intelligence;
- it is crucial for gathering information and data in areas that are not readily accessed by other capabilities;
- it can be deployed rapidly; and
- it can be tasked to collect information on specific targets of interest and to a degree of resolution and quality necessary for prosecution or diplomatic action.

A major national task is to conduct surveillance to provide information to support national needs. New Zealand must have independent national information and intelligence gathering capabilities. The military maritime patrol capability is an essential component in this respect.

MEETING SECURITY CHALLENGES

16. The need for a MMPC and independent intelligence gathering is especially important in light of the security challenges that New Zealand faces now and is likely to face in the near future in its immediate strategic environment and in the South Pacific. These were identified and considered in two documents released at the same time as the *DPF*: the Ministry of Foreign Affairs and Trade's, *New Zealand's Foreign and Security Policy Challenges* (NZFSPC) and the External Assessment Bureau's *Strategic Assessment 2000* (SA2000).

17. These papers make clear that New Zealand and the South Pacific do not face any direct military threats now or in the foreseeable future. But they do face a number of low level security challenges. Most of these security challenges (which are outlined in PART II of this report) require a maritime response.

18. Collecting and analysing intelligence is crucial for dealing with these security challenges. Recent events in Fiji and Solomon Islands also demonstrate the need for good intelligence. Such information is critical to national decision-making, especially if NZDF force elements are deployed to

meet some of the more demanding South Pacific challenges identified in NZFSPC and SA2000.

Military maritime capabilities and intelligence are necessary for dealing with the security challenges New Zealand faces now and in the immediate future in both its immediate strategic environment and the South Pacific.

REQUIREMENTS FOR MEETING NEW ZEALAND'S MILITARY NEEDS

19. Effective surveillance and response requires a network of complementary systems. Surveillance is conducted from satellites, aircraft and surface ships equipped with detection and imaging equipment. **Aircraft are a key capability for filling the wide and crucial gap between satellites and surface capabilities.** All three surveillance capabilities are nevertheless needed to exploit the advantages and compensate for the deficiencies inherent in each one.

20. Air or surface platforms can provide a military response. The most appropriate surveillance platform for dealing with sovereignty threats is dependent on a number of factors, including:

- **Timeliness.** Ships may be able to provide surveillance by being prepositioned in the relevant area to detect vessels and monitor their operations. If prepositioning is not possible, an aircraft may be more suitable.
- **Availability.** Expense and the time needed to prepare a platform will influence the availability of ships or aircraft.
- **Distance from shore and sea state.** The appropriate platforms to use will depend on their endurance, blue water capability and the requirement for constant surveillance at considerable distance from New Zealand shores. In the case of the MMPC, several aircraft may be required.

Some threats demand an immediate response. In these situations, maritime patrol aircraft provide the only timely response option.

21. To conduct surveillance, reconnaissance, and response and enforcement operations, a MMPC needs to be able to:

- detect, localise, classify, identify and track all contacts and potential threats;
- rapidly exchange data and information with other force elements; and
- if necessary, use force or assist with neutralising threats.

Reach

22. To be effective, the maritime patrol platforms need to have sufficient **“reach”** which, in simple terms, is a combination of the following attributes:

range, speed, endurance and resilience. This enables the NZDF to access the distant parts of New Zealand's maritime area of interest in a timely manner and, once there, to remain on-station for a sufficient period of time to achieve the tasks they have been given. **The size of New Zealand's maritime area of interest requires a long-range maritime patrol capability** with sufficient reach to ensure government has the means to monitor its environment.

Interoperability

23. It is essential that all components in a maritime patrol system are interoperable with each other, including those from other nations. They need to possess similar capabilities to collect and distribute information. Interoperability is a key requirement for maritime patrol. Decisions about the MMPC need, therefore, to take account of the abilities and limitations of other NZDF force elements.

Maritime patrol aircraft fill the surveillance gap between satellites and surface platforms. They also provide a timely response option to meet sovereignty threats.

Key requirements for effective maritime patrol are capabilities that have sufficient "reach" to operate in New Zealand's maritime area of interest and are interoperable with other force elements.

MILITARY TASKS

24. The maritime patrol capabilities necessary for meeting New Zealand's military needs can also be utilised to undertake or contribute to several types of military operations.

Force Preparation

25. It is a national responsibility to prepare armed forces to a standard where they can be safely and effectively committed to a multinational operation. Joint exercises and training will be conducted among the three armed services to prepare them to a basic level from which they can participate in combined exercises. Combined exercises and training will be carried out with partner countries to further develop basic expertise, practice massed effect, co-ordination and integration, and ensure interoperability. Until forces have been prepared in this manner, they cannot be safely committed to operations.

26. Sufficient capabilities must be available within the national defence force to achieve the "entry level" of competency expected by exercise and training partners. Few military capabilities can prepare and train in isolation. For most there is a dimension of interdependency: naval ships cannot train and reach operational capability without exercising with maritime patrol aircraft; the air combat force cannot reach its required level of operational capability without maritime patrol aircraft support; and the maritime patrol aircraft itself depends on naval forces to become operational.

27. In addition to this internal web of interdependency within the NZDF, New Zealand's naval combat force must work with other ships to achieve interoperability for combined operations. This requires a set of combined exercises at sea with Australia. These exercises depend on maritime patrol and air combat forces being assigned in support. Both Australia and New Zealand contribute a share of these resources in line with international practice. It is unlikely that Australia would increase its rate of effort to compensate for withdrawal of the New Zealand contribution to exercise overheads.

Force Protection

28. New Zealand has a core requirement to deploy land forces throughout the region into operations that could involve combat. Force protection is necessary when security throughout deployment and recovery is not assured. Specifically, protection will be required for the sealift ship deploying the force. Surface ships, in conjunction with patrol aircraft, will provide this, and the combined force will provide these assets. Continuous air presence will be necessary. This will require a large number of aircraft to be employed on surveillance and reconnaissance.

29. It is unlikely that any one country could provide all the support required. National contributions will be expected, particularly from countries with expertise in this area. Effective air surveillance and response is critical to surface fleet operations in the region because of the diverse range of potential threats, and the difficulties presented by constricted waterways, tropical climate and shallow water. Other multinational peace support operations will frequently require a maritime patrol capability to gather information, enforce UN sanctions or contribute to surface fleet protection.

Land Operations

30. Maritime patrol aircraft can also be used to support land forces in both combat and peacekeeping operations and during non-combatant evacuation operations. The sensors used to assist protection of shipping have the same capabilities required for detecting and identifying ground targets. They can also be used to provide real-time surveillance and targeting support to land force commanders. A New Zealand contribution could contribute to force protection of the Army.

Non-Combatant Evacuation Operations

31. When an overseas crisis takes place that threatens the lives of New Zealand citizens, the government may need to arrange for their rapid evacuation. In some circumstances, other countries will assume the responsibility of overseeing the evacuation of their nationals and New Zealanders during crises that erupt in their areas of interest. In the South Pacific, New Zealand has accepted a responsibility for protecting and evacuating its citizens in civil emergencies. This may also include the evacuation of other countries' nationals. For more challenging operations, maritime patrol operations may be required to monitor and update the situation

both before and during an operation to support planning and national decision-making and to protect New Zealand's interests.

Maritime patrol aircraft have high utility both in the protection of forces on deployment and as a commitment option for peace support operations. Maritime patrol aircraft can also be used to support land forces in both combat and peacekeeping operations and during non-combatant evacuation operations.

PART II. MEETING OTHER OBJECTIVES

32. A maritime patrol capability that can meet New Zealand's military needs in its immediate environment and the South Pacific also provides the government with a capability that can be used to meet other national and defence objectives (an outline of the NZDF's present role in meeting New Zealand's military and non-military maritime patrol needs is represented in the diagram presented at the end of this report).

TASKS THAT REQUIRE MILITARY CAPABILITIES

33. There are a number of security events and challenges that can and do take place within New Zealand and the South Pacific. The MMPC provides a military response option for dealing with these. The MMPC can also contribute to other defence policy objectives by virtue of it meeting New Zealand's military needs.

Illegal Fishing

34. New Zealand faces a variety of low level challenges to its sovereign rights over its EEZ and territorial waters and to its security from illegal fishing. This is largely in the form of unregulated fishing vessels breaching the EEZ. New Zealand needs to have the ability to detect and respond to illegal breaches. This requires air and surface capabilities that are able to detect, observe and board vessels that may be infringing.

35. New Zealand has constitutional responsibilities with respect to the Cook Islands, Niue and Tokelau. This includes surveillance of their EEZs. Conducting surveillance of these EEZs is necessary to detect and counter the threat of illegal fishing. The size and expanse of their EEZs requires a long range maritime patrol aircraft.

Terrorism

36. There is the potential for terrorists to undertake acts against New Zealand from offshore by, for example, threatening access to New Zealand ports, or fleeing to sea after committing acts in New Zealand. This requires an ability to track, board, arrest and detain. Surveillance is vital in the detection of vessels and during any operation. Maritime terrorist threats can be countered through existing NZDF capabilities, including frigates, helicopters (Kaman Seasprite), and the MMPC. The international law of "hot pursuit" allows for a vessel operating illegally within New Zealand's territorial waters to be arrested and detained outside NZ waters. For this to happen, constant surveillance is required to produce evidence that the vessel detected was operating illegally within New Zealand waters.

Trans-national Crime

37. Protecting New Zealand's sovereignty requires capabilities to combat trans-national crime that takes place in New Zealand's territorial waters. Illegal activity conducted by yachts and other small ocean-going vessels includes arms smuggling, drug trafficking and illegal migration.

38. There is also the need to be able to respond to growing trans-national crime in the South Pacific. This area is being used as a transit point for the movement of illegal substances and migrants into other countries, including to New Zealand. Such activity has the potential to undermine the effectiveness and stability of regional governments by increasing, for example, the opportunities for corruption. Allowing trans-national criminal organisations to establish themselves in the South Pacific is inimical to New Zealand's interests and would inevitably have direct and indirect implications for New Zealand.

39. The South Pacific is regarded internationally as a key area for New Zealand. There is, therefore, an international expectation that New Zealand will play a principal role in monitoring and responding to international crime in this area. Other countries have limited capability to take on additional responsibilities in this region and are committed to such efforts in their own areas of interest. If this area remains uncovered it would weaken the effectiveness of the wider effort by providing an area of relative sanctuary for criminal organisations.

40. The resources used in, and the sophistication of, trans-national criminal activity makes monitoring tasks, particularly over the expanses of the Pacific, increasingly difficult.

Southern Ocean and Ross Dependency

41. New Zealand is a claimant state in the Antarctic Treaty System. It also has a key interest in protecting the Antarctic environment and the resources within it, as well as a desire to ensure that Antarctica remains neutral and non-aligned.

42. Under the *Convention on the Conservation of Antarctic Marine Living Resources* (CCAMLR) 1982, New Zealand is obliged to "take appropriate measures within its competence to ensure compliance with the provisions of the convention". New Zealand is, therefore, undertaking monitoring and compliance activities in the Ross Sea and legislation regulates the access of New Zealand fishing vessels to the area. A particular concern is the vulnerability of the Patagonian Toothfish, a very valuable fish species that is subject to increasing illegal fishing and poaching.

Australia

43. Given the importance of Closer Defence Relations (CDR), New Zealand would be expected to make a significant contribution to Australia's defence if it faced a major threat or conflict. This means supplying relevant force elements

that are interoperable with those of the Australia Defence Force (ADF). In such a situation, the combined forces would work together to achieve dominance over the air/sea gap by providing continuous coverage of critical areas.

44. Naval task forces, including New Zealand's frigates, could work to dominate certain focal areas within the air/sea gap, air combat forces could provide air cover and maritime patrol could provide surveillance, reconnaissance and response in areas not covered by other assets. If required, the MMPC could also provide protective support to naval task forces.

45. There is an informally accepted division of labour between Australia and New Zealand: Australia takes primary responsibility for the area to its north and the Indian Ocean along with Papua New Guinea; New Zealand takes primary responsibility for the South Pacific. Australia places particular importance on the maritime nature of its strategic environment. While there is, as East Timor demonstrates, a recognised and important role for land forces, Australia places considerable emphasis on the need to operate throughout the maritime area surrounding both nations should conflict occur, as well as demonstrating presence and gathering information to support stability in times of peace.

46. If New Zealand maintains a MMPC capable of operating as part of a combined force, it would provide a useful and valued addition to the Australian capability. The Australians have indicated that they would have difficulty meeting concurrent requirements with their current maritime patrol force. In combination, Australia and New Zealand could at present field 25 aircraft. This would significantly increase the probability of meeting maritime patrol requirements. No other regional countries have a long range maritime patrol capability.

Five Power Defence Arrangements

47. New Zealand has extensive political, economic and security interests in the Asia-Pacific region. This is underlined by New Zealand's growing bilateral and multilateral ties with the region and South East Asia in particular. A key mechanism for maintaining regional stability in South East Asia is the Five Power Defence Arrangements (FPDA). Participation in the FPDA serves New Zealand's interests by:

- making a real contribution to regional security through expressing a collective political will to act to protect the interests of FPDA nations and to maintain regional stability; engaging Singapore and Malaysia; and acting as a confidence building measure.
- contributing to regional confidence building value through promoting dialogue and cooperation amongst FPDA members; and conducting various activities and exercises that are, in themselves, confidence building measures.
- acting as a critical mechanism for New Zealand's engagement in South East Asia.

48. The NZDF has standing commitments to contribute equipment, personnel and financial resources to a wide range of FPDA activities and exercises. These are primarily maritime in nature and revolve almost exclusively at present around joint air and naval operations. This enhances the utility which New Zealand can bring to FPDA exercises, provides NZDF personnel with an opportunity to take part in joint exercises, and raises New Zealand's profile within the FPDA.

49. The opportunity is often also taken to use these assets in bilateral exercises and activities in South East Asia as an adjunct to FPDA activities. The force elements and skills which the NZDF contributes to the FPDA have considerable value for our South East Asian security partners. They also help to maximise the benefit of the exercises for all participants.

United Nations and other Peace Support Operations

50. New Zealand's principal contribution to UN operations has been, and will continue to be, contributions of peacekeeping troops. A MMPC, however, provides the government with an additional option for contributing to UN operations. This is particularly so if these operations were to occur in a maritime environment or if the bulk of New Zealand's troops were already committed to other operations. A MMPC is easy to deploy and sustain on operations anywhere in the world and imposes little logistical burden on the rest of the NZDF.

TASKS THAT DO NOT REQUIRE MILITARY CAPABILITIES

51. There are two major tasks that the NZDF performs by virtue of having a MMPC which do not necessarily require a military response: search and rescue and disaster relief. Having said this, the sort of long range capabilities required to perform these tasks are usually held only by defence forces. It is for this reason that the NZDF is presently required by government to do these tasks.

Search and Rescue (SAR)

52. New Zealand has international legal and political obligations to conduct SAR within its defined area, the New Zealand Search and Rescue Region (NZSRR). The NZSRR stretches from near the equator above the Cook Islands down to the South Pole beyond the Ross Dependency and extends in longitude from the middle of the Tasman to the middle of the Pacific. In addition, New Zealand has a memorandum of understanding with Fiji to provide, insofar as is practical, search aircraft to assist the Nadi Rescue Coordination Centre. Fiji does not have assets capable of covering SAR situations across its region of responsibility.

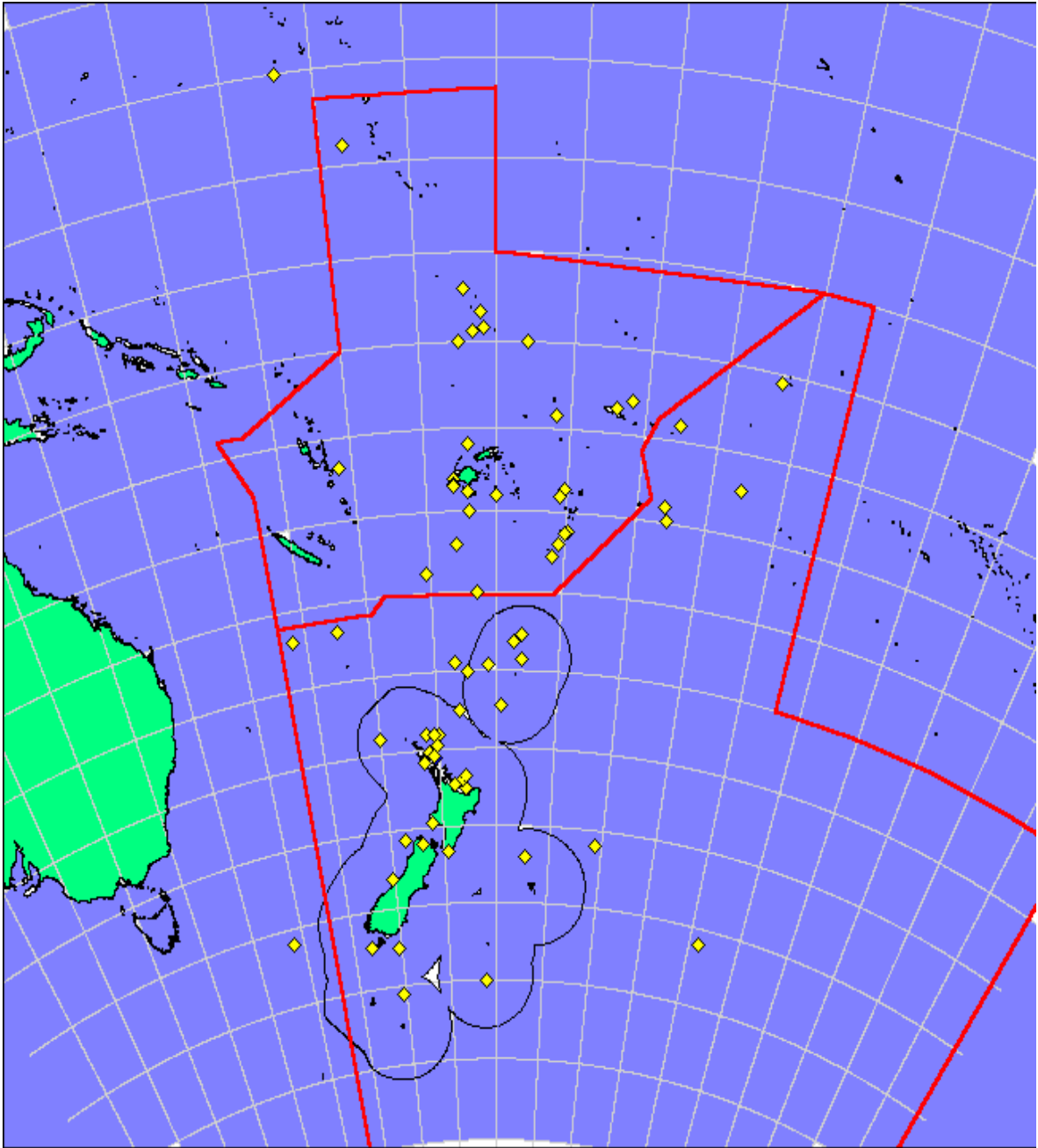
53. NZSRR is coordinated by the National Rescue Coordination Centre (NRCC). The NRCC uses RNZAF capability for 'class three' incidents – those that cannot be handled by any other capability. There are approximately nine requests a year for RNZAF assistance with 'class three' incidents. Over the last

six years, the RNZAF has been instrumental in saving 118 lives in the NZSRR and over 100 people in 30 SAR incidents in the Nadi SAR region (see the accompanying map).

Disaster Relief and Medical Emergencies

54. A MMPC can play an important role in providing information and support in the aftermath of natural and humanitarian disasters, especially in the South Pacific. It can provide an immediate and fast response to a disaster and it can also conduct reconnaissance to establish independently the nature and extent of the damage and pinpoint the worst effected areas. This enables the government to determine the most appropriate course of action for responding to the disaster and, more specifically, the appropriate type and quantity of assistance required. It can also assist with medical emergencies in places like the South Pacific by supporting emergency evacuations and through the provision of medical supplies.

RNZAF Orion SAR Operations (1995-2000)



PART III. CAPABILITY OPTIONS AND RISKS

55. To undertake the military needs identified in PART I, there are a number of NZDF air and surface capabilities which are or could be used. An assessment has been made of the:

- appropriateness of the present capabilities;
- the required capabilities; and
- the likely risks and effects if no maritime patrol capability is maintained.

PRESENT CAPABILITIES

56. The present maritime force capabilities are, to a greater or lesser degree, covering all the military needs. The frigates and maritime helicopters are able to meet requirements. The long-range maritime patrol aircraft can generally meet its objectives but suffers from obsolete and unreliable sensors that limit its capability.

REQUIRED CAPABILITIES

57. All of the military needs can be fully met utilising a mix of the frigates, helicopters, and long-range maritime patrol aircraft with adequate sensors.

SH-2G Seasprite

58. The NZDF will commence delivery of five new Seasprite helicopters from late 2001. The helicopters are fitted with a maritime surveillance radar, electro-optic systems and electronic intercept capability. Although purchased as an integral part of the frigate combat capability, they have utility in supporting civilian maritime patrol requirements.

ANZAC Class Frigates (MEKO 200 design)

59. The NZDF's two ANZAC class frigates have the range, endurance and seakeeping qualities to conduct maritime patrol operations throughout New Zealand's maritime area of interest. The major constraining factors are availability and speed of response over the vast area of interest. The ANZAC frigate has significant limitations (as all surface vessels do) in the rate of surveillance coverage. This is enhanced to some degree by the Seasprite helicopter which extends the frigates' "eyes and ears". When appropriately positioned and cued, the frigates are an excellent response option. **The frigate with its helicopter cannot replace, but naturally complements, the MMPC.**

C-130 Hercules

60. The RNZAF has 5 C-130H Hercules which were all acquired in the 1960s. They are transport aircraft used for freighting personnel and equipment. They are used extensively for peace support operations, humanitarian missions and disaster relief operations. They also assist with the Antarctic programme. Invariably, demand exceeds supply.

61. **The C-130 was not designed as a maritime patrol aircraft and is not suitable for military maritime patrol tasks.** The aircraft has no weapon capability and has never been successfully configured for a military maritime patrol role. Moreover, in comparison to the P-3 Orions, the C-130 is appreciably slower, has less range at patrol altitude, less on station endurance and limited visual observation capability.

62. **The only known organisation that seriously uses the C-130 in a non-military maritime patrol role is the US Coast Guard.** Their C-130s are tasked with a wide range of missions including search and rescue, fisheries protection, environmental protection, drug interdiction, and cargo and personnel transport. To accomplish these tasks, the aircraft are fitted with high performance radar and electro-optics sensors similar to those fitted to US Navy P-3s.

63. While the C-130 could be used for civilian tasks, it would be impractical to use the current RNZAF C-130 aircraft as they are over committed on transport tasking for the Army and do not have surveillance equipment. The removal of Andover aircraft from RNZAF service and increasing demand for airlift has placed considerable strain on the C-130 fleet: tasking requirements regularly exceed available aircraft. **There is no capacity for the current C-130s to conduct maritime patrol tasking.**

64. **Even if capacity was available the C-130 has no practicable surveillance capability:**

- its radar is a 1950s technology weather radar with very limited surface surveillance capability;
- it has no night observation capability; and
- it has no ability to record, manage and exchange information.

65. **Conducting long range civilian maritime patrol tasks with C-130s would require a minimum of four additional aircraft fitted with appropriate surveillance equipment.** Acquiring four used C-130s and completing a life extension programme would cost about \$270 million. Four new C-130Js would cost about \$700 million. On top of aircraft acquisition costs would be the cost of installing surveillance equipment. These are likely to be in the order of \$70 – 100 million for four aircraft. Adopting the US Coast Guard fit would be a low risk option but not necessarily low cost: both the radar and electro-optics system are higher cost items than those proposed under Project Sirius. More modest equipment could be considered but this would require significant engineering

development with attendant high costs. Either the used or new aircraft option would take at least four years to bring into service.

66. Aside from the cost of acquiring suitably equipped C-130 aircraft there are drawbacks to having aircraft perform two mutually exclusive roles. The current fleet is already stretched to meet increasing airlift demand and inevitably there would be tasking conflict between transport and maritime patrol requirements. **Satisfactorily catering for both requirements would require more than four additional C-130s.**

The Boeing 727

67. The RNZAF has 2 Boeing 727 aircraft. This is a purpose designed and built short range, medium to high speed civilian passenger transport aircraft. It has limited endurance, operates most effectively and efficiently at high altitudes, carries no surveillance sensors, and would be severely constrained operating low level in the maritime environment. As with the C-130, there is also a considerable airlift vs. patrol, tasking conflict.

68. Any B727 replacement would require considerably more reach to be considered as an alternative maritime patrol aircraft option. Options would include the Boeing 737-700/800 series or 757 or 767 aircraft. Such aircraft could conceivably reach New Zealand's area of interest but would require fitting of appropriate surveillance sensors. They would need extensive modification if a military role, for example, sovereignty protection was required of these aircraft.

69. **Given that the Boeing 727 must be phased out of service because of its age and airport noise restrictions, it is impractical to consider it as an option. Other options would be expensive to procure and would require extensive and costly modifications.**

P-3 Orion

70. The P-3 Orion is a purpose built, long range maritime patrol aircraft. It has the range, endurance and resilience to properly and effectively undertake maritime patrol tasks. It also has considerable versatility. This enables it to perform a wide range of maritime patrol tasks, both military and civilian. Although designed more than 40 years ago, no modern successor to the P-3 has been developed. Due to its very good capabilities, several Orion operators are seriously considering following New Zealand's lead and extending the life of the aircraft.

71. New Zealand has six Orion aircraft. They were purchased to give the government the following capabilities:

- Surveillance;
- Reconnaissance;
- Anti-surface warfare; and
- Anti-submarine warfare

72. Inherent in the provision of these capabilities was the ability to conduct civilian surveillance and reconnaissance tasks.

73. In the early 1980s the aircraft received a partial equipment update with the introduction of improved surface surveillance radar, infrared camera system, more accurate navigation capability and a data management system. A planned second phase of upgrade covering the remaining systems was not implemented due to lack of funding.

74. The P-3's equipment is a mixture of 1960s and 1970s technology. It is largely ineffective and becoming increasingly unreliable and difficult to support. Most systems can be supported for a further five years although reliability is expected to deteriorate further and maintenance costs will inevitably rise. Some systems are not supportable. Where possible, local initiatives are underway to maintain equipment functionality.

75. The result of the equipment deficiencies is the ineffectiveness of systems to accomplish both military and civilian tasks. For example, imagery from the infrared system lacks sufficient resolution to positively identify vessels at night, thereby placing both the aircraft and ships at risk from potential threats. The same inability to positively identify vessels severely restricts the level of support that can be provided to civilian agencies such as MFish and Customs.

76. In addition to the mission equipment, the navigation and communications systems will require updating to permit the aircraft to continue to fly. Airspace management is undergoing significant change to improve safety and accommodate increasing air traffic congestion. Several stringent navigation standards are being implemented over the next decade. Older aircraft, such as the Orion, will need to be upgraded to meet the new standards. Current assessment indicates that the Orion will need to be compliant by 2005.

77. **Studies conducted in the mid 1990s concluded that the most cost effective way of maintaining a long range maritime patrol capability was to extend the life of the existing fleet and upgrade the mission equipment.** As a result, the aircraft have undergone a refurbishment programme, primarily replacing the wings and horizontal stabiliser. **The airframe refurbishment will give the aircraft at least another 25 years of life. In addition to investment in the airframe, a new autopilot is currently being installed.**

78. While **the requirement to update the mission equipment has not changed**, a more innovative approach may be possible. Recent local modifications forced on the RNZAF by obsolete equipment have the potential to be developed further. This will prolong the life of some equipment and may allow a phased approach to updating equipment. Notwithstanding, the primary sensors are ineffective and beyond the resources of the NZDF to correct. As a first step in modernising the Orion, updating key sensors and systems and investing in further local development of remaining systems may offer an acceptable interim capability at a modest cost.

79. **The Orion is the optimum military maritime patrol platform as it was designed for the task.** In the 1960s it was chosen as the best platform to reach New Zealand's areas of interest and has served the nation well since. **The Orion has always had an inherent capability to do a comprehensive range of civilian tasks. Doing them is primarily a management issue** which requires multi-agency correlation of needs and tasking.

NO CAPABILITY

80. If no MMPC is maintained, this is likely to impact on the military needs discussed earlier in a number of ways. These are identified in the box below.

Military Needs and Tasks	Risks and Effects of No Capability
Intelligence gathering	If the capability does not exist, there will be an inability to establish what is happening in New Zealand's area of interest. Other capabilities such as surface forces or satellites can only provide some of the information.
Reach	Long-range maritime patrol enables speed, distance and sustainment to be attained which is not possible with other options.
Surveillance	The probability of determining inimical activity will be constrained.
Reconnaissance	Close, quick, and effective assessments may be jeopardised depending on the distance and required speed of reaction.
Response	The lack of a capability can jeopardise the ability to assert New Zealand sovereignty where appropriate.
Force Preparation	If no capability exists to enable the maritime patrol and the naval combat force to practice together, they will not be able to reach a standard where they can engage with others in combined operations unless someone else provides the capability. The effect is that the force elements are not at the appropriate level of operational capability to enable them to work with others.
Force Protection	No capability would make New Zealand totally dependent on the capabilities of others. This could be a problem if these are committed at the time New Zealand requires them
Land Force Support	No capability reduces the options for providing command and control support for counter-terrorist operations, special operations, some land forces operations and air combat force operations.
Non-Combatant Evacuation Operations	Lack of timely and relevant intelligence will increase the risk to forces conducting those operations and/or affect the quality of the decisions being made.

NEW ZEALAND'S MARITIME PATROL NEEDS



<ul style="list-style-type: none"> <i>DPF</i> Tasks/ Tasks necessary to fulfil <i>DPF</i> Objectives Military asset utilised for task Civil government agency task • Colour in the top left corner of oval denotes agency primary responsibility. 	<ul style="list-style-type: none"> Military capability required for task Government enforcement agency task
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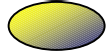
These tasks are the primary responsibility of government enforcement agencies such as Fisheries, Customs and Police. These agencies currently rely on the national military maritime patrol capability to support the delivery of their policy outcomes. As an NZDF held national asset, the military maritime patrol capability is readily available to a range of national enforcement agencies. This obviates the need for these agencies to develop separate long range operational arms.



The NZDF is directed by the *DPF* to undertake these tasks, or they are judged by Defence to be necessary to fulfil the objectives outlined in the *DPF*.



The NZDF is directed by the *DPF* to undertake these tasks. The NZDF can be regarded as having primary responsibility for fulfilling these tasks in conjunction with other government agencies.



Search and rescue task is primarily the responsibility of civil government authorities. The NZDF, and the RNZAF in particular, play a role in this as required by the *DPF*.



These tasks are primarily the responsibility of civil government authorities. In completing these tasks authorities utilise national military maritime patrol capabilities in a supporting role.