

SECRET

CANADIAN EYES ONLY

EXECUTIVE SUMMARY

FLEET MIX ALTERNATIVE STUDY 1989

INTRODUCTION

1. (S) This paper reviews policy and strategic considerations affecting Canada's maritime force development over the past 14 years. It then considers the current situation and the implication on the future maritime force structure of the three ocean strategy outlined in the current White Paper. The 15 year force development plan is then examined and the importance of the nuclear propelled submarines as a component of a balanced maritime capability for Canada is explored. The impact of not pursuing nuclear propulsion is discussed and the paper concludes that a restructuring of the Maritime portion of the Canadian Forces Development Plan (Provisional) is required given that nuclear propulsion is no longer acceptable. Finally, the paper identifies an alternative maritime force structure that would satisfy the requirement that is derived from policy.

BACKGROUND

2. (S) The defence structure review of the mid 1970's resulted in the government of the day accepting the need for maintaining the then extant inventory of warships and directed DND to prepare a future ship replacement program. In doing so DND returned to Cabinet with a Discussion Paper that outlined a requirement for warships submarines and aircraft with particular emphasis on the surface warship requirement which was reaching a critical stage at that time. This paper concluded that Canada required 30 frigates as an initial Wartime requirement, that the peacetime requirement was 26 and that 24 would have to be an acceptable number given the constraints that were then evident. The Government accepted this proposal and thereupon commenced the first of three phases of the Ship Replacement Program, the Canadian Patrol Frigate.

3. (S) In 1983 the Senate of Canada issued its report on Canada's Maritime Defence which stated:

"In the sub-committee's view, the primary aim of Canadian maritime defence policy should be to create a renewed, balanced fleet within 12 years. The policy should take into account both the need for approximately twice as many major weapon-platforms as MARCOM now possesses and the need to compensate rapidly for current lack of capabilities and numbers, while ultimately creating a balanced force."

The sub-committee recommended urgent approval of the CPF and follow on programmes, 18 additional Aurora, a significant MCM capability, 17 new conventional submarines, fast patrol boats as well as a number of less significant initiatives. The department generally responded positively to the recommendations however financial constraints precluded the inclusion of all of these recommendations in departmental plans.

.../2

SECRET

CANADIAN EYES ONLY

010656

4. (S) Concurrent to these extra-departmental activities a number of significant internal studies were progressed, namely:
- a. Future Surface Ship Study 1982 - explored the requirement postulated for 1995 and beyond - concluded that a 30 frigate fleet was required, that there was a deficiency with respect to air defence capability and that phase two and three of the ship replacement program address these recommendations;
 - b. Maritime Air Defence Study 1983 - concluded that a balanced Canadian surface fleet must consist of both ASW escorts as well as non-towed array escorts of a more general purpose nature including a local area air defence capability. It further concluded that in support of the sea-lines of communication tasking the three Task Groups would require a total of 16 AAW/ASW ships and 12 ASW towed array ships to provide a balanced surface capability against the sub-surface and air threat. The study also concluded that the NFR 90 was a possible candidate to meet the AAW/ASW requirement;
 - c. SRP II - Study of Requirements (LINDSEY/STURGESS) Mar 84 - Concluded that the department should proceed with the SRP II program, ensuring that flexibility is maintained to permit advantage to be taken of systems improvements. This study also concluded that detailed and extensive studies should be pursued to determine the optimum structure for SRP III, again with maximum flexibility.
 - d. Force Development Study 1/86 - concluded that there is a need for Local Air Defence in the surface fleet in addition to the Area Defence capability provided by TRUMP, the 30 frigate requirement identified in 1977 was still valid and that NFR 90 remained a candidate for the third phase of the ship replacement program.
 - e. Force Development Study 2/86 - concluded that a force of twelve diesel-electric submarines would enable Canada to conduct essential surveillance operations in peace and rising tension and that this force along with surface forces and aircraft would provide an overall balanced maritime capability; and

In summarizing the past policies and studies it is concluded that there is a requirement for more frigates, submarines and aircraft to meet Canada's defence commitments.

.../3

SECRET

CANADIAN EYES ONLY

- 3 -

CURRENT SITUATION

5. (S) In reviewing the White Paper it is assessed that:
- a. there has been a shift in focus from Europe to North America;
 - b. there is an added northern dimension to maritime defence requirements;
 - c. there is increased emphasis on the Pacific; and
 - d. there is an increased emphasis on the assertion of national sovereignty, through the development of a national maritime surveillance and control capability.
6. (S) Although the White Paper adds additional emphasis to a national surveillance and control requirement the deterrent value of assuring the freedom of shipping between Europe and North America is not diminished and remains a cornerstone of the maritime contribution to NATO. The maintenance of the Sea Lines of Communication across the Atlantic will remain a high priority commitment for the foreseeable future.

MARITIME FORCE STRUCTURE

7. (S) The current CFDP (P) would, to a large extent, close the capability commitment gap over the next 15 to 20 years by providing a balanced maritime capability. This plan would maintain our commitment to assist in keeping the SLOC to Europe open as well as providing a balanced overall capability for surveillance and sea control in Canada's three oceans. An essential element of this plan is the construction of 10 to 12 SSN's which due to their special capabilities provide a significant contribution along with surface task groups to the SLOC mission as well as being able to conduct surveillance and control operations in all three of Canada's oceans. It is the only platform that can provide a military capability in the Arctic Ocean, specifically under the ice.
8. (S) The diesel powered submarine shares many of the unique capabilities of the SSN however they do not possess the submerged endurance and speed of their nuclear powered counterparts. They cannot operate for long periods under ice, which restricts their employment to the ice edge where they can periodically come to the surface to charge batteries. In essence diesel submarines are well suited to fixed patrol areas particularly where transit distances are minimal and where friendly patrol aircraft can be utilized to exploit submarine generated contacts. In such employment they possess comparable capability to the SSN. In a national context the SSK is ideally suited to provide a sub surface

.../4

SECRET

CANADIAN EYES ONLY

SECRET

CANADIAN EYES ONLY

- 4 -

surveillance and control capability in areas of vital interest to Canada. This type of capability cannot be provided efficiently by surface ships or aircraft and therefore the submarine, whether nuclear propelled or not remains an essential element of a balanced national maritime force.

9. (S) The SSK is essentially a vehicle of position while the SSN is one of movement. This is not to say that the SSK cannot contribute to the SLOC mission but rather that its contribution would be indirect such as patrolling choke points. The SSN on the other hand has been used successfully in NATO exercises along with surface task groups in open ocean area ASW. It is concluded that while submarines, in general, remain an essential element of a balanced maritime force the unique capabilities of the SSN are such that their removal as an option will require a reassessment of all aspects of the maritime force including frigates and aircraft.

10. (S) In reviewing the capabilities and limitations of submarines, frigates and aircraft it is concluded that the SSN cannot be replaced on a one for one basis with SSK's or any other single platform. Such a simple alternative would result in an unbalanced overall force which would not be able to provide the required capability in both ocean areas adjacent to Canada as well as meeting our commitment to the maintenance of the SLOC to Europe.

11. (S) A review of the requirements for a balanced force without SSN's concluded that Canada requires conventional powered submarines and additional frigates as well as additional emphasis on arctic surveillance, patrol aircraft and coastal defence initiatives that are contained in the current force development plan.

SUMMARY

12. (S) There is great consistency evident in all available documentation dealing with Canada's Maritime Defence requirements that have been studied over the past 15 years. Canada's Maritime Defence needs are dictated by geography and foreign policy. Foreign policy has consistently indicated that Canada will pursue international peace and national security through a modest but nevertheless firm commitment to an allied approach to deterrence and, as nation building continues, also to the affirmation of national sovereignty. The reality of Canada's geography dictates the need for a large scale surveillance capability in three different oceans and, to the extent that Canadians require, mobile naval forces that can exercise sovereign presence and control over the vast ocean areas that are our borders and at the same time committing some of these forces to keeping the seas free for commerce between western allied nations.

.../5

SECRET

CANADIAN EYES ONLY

00053

13. (S) The DND planners, faced with large scale commitments alongside severely constrained resources, have consistently concluded that the best capability that can be provided is a mix of frigates, submarines and aircraft configured to support a versatile general purpose force supported by fixed surveillance systems and the command and control capability that will allow rapid deployment and control. The many strategic considerations and force planning factors that departmental planners from both the ADM(Pol) and VCDS groups of NDHQ have developed over the past decade are appended in the attached discussion paper prepared for ministers in Aug 86. This paper has been reviewed and is considered to be valid in 1989.

14. (S) The 1987 White Paper on defence has again been reviewed in conjunction with all major policy statements and capability studies dating back to the 1970 White Paper. This review has led to the conclusion that Policy as it relates to maritime defence has generally remained consistent throughout the period involving several changes of Government but that emphasis within the policy framework has shifted. While the level of commitment of maritime forces to NATO has essentially remained static there has been an increase in commitment to sovereignty requirements particularly in the Arctic and our coastal areas. As a result of this increased emphasis on National and Collective defence there has been an apparent shift of the "center of gravity" of our maritime effort from Europe to North America. Naval planners responded to this shift by including plans for an enhanced coastal surveillance capability, a limited mine countermeasures capability and a nuclear propelled submarine capability. The nuclear submarine was chosen because it provides a range of capabilities which contribute to a balanced and versatile force. While there are other options to contribute such a capability to our total force the Nuclear Propelled submarine is the only one which is capable of operating effectively in the Arctic ocean. This current study effort has concluded that while there are viable alternatives to an SSN program all of these alternatives entail an Arctic capability that falls short of the sea denial or sea control missions that were perceived to be necessary capability options by military staffs. This means that while a revised force structure involving conventional submarines, frigates, aircraft and fixed surveillance system can be designed to provide a three ocean capability our capability in the Arctic will be restricted to subsurface surveillance by fixed sensors and air patrol at least in the medium term. The Canadian Government will have therefore military information and intelligence as to what is transpiring in the third ocean but will need to rely on diplomatic rather than military capabilities to deal with that information.

15. (S) In considering maritime force structure alternatives to the SSN option and reviewing the many force development studies one is inexorably drawn to the conclusion that a reasonable alternative will

SECRET

CANADIAN EYES ONLY

- 6 -

include a mix of new frigates and conventional submarines. It is clear from the shift in emphasis towards North America on the resultant three ocean strategy a balanced force will include inter alia:

- a. a surveillance capability in all three oceans;
- b. a submarine barrier capability in the Pacific and Atlantic;
- c. two task groups for national defence in the Pacific and Atlantic approaches, including organic helicopter support;
- d. one task group for contribution to the protection of allied shipping in the Atlantic, including organic helicopter support;
- e. Maritime Long Range Patrol aircraft in support of B, C and D above;
- f. Maritime Long Range Patrol aircraft for Arctic Surveillance and limited presence in that ocean;
- g. Maritime Coastal Patrol aircraft in support of B and C above;
- h. Coastal and Inshore Patrol vessels including a Mine Countermeasures Capability;
- j. Communication and Information systems in order to exercise command and control over our forces; and
- k. Training, Logistics and support infrastructure including adequate peace time establishments that will ensure combat ready and available forces.

16. (S) The majority of these requirements have been catered for in the current Canadian Forces Development Plan; however, a cornerstone of this plan had been the acquisition of 10-12 nuclear powered submarines which contributes in a variety of ways to the overall maritime capability requirement in our three oceans.

17. (S) In studying alternatives to the SSN it is concluded that no simple solution such as a one-for-one substitution of frigates or conventional submarines would provide the necessary balance in a cost-benefit sense. In a relatively unconstrained sense an alternative of eight additional frigates and 10-12 conventional submarines can be supported by available military studies.

18. (S) Affordability and Phasing. The impact of re-inserting Phase III of the ship replacement program as well as the conventional CASAP program has been examined. Several assumptions were made in order to

.../7

SECRET

CANADIAN EYES ONLY

00055

scope this problem and it must be emphasized that the conclusions reached are tentative. With respect to the SSK it was assumed that a first batch of six could be procured within the 15 year planning period and that they would be delivered at the rate of one a year starting in 1996/97. It was further assumed that SRP III would follow immediately after SRP II and would be so phased as to deliver six frigates within the planning period. With these adjustments as well as some additional R&D effort and a relatively minor increase in the resources allocated to Patrol Aircraft it was determined that there would be a relative decrease in capital required over the next seven years followed by an increase starting in FY 1997/98 to the end of the planning period. The resultant net increase over the next 15 years would likely be in the order of \$1.5B. 100-4
f-100-4

19. (S) Finally, it is concluded that a feasible and affordable alternative to the SSN based maritime force structure is possible with the understanding that a military control capability in the Arctic cannot be provided in the medium term but that Research and Development resources could be assigned to rectify this deficiency in the long-term by developing an independent propulsion systems for submarines and through-ice weapon and sensor systems for aircraft.

CONCLUSIONS

20. (S) To meet the protective/defensive requirements and to ensure flexibility to respond to national and allied commitments a balanced fleet consisting of ships, submarines and aircraft fitted with a wide variety of sensors and weapons is required. To accomplish this the following should be procured:

- a. eight additional frigates either a NFR 90 or CPF variant;
- b. 12 SSK's in two batches of six;
- c. a minimum of six LRPA that are mission capable;
- d. to overcome deficiencies in current surveillance systems and to improve coastal defence the MRPA Update or a replacement should be given added priority;
- e. To overcome the specific surveillance deficiencies in the Canadian Arctic, the Arctic Array project should be accelerated; and
- f. To support the above initiatives and improve Canada's overall defence capability R&D efforts should be pursued as follows:
 - (1) initiate R&D for non-nuclear under-ice propulsion system,

.../8

SECRET

CANADIAN EYES ONLY

- 8 -

- (2) continue NAAWS R&D for local air defence payload,
- (3) initiate R&D for through-ice sensor/weapons system, and
- (4) cooperate with the US to develop and deploy an operational surveillance system in the Arctic Basin.

SECRET

CANADIAN EYES ONLY

000057

SECRET

CANADIAN EYES ONLY

11900-1 (CMDO)

May 89

CMDO DISCUSSION PAPER
FLEET MIX ALTERNATIVES STUDY

AIM

1. (S) The aim of this Discussion Paper is to examine fleet options for CCl given that the Canadian Government is no longer prepared to proceed with the SSN project.

APPROACH

2. (U) This discussion paper is in five parts. All references are listed in Annex A. Other supporting data is listed at Annex B.

PART I - BACKGROUND

This section reviews the work completed in Maritime Force Development since the Defence Structure Review of 1975, and traces the audit trail up to the "Three Ocean Paper" of 1986 entitled, Canadian Strategic Maritime Requirements.

PART II - CURRENT SITUATION

This section reviews the policy considerations as reflected in the Defence White Paper of 1987 from the point of view of planned maritime forces, including the rationale for the SSN as articulated in the three ocean strategy.

PART III - MAJOR DEDUCTIONS

This section will highlight some of the major deductions from the review of past studies.

PART IV - DISCUSSION

This section will provide an overview of Canada's Maritime Strategic requirements coincident with a three ocean concept, and then to present a credible alternative maritime force structure to that which currently embodies a fleet of nuclear propelled submarines.

.../2

SECRET

CANADIAN EYES ONLY

11900-1

SECRET

CANADIAN EYES ONLY

- 2 -

PART V - CONCLUDING MATERIAL

This section will summarize the deductions and conclusions of the paper, consider affordability and phasing, and make recommendations.

PART I - BACKGROUND

3. (C) In November of 1974, the Government directed that a defence structure review be conducted and established an interdepartmental Steering Group of Deputy Ministers chaired by the Clerk of the Privy Council to review and evaluate major defence programs. Based on the findings of the review (DSR II) in 1975, the Government confirmed its commitment to the priorities established in the White Paper (Defence in the 70's) and recognized that substantial re-equipping of the forces would be required to give effect to the approved posture. With regard to maritime forces it was agreed that there would be no early change in the inventory of ships, and that the numbers and levels of combat capability of replacement ships which might be procured, as the present fleet is phased out, were to be determined at a later date.

4. (U) Within this framework the Department of National Defence (DND) was directed to prepare a future ship replacement program, for consideration by the Government. The proposal was to be supported by an analysis of:

- a. the maritime threat, including the need and importance of keeping the sea lanes open in time of hostilities; and
- b. the role of the proposed ships in -
 - (1) national sovereignty and surveillance,
 - (2) contributing to deterrence of both conventional and nuclear war, and
 - (3) assisting to cope with the maritime threat in the event of hostilities.

In preparing this program DND was to bear in mind that the first priority of the Canadian Forces was the protection of Canadian sovereignty.

5. (U) In response to this direction, DND undertook a detailed study of its ship replacement requirements for the future. The findings of the study, which were evaluated and supported by the interdepartmental Steering Group, were considered by the Government in 1977.

.../3

SECRET

010459

SECRET

CANADIAN EYES ONLY

- 3 -

6. (C) The Cabinet Discussion Paper entitled "Maritime Forces Surface Requirement" which was presented to the Government in November 1977. This Paper stated that in war Canada would need a naval force of some 30 surface warships. However, in peace the fleet size necessary for Canada to discharge its perceived maritime responsibilities was 26 ships although a force of 24 ships would have to be accepted in view of financial and infrastructure constraints. The following additional conclusions were reached:

- a. warships can fulfil all aspects of sovereignty as in the present Canadian practice but armed patrol vessels cannot, nor can they fulfil the collective defence role;
- b. it is essential that NATO continue to demonstrate the capability to keep the Atlantic supply line open if a credible deterrent is to be maintained; NATO possesses this capability at this time;
- c. it is both in the national interest and cost effective to contribute Canada's highly valued maritime forces to NATO at the present level for these forces are also available to Canada in peacetime for the protection of sovereignty; and
- d. the frigate described by DND represents the minimum acceptable warship for contribution to the Alliance while at the same time being well suited for sovereignty tasks.

7. (C) On 22 Dec 77, the Government agreed that Canada must continue to maintain a combat capable maritime surface fleet and that, given the budget and existing infrastructure, 24 fully combat capable surface vessels would meet Canada's requirement for participation in collective defence. It also stated that the surface vessel described in the Discussion Paper represented the minimum acceptable warship for contribution to NATO while at the same time being well suited for sovereignty tasks. This decision was followed by an Assessment of the CPF program in October 1980 which restated the 24 combat capable surface ship requirement. This ship replacement program (SRP) was divided into three phases of which the first phase was this six ship CPF project.

8. (C) In the next two years Ship Replacement Options were put forth which proposed that ships of the CPF type would continue to be the type best suited to the navy's needs. This formed the basic strategy for satisfying SRP II and III. In July 1982, an Aide-Memoire to Treasury Board emphasized the future of the navy was mortgaged on CPF. If funds were not forthcoming then a fundamental change in assigned roles and

.../4

SECRET

010010

SECRET

CANADIAN EYES ONLY

- 4 -

missions was required to execute government direction. There were two options available: renegotiate Canada's commitments or increase the combat capabilities of the Navy.

9. (U) Senate Report. During the early 1980's, another study was undertaken to evaluate Canada's Maritime Defence. In May 1983, the Sub-Committee on National Defence of the Standing Senate Committee on Foreign Affairs published their findings and recommendations from this study. The main thrust of their report can be summarized in the following statement:

"In the sub-committee's view, the primary aim of Canadian maritime defence policy should be to create a renewed, balanced fleet within twelve years. The policy should take into account both the need for approximately twice as many major weapons-platforms as MARCOM now possesses and the need to compensate rapidly for current lack of capabilities and numbers, while ultimately creating a balanced force."

The sub-committee also recommended what areas should be given priority to produce a balanced fleet. In order of priority these included:

- a. that contracts be let immediately for the CPF program and for the follow-on program (16 frigates);
- b. that orders for 18 more Aurora aircraft be placed immediately, in order to significantly improve MAPCOM's capabilities in the shortest possible time, and to provide an ongoing, enhanced capability;
- c. that a significant mine-countermeasure capability be acquired by MARCOM (4 minehunters, 9 minesweepers);
- d. that more diesel-electric submarines be acquired by MARCOM (total 20);
- e. that missile-equipped fast patrol boats be acquired (12 FPBs); and
- f. that the existing Auroras be equipped with air-to-air and air-to-surface missiles, and the Trackers with rockets.

10. (C) The Department analyzed the sub-committee's report and provided a Departmental Review of the recommendations. The immediate reaction of the Department was that the sub-committee had identified the salient issues in providing for the defence of Canada's maritime

.../5

SECRET

CANADIAN EYES ONLY

000001

SECRET

CANADIAN EYES ONLY

- 5 -

interests. Indeed, the need for a renewed, balanced and fully capable maritime force to meet both national requirements and international commitments was indisputable. In this regard many of the recommendations in the Report were not far removed from those which military and civilian analysts within the Department would make in the absence of funding constraints.

11. (C) Specific DND comments on the balanced fleet priorities supported the sub-committee's approach even though DND funding levels at the time were recognized as being inadequate by the Senate of Canada. The DND response to the Senate report can be summarized as follows:

- a. The construction of six CPF's and the update of four Tribals will provide ten capable surface warships in the next decade. This number falls far short of the force level of 24 approved by Cabinet in 1977 and does not address the NATO critical shortfall of surface combatants. For these reasons, the naval staff has assigned the highest priority for a follow-on programme. The department also recognizes that the Oberon Class and Sea King helicopter will reach the end of their operational utility later this decade;
- b. The Department supports the suggestion that the acquisition of 18 additional Aurora LRPAs would be a cost effective manner in which to significantly improve the capabilities of the Maritime Command in the shortest possible time. In this regard, it is noted that the reduction in fleet size from 33 Argus to 18 Aurora, which was made necessary by budgetary constraints, does not provide sufficient aircraft to meet the full range of commitments on both coasts, together with the requirements for surveillance in the Canadian Arctic; and
- c. Diesel-electric submarines provide a cost-effective means to counter surface shipping and the submarine threat. Their combat capabilities are complemented by the peacetime utility of these submarines for ASW Training. Even though it is considered that higher priority should be accorded to making good the deficiencies of the surface fleet in the immediate future, ongoing studies have already identified submarines as potential contenders for the later phases of the Ship Replacement Program to provide a balanced fleet.

12. (C) Capabilities Planning Guide Part II. An important guidance document entitled "the Capabilities Planning Guide" was produced by ADM(Pol) in 1984. This document which was an update of CPG 78 and incorporated into the then extant policy was the forerunner to the

.../6

SECRET

CANADIAN EYES ONLY

000602

SECRET

CANADIAN EYES ONLY

- 6 -

current CF Development Plan/CDS Guidance and provided an examination of the future force posture. The main elements of the maritime structure which were identified in the guide were:

- subsurface capability of four submarines
- surface capability of 24 fully combat capable warships
- over water capability of 18 long range patrol aircraft, 18 medium range patrol aircraft, and sufficient helicopters to fully outfit the decks available in the fleet including the three AORs in addition to the agreed NATO commitment of 10 shore-based helicopters for the defence of the maritime approaches
- mine clearance capability of 12 vessels
- appropriate command and control, and operational support units.

This document also emphasized the requirement to concentrate on improved air defence and ASW systems, balance of forces between coasts and the capability to form and sustain national Task Groups.

13. (S) NATO Defence Planning Questionnaire (DPQ)/Force Proposals. During the period a continuing series of Maritime Force Requirements Studies initiated by SACLANT highlighted that the Forces assigned to SACLANT were insufficient to fully accomplish the missions. In response to DPQ 84 Canada assigned 14 DD/PP. These forces were to be employed in a total of 3 Task Groups; one consisting of two AAW and four ASW capable ships for CAST escort, MARCONFORLANT plans, or SLOC protection and the remaining two task groups would consist of four ASW escorts each. The total number of ships in the three task groups were designed by SACLANT to equal the number of assigned DD/PP (FY). This was unrealistic and the number of ships for each task group was far from adequate. This deficiency will be emphasized during the review of the studies which follow.

14. (S) Studies. During 1980-86 a number of maritime studies were undertaken within CMDO as part of the ongoing Force Development process:

- a. Future Surface Ship Study (FSSS) (Sep 82). This study was initiated by CMDO in 1978 to determine the composition of a surface fleet best suited to requirements in 1995 and beyond. The major conclusions were:

- (1) an air defence capability is required in the fleet,

.../7

SECRET

CANADIAN EYES ONLY

000003

SECRET

CANADIAN EYES ONLY

- 7 -

- (2) the case for a 30 frigate equivalent fleet, made in the 1977 argument should be vigorously pursued, and
 - (3) the possibility of mixing AAW and ASW variants of the CPF in SRP II and SRP III should be explored.
- b. Maritime Air Defence Study (MADS) (Jul 83). This study was conducted under the authority of CMDO and its purpose was to investigate and report on all aspects of Maritime Air Defence for the Canadian Navy until the turn of the century. The conclusions were:
- (1) the best option for rectifying the air defence deficiency was a 4000 tonne-type frigate carrying a comprehensive AAW suite,
 - (2) SRP III should be a combined AAW/ASW frigate,
 - (3) a balanced Canadian surface fleet must consist of ASW escorts with good self defence and AAW/ASW escorts with both good support and self air defence systems,
 - (4) the composition of the Canadian Task group required to escort convoys in the southern SLOC's should consist of eight AAW/ASW (non-TA) ships with four Towed Array ships. The Task Groups required for national tasking during wartime should consist of four AAW/ASW vessels along with four Towed Array ships. Thus the three TGs would consist of a total of 16 AAW/ASW Ships and 12 ASW Towed Array vessels for a balanced fleet, and
 - (5) NFR 90 was a possible candidate AAW/ASW frigate.
- c. Ship Replacement Program Phase II - Study of Requirements (Mar 84). In Jan 84 the DM and the CDS directed that an independent study be undertaken to determine if the current plans for SRP II represented the optimum course of action in the technological and strategic environment as it evolved over the next ten to fifteen years. Dr. Lindsey and MGen Sturgess completed their study in Mar 84 and concluded that:
- (1) the department should proceed with the SRP II program, ensuring that flexibility is maintained in the program definition to permit advantage to be taken of systems improvements which may become available, particularly with respect to anti-air and anti-missile defence systems, and

SECRET

SECRET

CANADIAN EYES ONLY

- 8 -

- (2) detailed and extensive studies should be pursued to determine the optimum structure for SRP III, again with maximum flexibility regarding platforms and weapons systems which may be available in the mid-1990s.
- d. Maritime Force Development Study 1/86 - Future Major Surface Combatants. The main purpose of this study was to incorporate the results of MADS into the updated FSSS, modifying and introducing new ship candidates to employ the proposed AAW system to best advantage, and determining the most promising composition of the surface fleet in light of these changes. The study concluded that:
- (1) there is a need for a Local Air Defence Missile System (LAMS) in the fleet beyond the Area Defence Missile System provided by TRUMP,
 - (2) the 30 ship requirement identified in 1977 should be vigorously pursued,
 - (3) there is a need for balanced Canadian Task groups consisting of four AAW, three Towed Array, three ASW ships, and
 - (4) NPR 90 is still a candidate for SRP III.
- e. Maritime Force Development Study 2/86 - Submarine Requirement Study. This study concluded that a force of 12 diesel-electric submarines are considered the minimum number required for Canada to maintain a balanced maritime fleet and to meet its national and collective commitments during wartime. Moreover, a fleet of 12 submarines would enable Canada to conduct essential surveillance operations in peacetime in conjunction with other maritime resources.
14. (S) Maritime Force Development Guides (MFDG). The earlier studies and follow on work including some Operational Research have been instrumental in the development of the MFDGs which examine the future naval requirements over a period 10-30 years. These guides, specifically 1983, 1985 and 1987, have been consistent in their assessment of the requirement for a balanced fleet of ships, submarines and aircraft. These documents have also closely examined the force levels required to meet the navy's wartime commitments. The requirement for 35 surface combatants, 11 SSK's and increased number of aircraft (LRPA, MRPA, Helo) have been highlighted in the 1983 and 1985 MFDGs. The 1987 conclusions were the same except the requirement identified 10-12 SSN's.

SECRET

.../2

03/06/87

SECRET

CANADIAN EYES ONLY

- 9 -

15. (S) Three Ocean Paper. In 1986, the Associate MND desired to brief his cabinet colleagues on an overall maritime strategy for each of Canada's three oceans. Consequently, a combined ADM(Pol)/DCDS paper was prepared for the A/MND entitled Canadian Strategic Maritime Requirements based on a three ocean policy consideration. This document provides an excellent appreciation of our maritime strategy and requirements. It will form the basis of this study and it is therefore intended to review/highlight this important paper in more detail in part II of this paper.

16. (S) Summary. This chronology of events to date establishes that the requirement for a balanced maritime force is based upon extensive studies and resultant Government decisions concerning maritime policy and capabilities. It also highlights that the Navy, due to the past financial limitations, has been constrained to a force structure which is not capable of fully meeting Canada's wartime requirements. It can be concluded therefore that there is a requirement for more surface ships, submarines and aircraft as well as an improved AAW capability in the TGs and a need to provide an MCM/coastal capability.

PART II - CURRENT SITUATION

17. (U) The aim of this part of the paper is to reiterate the major thrust of the current defence policy regarding changes to the maritime force structure, including the added dimension of nuclear propelled submarines (SSNs) as a fundamental aspect of the three ocean strategy.

THREE OCEANS

18. (U) The articulation of a three ocean concept, as reflected in the White Paper, added a northern maritime dimension to naval strategy, increased the prominence of the Pacific region, and emphasized the national sovereignty role for the navy. To this end, and coincident with closing the capability - commitment gap, a number of initiatives were undertaken in support of this strategy which included:

- a. building six new frigates in addition to the six currently under construction and the four destroyers being modernized;
- b. acquiring a fleet of 10-12 nuclear powered submarines to operate in the Atlantic, the Pacific and the Arctic;
- c. installing a modern, fixed, under-ice surveillance system in the Arctic;

.../10

SECRET

13-00000

SECRET

CANADIAN EYES ONLY

- 10 -

- d. developing new sonar systems and acquiring detection array towing vessels for better underwater surveillance;
- e. building minesweepers for the Naval Reserve;
- f. acquiring new shipborne anti-submarine warfare helicopters;
- g. purchasing at least six new long-range patrol aircraft; and
- h. modernizing the existing fleet of medium-range patrol aircraft.

19. (U) Although the centre of our focus shifted from purely NATO to North America in terms of the Arctic and Pacific, the Atlantic region is of primary strategic importance given that Europe still is considered the centre of gravity in the balance of power between East and West. In order to deter an east-west confrontation in Europe it is essential to demonstrate a capability to ensure that the sea lines of communication between North America and Europe will remain open and that rapid resupply and re enforcement of Europe can be assured. Hence, Canada's maritime commitment to the Alliance essentially remains unchanged, particularly with respect to the deterrent value of protecting the sea lines of communication (SLOCs).

FORCE STRUCTURE (General Purpose Maritime Forces - GPMF)

20. (S) Chapter eight to the CFDP (Annex A, Ref S), produced in response to the force structure outlined in the White Paper, and amplified in the MND Guidance and CDS Force Development Guidance documents, provides a description of all the activities needed to effect the transition from the current (1988) maritime force structure (Annex B, Figure 1) to the end state structure for the year 2010 that would close the capability commitment gap.

21. (C) This plan integrates all aspects of the necessary transition to end state, including major and minor equipment, personnel, training and infrastructure. In addition, it deals with the maritime forces in total, addressing the tasking and integration of Naval Reserves and Regular Force personnel. Moreover, it presents a balanced and logical development of the maritime forces to achieve end state. However, due to the nature and complexities of the number of parameters associated with this development plan, changes will be inevitable. Consequently, this plan will continue to be an iterative one, with amendments being inserted as policies, projects and data change.

.../13

SECRET

CANADIAN EYES ONLY

SECRET

CANADIAN EYES ONLY

- 11 -

SIGNIFICANT ACTIVITIES

22. (C) There are four major components to the current development plan for maritime forces. First is the introduction of CPF ships into the fleet. Second is the introduction of nuclear-propelled submarines into both the east coast and west coast fleets to meet the operational requirements in the three oceans contiguous to Canada. Thirdly, there is the expansion of the Naval Reserve and the formation of a comprehensive Maritime Coastal Defence Organization (MCDO). Finally, there is the improved capability of the west coast fleet and its respective infrastructure support. Due to the complexities associated with each of these activities, there will be a need to make organizational changes to the current force structure.

23. (C) The first phase of the ship replacement program will be the acquisition of six anti-submarine CPFs between 1989-1992. Another six CPFs will be procured during 1992-1996, as part of the second phase of the ship replacement program.

24. (C) Two activities which will have a significant impact on the operational effectiveness of the CPF ships are the Tribal Update and Modernization Project (TRUMP) and the New Shipborne Aircraft (NSA) Project. The former will ensure that the four tribal class DDH 280 class destroyers will be capable of operating as command ships in the Canadian Task Groups, of which the CPF ships will be an inherent part. This project will be completed by 1992. The latter project will provide a fleet of new helicopters which will be the major sensor and primary weapons delivery vehicle for the CPF ships. It is expected to acquire these helicopters between 1995-1999. It is of critical operational importance to the fleet that the NSA project be completed in full and on time.

25. (C) The second important component, of the provisional CFDP was to have been the introduction of nuclear-propelled submarines. The Nuclear Submarine Option Study (NSOS) was used as the source document to determine the various submarine requirements for the maritime force development plan. The first of these submarines was to have become operational in 1997.

26. (C) The third major component of the maritime force development plan is the increase in the Naval Reserve to meet their assigned roles for coastal defence, including mine countermeasures. Personnel will be increased within each naval reserve division to achieve the authorized end-state force structure total. Commensurate with the increased size of the Naval Reserve will be an increase in the resources provided for them to fulfil their assigned roles.

.../12

SECRET

03-0005

SECRET

CANADIAN EYES ONLY

- 12 -

27. (C) The Maritime Coastal Defence Organization (MCDO) is being established, along with a revision to the Naval Control of Shipping Organization (NCSO). Although both are inherently linked, they are separate functions, whose common though not exclusive facet is merchant shipping. Both organizations will be able, in time of hostilities or emergencies, to fulfil the roles of the Naval Reserves. In peacetime, they will be used to provide the objectives for NR training and exercises.

28. (C) A variety of vessels will be acquired for the Naval Reserves. The 12 Maritime Coastal Defence Vessels (MCDV), proposed as the first build under the Naval Reserve Minecountermeasures Project (NRMP), will have both a mine countermeasures and coastal surveillance capability. An additional project will be implemented to acquire six Inshore Surveillance Vessels (ISV) and six Coastal Surveillance Vessels (CSV), similar to the MCDVs, to replace the six Bay Class vessels currently used for officer training. Projects to acquire another six ISVs, six Minehunters (MH) and two MCM Auxiliary Vessels have also been identified. The latter two vessels will be acquired in 1988 to provide an initial MCM training capability prior to the delivery of the MCDVs.

29. (S) The final major component of the maritime force development plan will be the major changes to the composition of the west coast fleet throughout the force development period. This includes the introduction of Tribal destroyers (1987), helicopters (1987), towed array ships (1989), CPPs (1992), SURTASS ships (2000) and SSNs (2005). In addition, there will be phasing in of new minor war vessels, auxiliary fleet units, MCM vessels and additional maritime patrol aircraft. Furthermore, the current naval officer training ships will be phased out, and replaced with other ships, and a revised training program will be adopted. Consequently, with these changes will come a commensurate need to revise the current headquarters, squadron staffs and fleet support organizations. Significant changes are anticipated: in some cases, only an increase in staff to the current structure will occur; in others, new organizations and infrastructure support will be required. An example of the latter case will be the formation of a submarine squadron and support facilities in the Pacific fleet to meet both operational and training needs.

30. (C) As noted above the Nuclear Submarines were an extremely important part of the integrated plan for developing Canada's Maritime force structure over the long term. Removal of the nuclear option will require a readjustment of the force mix which is discussed in the remainder of this study report.

SECRET

CANADIAN EYES ONLY

- 13 -

NUCLEAR-PROPELLED SUBMARINES

31. (U) Nuclear-propelled submarines, while having similar capabilities to those of conventional submarines, are more flexible and versatile platforms, which can meet current and evolving long-range ocean surveillance and control requirements in the three oceans. Because of their speed and basically unlimited endurance, they are uniquely capable in performing all sub-surface and surface sub-functions, including convoy protection. The SSN can also shift more rapidly from one area to another to meet changing circumstances. Essentially, it is a vehicle of manoeuvre while the diesel submarine is one of position. Given the vast distances in the three ocean areas in which Canada requires maritime forces and the SSN's outstanding endurance and flexibility, the acquisition of a fleet of nuclear-propelled submarines would serve to enhance the overall effectiveness of the Canadian navy. Annex B, Table 2, provides a comparison of SSN/SSK capabilities.

32. (U) Through their mere presence, nuclear-propelled submarines can deny an opponent the use of sea areas. They are the only proven vehicle, today or for the foreseeable future, capable of sustained operation under the ice. A program of 10 to 12 will permit submarines to be on station on a continuing basis in the Canadian areas of responsibility in the northeast Pacific, the North Atlantic and the Canadian Arctic. A fleet of nuclear-propelled submarines also provides a significant contribution to Surface Task Groups in undertaking operations in support of defending the Sea Lines of Communication. In this respect the SSN and Frigates with associated air support complement each other and provide a force multiplier effect. The SSK due to its limited mobility does not provide a similar capability in open ocean high speed of advance operations and therefore a simple one for one substitution would leave the overall fleet less capable.

33. (U) The acquisition of nuclear-propelled submarines has been given careful study, both in terms of cost and of the mix between surface ships and submarines. A suitable SSN for Canada would be comparable in cost to a NATO standard type frigate, but more expensive than a diesel submarine. The projected cost of replacing the current diesel submarines and acquiring a third batch of frigates would, however, be roughly equal to a 10 to 12 nuclear-propelled submarine program over the next 20 years. Consequently, since the SSN is the only platform that can operate effectively in the Arctic while simultaneously contributing significantly to the Atlantic and Pacific capability, it was deemed to be the best investment for the navy. Thus, although the number of surface ships would have been allowed to decrease below required levels, the resulting naval force would have retained a reasonable balance as well as

.../14

SECRET

CANADIAN EYES ONLY

SECRET

CANADIAN EYES ONLY

- 14 -

providing an Arctic capability. However, it is emphasized that given the inherent limitations on the operating capabilities of the SSK compared to the SSN, a force composition based on an SSK one-for-one replacement in lieu of the SSN would seriously hinder overall maritime operations both in a national and NATO context. In particular there would be a significantly reduced open ocean ASW capability which would have to be provided by other means.

PART III - MAJOR DEDUCTIONS FROM REVIEW OF PAST STUDIES

34. (S) In the broadest sense, these studies highlighted the fact that the navy was deficient and unbalanced in both numbers and types of platforms. These shortfalls, were initially identified in the Defence Review of 1975 (DSR II), which resulted in Government direction to prepare a future ship replacement program. The first Discussion Paper (Annex A, Ref B) concluded that:

- a. in war, Canada required a naval force of 30 surface warships; and
- b. in peace, an optimum of 26 surface combatants were required but, given financial and infrastructure constraints, a minimum of 24 was acceptable.

35. (S) This minimum of 24 combat capable surface vessels was agreed to by the Government in 1977 and re-confirmed in an assessment of the CPP program in 1980. The Ship Replacement Option (Annex A, Ref D), which provided added support for ships of the CPP type, formed the basic strategy for satisfying SRP II and III.

36. (S) As noted in an Aide-Memoire to TB (Annex A, Ref E), the Navy's future was 'mortgaged' on CPP and that if funds were not forthcoming then:

- a. Canada's commitments should be renegotiated; or
- b. the combat capabilities of the Navy be increased.

37. (U) Coincident with these conclusions, the Senate Report of 1983 (Annex A, Ref F), clearly identified the need for:

- a. a renewed, balanced fleet within 12 years; and
- b. a significant increase in both numbers/types of surface and sub-surface (SSK) platforms, including a doubling of the LRPA fleet, and a mine countermeasures capability.

.../15

SECRET

CANADIAN EYES ONLY

00001

SECRET

CANADIAN EYES ONLY

- 15 -

- a. a renewed, balanced fleet within 12 years; and
- b. a significant increase in both numbers/types of surface and sub-surface (SSK) platforms, including a doubling of the LRPA fleet, and a mine countermeasures capability.

38. (S) Follow-on analysis by DND supported the sub-committees recommendations. But, the decision to construct six CPFs and modernize the Tribal Class destroyers only provided for ten fully combat capable surface warships which fell short of the 24 approved by Cabinet in 1977. As a consequence, it was determined that:

- a. a second batch of CPF was required;
- b. SSKs be considered for later phases of the ship replacement program; and
- c. additional LRPA were required.

39. (S) Subsequent studies such as the FSSS (Annex A, Ref J), MADS (Ref K), LINDSEY/STURGESS STUDY (Ref L), MFDS 1/86 and MFDS 2/86 (Refs M, N) and MFDGs (Ref P), re-emphasized the need for a balanced composition of fleet resources, particularly in the mix of surface/sub-surface vessels. These were identified as being:

- a. a 35 ship (Frigate) fleet with a mix of AAW/ASW variants in SRP II and III, plus towed-array (TA) ships (NFR 90 is included as a candidate for SRP III);
- b. 12 SSKs or 10 SSNs;
- c. six LRPA;
- d. MRPA update; and
- e. Helo replacement (45 NSA).

40. (S) It was evident, however, that the number of major platforms envisaged exceeded the fiscal resources available. In producing a more affordable program under the current CFDP, it was concluded that the following mix would satisfy the minimum surface and sub-surface requirement inherent in a three-ocean strategy:

- a. 16-18 surface ships; and

.../16

SECRET

CANADIAN EYES ONLY

- 15 -

38. (S) Follow-on analysis by DND supported the sub-committees recommendations. But, the decision to construct six CPPs and modernize the Tribal Class destroyers only provided for ten fully combat capable surface warships which fell short of the 24 approved by Cabinet in 1977. As a consequence, it was determined that:

- a. a second batch of CPP was required;
- b. SSKs be considered for later phases of the ship replacement program; and
- c. additional LRPA were required.

39. (S) Subsequent studies such as the FSSS (Annex A, Ref J), MADS (Ref K), LINDSEY/STURGESS STUDY (Ref L), MPDS 1/86 and MPDS 2/86 (Refs M, N) and MFDGs (Ref P), re-emphasized the need for a balanced composition of fleet resources, particularly in the mix of surface/sub-surface vessels. These were identified as being:

- a. a 35 ship (Frigate) fleet with a mix of AAW/ASW variants in SRP II and III, plus towed-array (TA) ships (NFR 90 is included as a candidate for SRP III);
- b. 12 SSKs or 10 SSNs;
- c. six LRPA;
- d. MRPA update; and
- e. Helo replacement (45 NSA).

40. (S) It was evident, however, that the number of major platforms envisaged exceeded the fiscal resources available. In producing a more affordable program under the current CFDP, it was concluded that the following mix would satisfy the minimum surface and sub-surface requirement inherent in a three-ocean strategy:

- a. 16-18 surface ships; and
- b. 10-12 SSN.

A General Purpose Task Group (GPTG) consists of a minimum of two AAW and 5 or 6 ASW capable surface combatants. Canada's NATO commitments consists of at least two GPTG's. Since Canada also requires a GPTG on the West Coast, it is evident that despite this total of 28 units, the

SECRET

CANADIAN EYES ONLY

- 16 -

surface fleet will be deficient in overall numbers; and, in terms of a required capability, our Task Groups remain deficient in their air-defence capability.

41. (S) The SSN, however, remained (in 1988) an important component of the planned maritime force structure. It would have provided a capability in all three oceans which, along with other maritime resources (aircraft, surface vessels and fixed surveillance systems), would form a synergistic whole. It cannot be viewed in isolation and must be considered along with those other elements which constitute Canada's maritime defence capability. Since the SSN is no longer an acceptable option it will be necessary to restructure the Maritime Force Development Plan in order to provide a balanced and versatile capability to meet Canada's maritime defence needs. A large part of the SSN's capability can be replaced by the SSK since both platforms have unique and essential capabilities that cannot be provided by other means. Nevertheless, the higher mobility and endurance of the SSN makes it a more versatile platform that can be used in support of open ocean task-groups whereas the SSK is more properly employed in patrol areas. This relative loss of capability would leave our surface task groups deficient in their ability to conduct operations in defence of the SLOC, a deficiency that can be addressed by providing additional frigates. Moreover, there will be a marked reduction in military control capability in the Arctic Ocean.

PART IV - ALTERNATIVE MARITIME FORCE STRUCTURE

42. (S) In considering a credible alternative maritime force structure to that which embodies the deployment of a fleet of nuclear-propelled submarines, it is assumed that:

- a. the three ocean policy stands but with the caveat that some lesser military capability in the Arctic Ocean is acceptable than could have been provided by nuclear propelled submarines;
- b. the military threat will not change significantly in the next ten years; and
- c. Canada's maritime commitment to NATO will remain at current levels.

CANADA'S STRATEGIC MARITIME REQUIREMENTS

43. (U) As an independent state, Canada has a variety of national maritime interests and substantial maritime obligations. These have increased over the past two decades due to changes in economic and environmental circumstances, considerations of sovereignty and expanding

.../17

SECRET

CANADIAN EYES ONLY

SECRET

CANADIAN EYES ONLY

- 17 -

international activity. Bordering on three of the world's major oceans, Canada has a large continental shelf rich in oil, natural gas, fish and other exploitable mineral resources. In addition, the strategic importance of the Canadian Arctic archipelago has increased significantly in the same period.

44. (R) Our economic prosperity is tied to that of our principal trading partners, and is largely determined by the unimpeded flow of seaborne cargoes. Canada's three principal trading regions - the USA, Western Europe and Pacific rim nations, particularly Japan, are all heavily dependent on seaborne commerce.

45. (U) For the last 36 years, Canada has pursued its national security objectives mainly in the context of the North Atlantic Treaty Organization. This collective defence arrangement not only contributes to Canadian security and to deterrence, but also provides opportunities to advance Canadian views and interests and to play a responsible international role. Canada has no alliance arrangements with Pacific rim nations, other than bilateral agreements with the US. To maintain its credibility and to have a voice in the security and stability of the region Canada must develop and exercise a consistent Pacific policy.

46. (S) In the context of the NATO Alliance, current strategy dictates that the European based forces will need to be reinforced and resupplied in the event of any conflict outside of an immediate nuclear exchange. Therefore, keeping the SLOCs open in the Atlantic is neither a theory nor an option. It is a fundamental requirement for NATO as a deterrent posture in peace and a cornerstone to the conduct of a land and air battle in any European conflict. In times of peace this strategy is based on the resolve and capability of member nations to resupply Europe; in times of crisis or war both the resolve and the capability to reinforce and resupply NATO forces in Europe from North America must be exercised. A western military sustaining resupply operation will have to be established and maintained for as long as necessary. In the Pacific the economic shipping along the West Coast of North America including the strategic oil shipments from Valdez may need to be protected. Consequently, in both oceans there is a need and a reality to keep open the SLOCs; Canada has a vital role in maintaining control of these ocean areas. Even if in the long-term the level of tension between East and West in Europe is reduced to the point where forces in being in Europe may be reduced it remains vitally important in terms of deterrence that the sea lines of communication to Europe remain secure and be perceived to be secure in order to establish long term security based upon a capability to reinforce Europe if this should become necessary.

.../18

SECRET

000075

SECRET

CANADIAN EYES ONLY

- 18 -

47. (C) While any maritime threat in the Arctic would likely be directed at North America as a whole, the Arctic archipelago is sovereign Canadian territory and therefore a national surveillance capability as well as cooperative measures are required in order to contribute in a meaningful way to the defence of North America. Such military preparedness, firmly grounded in security, would at the same time reinforce in a very significant way the stated policy on sovereignty by demonstrating knowledge of what is going on in our own and adjacent waters.

48. (C) An overall national maritime control strategy must include a full range of early warning, tracking and assessment systems to provide the necessary surveillance of all activities on land, in the air, and at sea-both surface and sub-surface - which are of Canadian concern. Control also requires that response platforms exist to provide the capability and flexibility to meet the full spectrum of challenges, ranging from the conventional to the nuclear. To ensure effective control of Canadian territory, airspace and waters, the required surveillance and response systems must be balanced and coordinated to meet both national and collective requirements. Such a control strategy would help to preserve security while at the same time contribute to maintaining the sovereignty of Canada in the most immediate and direct sense - through the effective defence and protection of its territory and people.

49. (C) Canadian maritime capabilities required to implement a maritime control strategy are not identical for the Atlantic, Pacific and Arctic areas of interest. Moreover, commitments to allies in each ocean area are also different. Therefore, the strategic maritime requirements in each of the oceans, including coastal defence requirements represent the foundation of Canada's maritime control strategy.

50. (S) In the Atlantic, Canada must provide maritime resources to maintain control in the following Atlantic areas:

- a. the approaches to Canadian ports and inland waters including the 200 nautical mile exclusive economic zone;
- b. the Labrador Sea and Davis Strait approaches;
- c. the continental shelf and the slope regions off the coast;

Because of the alliance undertakings Canada also has maritime requirements in:

- d. the NATO CANLANT area including the areas outlined above;

.../19

SECRET

CANADIAN EYES ONLY

SECRET

CANADIAN EYES ONLY

- 19 -

- e. the provision of forces to ensure the freedom of the SLOC to Europe as a contribution to deterrence of general war; and
- f. the Greenland-Iceland-Norway (GIN) gap, which includes the Denmark Strait approaches.

51. (S) Although current surveillance systems, both fixed and mobile, in the Atlantic are adequate to cover certain areas of Canadian responsibility, including the southern CANLANT area, there are deficiencies in coverage which must be addressed. These deficiencies should be addressed by:

- a. developing and deploying Canadian SURTASS; and
- b. developing and deploying Canadian SOSUS system.

Sea-control also requires a more balanced mix of blue water resources (eg. Frigates/SSKs), than that which exists with current surface forces and long-range patrol aircraft assigned to the Atlantic and Pacific areas.

52. (C) In the Pacific significantly increased trade both along the North American coast as well as from British Columbia to the Pacific Rim trading partners dictates a need to demonstrate a capability to protect shipping in that Ocean. In particular the Strait of Juan de Fuca, the approaches to Prince Rupert and other ports require a credible Canadian surveillance and sea control capability.

53. (S) Current maritime resources in the Pacific are not adequate to meet both the national and collective maritime commitments in the area. Therefore, in order to rectify the surveillance deficiencies, efforts must be directed to:

- a. acquire and deploy Canadian SURTASS;
- b. increasing the number of Maritime Patrol Aircraft; and
- c. acquire and deploy Canadian SOSUS.

54. (S) The Canadian Arctic owes its strategic importance to its location between the superpowers. Although the threat of an aerospace attack across the Arctic by the Soviet Union has been a key issue in Canadian and US planning for continental defence for almost forty years, the operational use of the Arctic by nuclear submarines is a relatively new emerging strategic factor. Due to technological and strategic developments, both superpowers are making increasing use of this formerly

.../20

SECRET

CANADIAN EYES ONLY

SECRET

CANADIAN EYES ONLY

- 20 -

impassable region as a submarine operating area. Hence, the need to ensure freedom of navigation in this area is fundamental and in the Canadian Arctic this responsibility clearly lies with the Canadian forces.

55. (S) There is an emerging requirement for a capability to monitor developments and to respond in an appropriate way to the challenges to security and sovereignty in the Canadian Arctic. The current capability does not satisfy either the requirement for surveillance or for reaction in the Arctic. Consequently, the actions required to correct deficiencies and to maintain control in the Arctic include:

- a. deploy operational Choke Point systems;
- b. develop and deploy CANUS Basin "SOSUS" or a Canadian Basin "SOSUS";
- c. deploy SURTASS to Davis Strait ice edge; and
- d. develop/deploy reactive vehicles for control, for which the nuclear-propelled submarine is ideally suited.

56. (C) Canada needs maritime resources to provide control over areas of national interest and to contribute effectively to western security. A combination of surveillance systems and reactive vehicles is a prerequisite for the former; a mix of surface, subsurface and air platforms capable of defensive and offensive operations is essential for the latter. Overall, a balance of maritime capabilities must exist within the national maritime force structure and between the allies concerned.

57. (S) The strategic requirements outlined above have to a large extent been incorporated in the 15 year CFDP. Since the SSN will not be acquired for purposes of either sea-control in the Arctic, or as part of the blue water fleet envisaged in the White Paper, the option of including conventional submarines (SSKs) as an alternative must be examined. In considering the SSK it is reiterated that Canada will be unable to exercise under-ice sea control in the Arctic region. Moreover, it has already been established that the SSK is not a suitable one-for-one substitute for the SSN; hence, a mix of additional SSKs/Frigates and aircraft must be examined.

DIESEL-PROPELLED SUBMARINE (SSK) REQUIREMENT

58. (C) As outlined above there is a policy base for submarines as part of a balanced force. Canada requires submarines across the "spectrum of conflict" from peacetime surveillance of the Canadian

.../21

SECRET

CANADIAN EYES ONLY

000078

SECRET

CANADIAN EYES ONLY

- 21 -

maritime areas of responsibility through to wartime operations. Para 31 through 33 highlighted the significant flexibility afforded by nuclear submarines in Canada's three ocean context. Without SSNs, other maritime vehicles must be considered in order to provide the essential capability requirements.

59. (C) Annex B highlights the capability of the modern SSK. It lacks the flexibility and mobility of the SSN in a three ocean context, particularly in its inability to operate under the ice in the Arctic. Its effectiveness against other submarines in what we described as "open ocean areas", where mobility is an essential feature, is also limited. Nevertheless, the SSK provides an essential contribution to maritime capability and in some missions matches or almost matches the capabilities of an SSN.

60. (S) Surveillance. The SSK is superbly suited for this role. With the endurance to remain on patrol, independently and covertly for up to 90 days without support, combined with comparable sensors to a modern SSN renders this vehicle a potent surveillance platform. Further, it is generally unhindered by the extremes of the Canadian environmental conditions and can range as far North as the ice edge in the Canadian Arctic as well as be tasked without assistance to any operating area in Canada's other two oceans. The peacetime employment of this vehicle is centered squarely in the surveillance of subsurface and surface ship activity in our national areas of interest and responsibility.

61. (C) Presence. There is little doubt that any incursion by another nation into Canadian waters of responsibility will be undertaken with greater concern and attention, knowing that Canada possesses submarines and could have deployed them in an area in which he wishes to operate. He will be obliged to seek alternative routes or consider the consequences of detection. Therefore, SSKs, like SSNs make a contribution to fulfilling maritime tasks by their very existence.

62. (C) Control. The SSK is an effective anti-submarine and surface ship warfare vehicle particularly if properly stationed. The capacity inherent in this vehicle to not only conduct surveillance operations for long periods, but to exercise control against any adversary is an important factor in the national requirement for SSKs, both in peacetime and during conflict. The submarine represents Canada's only Maritime asset which can operate in areas where an opposing force possesses air and surface superiority. In our collective arrangements with our NATO allies, Canadian SSKs would participate in "barrier" operations to prevent Warsaw Pact submarines from entering the Atlantic Ocean from stations in the GIN maritime region during conflict. In concert with other Canadian and Allied forces, SSKs could also form a reactive

SECRET

CANADIAN EYES ONLY

- 22 -

response to incursions through the Canadian Arctic archipelago into the Atlantic.

63. (S) SSK Force Levels. Twelve SSKs are required for Canada to maintain a balanced fleet and to meet national and collective commitments during conflict as outlined in MFDS 2/86 (Annex A, Ref N). Moreover, as shown in MFDS 2/86 a fleet of 12 submarines would enable Canada to conduct essential surveillance operations, in peacetime and tension, in conjunction with other maritime resources. They would provide a very capable mobile resource able to react to situations which warrant a Canadian maritime presence. As determined in this study, a force of seven submarines on the east coast and five submarines on the west coast would be required to carry out national and collective responsibilities. Accepting less than the minimum requirement for SSKs will significantly reduce Canada's overall surveillance and control policy in the Atlantic and Pacific oceans. Less than twelve submarines will also contribute to a reduction of surveillance and control capability in the open water/ice edge areas in the Eastern Arctic oceans. This loss in surveillance and control capability can be offset by the acquisition of additional aircraft or ASW capable surface ships, but will not fully cover the deficiencies addressed by submarines - hence the rationale for "balance" in all studies of Maritime forces.

64. (S) Infrastructure and Support. Discussions with other nations have highlighted a close relationship between support infrastructure, number of submarines, personnel and training and over all cost/operational effectiveness. This close relationship is reflected in the Maritime Command Study Report on the Personnel Structure of the Submarine Service of Canada, 22 April 1988, which made specific reference to the current situation with Canada's Oberon Submarines:

... both the RN and RNLN had proportionally twice the infra-structure in place to support their submarines.... the (Canadian) submarine force is too small to have a self-sustaining trade structure.... With trade progression geared to the surface world but skill and competence required in submarines, it becomes extremely difficult to produce viable career patterns within the submarine service.

65. (S) Surface Ship experience would also indicate that East and West coast infrastructure will need to be duplicated to at least some degree and be capable of managing all operations and support requirements. Submarine infrastructure and support requirements are extensive and are discussed more fully in Annex A, Ref FF to this report. Requirements worth noting include:

11/23

SECRET

CANADIAN EYES ONLY

010050

SECRET

CANADIAN EYES ONLY

- 23 -

- a. the emphasis on shore based maintenance for submarines vice on board maintenance at sea;
- b. the extensive use of shore-based machinery and tactical trainers;
- c. the requirement for specially trained submarine support staff - both civilian and military to conduct the major refits, dockings and support which are uniquely different to surface ship requirements;
- d. additional infrastructure to support submarine communications requirements;
- e. logistic support and infrastructure for submarine search and rescue;
- f. accommodation and working facilities for off-crew personnel; and
- g. sea training weapon certification and patrol analysis support.

It was deemed impractical to introduce most of these requirements into a national infrastructure base with the three OBERON class submarines. Much of the support was handled through off-shore training in the RN or RAN which over time was shown to be inefficient, costly and not operationally satisfactory.

66. (S) Infrastructure support for any number of Canadian submarines must include the requirements highlighted at Annex A, Ref FF, if the submarines are to be fully operationally effective. In essence, the investment in support and infrastructure is about the same for one to six submarines operating from the same base.

FRIGATE REQUIREMENT

67. (S) As highlighted throughout the background portion of this paper, the studies, reports and discussion papers have concluded that the navy needs to be more balanced and requires additional surface platforms to carry out its national and collective wartime commitments. The number of surface platforms has consistently been restricted by funding constraints; and hence, the navy is currently proceeding with a plan which will provide for 12 new frigates and modernize 4 older frigates while retaining some aging steam destroyers which were made to be useful for a number of years through the Destroyer Life Extension project. These measures in themselves are not sufficient to prevent the decline in

SECRET

CANADIAN EYES ONLY

- 24 -

both numbers and capability of the surface fleet. This shortfall from the minimum number of 24 would have been offset in part by the acquisition of 10 to 12 nuclear propelled submarines which, unlike the SSK, can contribute to the mobile blue water protective operations that the surface task groups are well suited for. However if the SSN is no longer an option, the naval capability would become unbalanced. Such a reduced defensive open ocean capability will definitely impact on our navy's capability in defensive/protective operations conducted by our three task groups since the complementary support capability of the SSN is no longer available. As has generally been accepted in allied naval circles, the SSK is a vehicle of position well suited to patrol specific areas such as choke points but not suited to the highly mobile operations of surface task groups. Consequently, even a one for one replacement of SSN's with SSK's would result in a marked reduction in open ocean protective ASW capability. In order to compensate for this relative loss a new mix of submarines, frigates and aircraft would have to be struck in order to maintain a balanced and versatile capability.

68. (S) As stated above, the deficiency in the number of platforms and AAW capability has been repeatedly substantiated. In 1977, an indepth study presented in a Discussion Paper (Annex A, Ref B), identified that 30 ships were required to meet Canada's wartime commitments; however, a fleet of only 24 was approved due to funding constraints (Annex A, Ref C). It is important to note that this requirement for 24 ships, which was considered the minimum to conduct our peacetime commitments, has remained as the approved goal until the 1987 White Paper even though studies over the past decade consistently indicated that 24 ships were insufficient. This was concluded in the Future Surface Ship Study of 1982, and the Maritime Force Development Study 1/86, which recommended that the case for a 30 frigate - equivalent fleet should be vigorously pursued. The MFDG's also have reinforced the requirement for a more balanced mix of platforms and a significantly higher number of surface platforms to satisfy our Task Group commitments.

69. (S) Several operational studies, both national and allied (Annex A, Refs BB, CC, DD) have been conducted, which indicate that for the 60 - ship convoy, the number of required escorts is 6 to 10. SACLANT's Force Proposals identifies over the long term a requirement for Canada to provide two General Purpose Task Groups in the Atlantic with seven combatants each (two AAW, five ASW) plus five additional combatants (two AAW, three ASW) for combined General Purpose Task Groups including SNFL. In addition to these commitments, a task group of 6 to 10 ships is necessary to conduct the defensive/protective operations in the Pacific SLOCs. The NATO Defence Planning Committee/D(87)/4 Nov 87 reiterated the serious shortage of escorts by the following statement:

.../25

SECRET

CANADIAN EYES ONLY

000002

SECRET

CANADIAN EYES ONLY

- 25 -

"For escorts, Canada will remain substantially below the overall number and availability status sought by SACLANT throughout the period, and the requirement to increase the number of escorts available within 30 days to 19 post-1992, will not be met due to the cancellation of the third batch of eight escorts and the maintenance of a naval force in the Pacific."

In the same document SACLANT has also expressed his concerns as follows:

"Canada has provided about 50% of the escorts available in the WESTLANT area. The reduction in total numbers of Canadian escorts available within 30 days, as a result of the introduction of new ships, is therefore a matter of concern. In addition, the goal to plan for an increase in escorts to 19 in the post-1992 period will not be implemented. The recently announced plans to acquire a fleet of 10 to 12 SSNs will provide for a significantly improved submarine warfare capability, although it will not address SACLANT's most pressing deficiency, the lack of modern ASW escorts. SACLANT therefore continues to place high priority on Canada continuing to meet the previously committed levels of escort forces assigned."

70. (S) It had been established previously that three balanced task groups, one in the Pacific and two in the Atlantic would provide minimal levels of capability for national and collective maritime defence needs. The specific Task or Mission assigned to a particular task group is dependent on circumstances and will determine the actual composition of the task group in accordance with accepted NATO doctrine. A balanced task group assigned the task of protecting a group of ships in the Atlantic would require a minimum of seven frigate type ships with their associated helicopter support (SACLANT's NATO Doctrine). Thus to deploy three such groups would require 21 combat capable and available ships. As with submarines surface ships are not available for operation 100% of the time due to the need for maintenance, repairs, training and logistic requirements. Assuming a future Operational Availability of 80% (which is optimistic in light of current experience), a 30 ship frigate fleet would allow 24 to be operationally available and with a fleet of 24 frigates only 19 would be available which is two short of the number required for three Task Groups of seven ships each as per NATO doctrine. Naval planners had accepted this shortfall on the assumption that either we could increase the availability in time of need or that perhaps not all three task groups would have missions assigned that are equally onerous. It is extremely difficult to quantify the impact on the success or failure of future operations should fewer frigates become a reality.

LONG RANGE PATROL AIRCRAFT (LRPA)

.../26

SECRET

CANADIAN EYES ONLY

11.01.33

SECRET

CANADIAN EYES ONLY

- 26 -

71. (U) Surveillance on and beneath the sea will be substantially enhanced by the naval programs already discussed. Even those naval assets, however, will not be sufficient to conduct year-round surveillance of the three oceans contiguous to our territory. The LRPA best provide the capabilities to conduct sub-surface surveillance and anti-submarine operations which are the roles for which they are primarily designed. Although Canada's current inventory of Aurora aircraft are not fitted, some allied LRPA do provide air warfare capabilities and, depending upon the sensors and weapons fitted, have poor to good surface warfare capabilities. Their major advantages are speed which enables them to respond quickly to a developing incident and relatively long endurance compared to helicopters or Medium Range Patrol Aircraft (MRPA). They are, however, inherently vulnerable in a hostile air environment, and can be constrained by meteorological conditions in the operating area (eg. fog, icing).

72. (U) Our capabilities, however, are limited by the number of our long-range patrol aircraft. The flying time available from the present fleet of 18 Aurora aircraft is insufficient. Effective surveillance on the Atlantic Coast with 14 Auroras is barely achieved. On the Pacific, with only four Auroras, it is less than adequate. Our surveillance of the Arctic has increased, but we are still only able to launch a three-day patrol approximately once every three weeks. This problem was examined by the Senate Committee (Annex A, Ref F) and concluded that 18 additional Aurora should be added to the existing fleet of 18, for a total of 36. The White Paper also noted the deficiency and to remedy the situation, in part, stated that an additional six LRPA will be acquired.

73. (S) The Aurora fleet will continue to be deficient because it lacks also the total number of operational aircraft to meet our other commitments to NATO. Canada's NATO goal (Annex A, Ref) is to "increase the assignment of MPA available within 30 days from 14 to 18 by 1994." Without additional resources this will leave our national defences depleted. A request to "increase the assignment to 24 beyond 1994" will not be implemented since there are "no current plans to further increase the number of assigned MPA". A get-well project must seek to address these operational problems without creating unnecessary shortfalls in our own national requirements.

74. (S) The rationalization for numbers of LRPA was carried out by ORAE/DMOR Staff Note 75/4 and the fleet size was set at 24. The tasks and missions have been revised since then and the number of aircraft required to meet these goals may have to be re-rationalized by a further DMOR study. However, current Maritime Tasks MC5 and MC9 state the requirement for 24 fully operational LRPA. In fact, Table 4-3 of the

SECRET

127
111113-1

SECRET

CANADIAN EYES ONLY

- 27 -

MFDG calls up a total requirement of 48 LRPA. Therefore an LRPA fleet size of 24 is well documented and justified.

75. (S) The A1677 SOR(P) for CP140 Aurora Update identifies the major operational deficiencies in relation to Maritime Patrol Aircraft (MPA) wartime tasks. It comments that "the Capabilities Planning Guidance Document states explicitly that the most important wartime task of NATO's maritime forces is the collective defence of the sea lines of communication (SLOC). The Tri-MNC Concept of Maritime Operations, Feb 83 and both the Air Force Operational Development Guide and Maritime Force Development Guide reflect the importance of MPA in SLOC support. The SLOC-support mission highlights most clearly the operational deficiencies of the Aurora because it places the aircraft in direct confrontation with Soviet forces. It concludes that "the probability of the CP140 operating wholly effectively and surviving in a hostile environment is low. These outstanding deficiencies must be remedied if we are to meet the spirit of our NATO commitments".

76. (S) The requirement for the Aurora to carry out independent operations in a hostile environment will increase significantly if there is no SSN support to the Task Group conducting SLOC operations. This capability gap in ASW filled by LRPA highlights the deficiencies identified in the SOR(P) and they will become even more critical. Without the SSN it is clear that the numbers and capability of Canada's Long Range Patrol Aircraft will need to be reviewed in consonance with a review of submarine and Frigate requirements if a new balance is to be struck.

77. (S) To effectively meet the commitments of overall maritime surveillance and control of the contiguous oceans, both surface and sub-surface, and provide the flexibility to meet both national and allied interests, the LRPA becomes a critical element in the fleet mix. To provide control of the contiguous ocean areas of interest balanced surface, subsurface and air platforms for response are required for each ocean area. More importantly, to respond to surveillance information in the Arctic, the only reactive vehicles available are the SSN or LRPA. Without the SSN option the reactive capability gap must be filled to the extent possible by the LRPA. To overcome this deficiency we must renew our previous commitment to pursue the acquisition of the additional mission capable LRPA. In addition, significant R&D effort must be directed toward air sensors and weapons to increase our surveillance and control capabilities in the Arctic. The LRPA will be required to operate in conjunction with the fixed surveillance systems and provide localization information using sensors such as ice penetrating sonobuoys. It must also be equipped to prosecute contacts with a weapon delivery system capable of operating through the ice. Such capabilities

.../28

SECRET

CANADIAN EYES ONLY

010135

SECRET

CANADIAN EYES ONLY

- 28 -

are not immediately available suggesting that some R&D effort may be necessary in this area.

78. (S) Furthermore, the SSK due to its restricted mobility relative to an SSN will require more air support to investigate, localize and if necessary prosecute SSK detections. It is reasonable therefore to conclude that additional mission capable LRPAs will be required. In the longer term significant R&D effort will be required in airborne weapons and sensors that are capable of operating in the Arctic.

Medium Range Patrol Aircraft (MRPA)

79. (S) The current Force Development Plan already includes a project to modernize Canada's fleet of Medium Range Patrol Aircraft. As with the plans to modernize the LRPAs and acquire six additional such aircraft, the cancellation of the SSN project will have the effect of raising the priority of modernizing or replacing the MRPA.

80. (S) Regardless of the options issue, to formally state Canada's response to challenges within our own waters and provide surveillance of our sea jurisdictions, we have been developing a clear concept of strategic coastal defence. Although not fully articulated at this time it is evident that along with the Maritime Coastal Defence Vessel (MCDV) and submarines there is a requirement for effective air support in both the surveillance and denial roles. The MRPA, or as it may be better described as a Maritime Coastal Defence Aircraft (MCDA), is considered vital and necessary for these tasks. With a reduced submarine capability, the MCDA/MRPA will be called upon to fill that capability gap.

COASTAL REQUIREMENT

81. (S) As has been stated previously one of the primary areas of concern to Canada is the Arctic region. Canada has recognized through extensive studies that there is an essential requirement to provide undersea surveillance as the minimum capability in the Arctic. Consequently a project has been initiated as described in the following:

- a. Arctic Sub-Surface Surveillance System, M1502. This project is directly linked to the White Paper initiative to provide surveillance and control in Canada's Arctic.

①

.../22

SECRET

0:0636

SECRET

CANADIAN EYES ONLY

- 29 -

82. (S) With the demise of the SSN project it is essential that this undersea surveillance project be given higher priority and accelerated in order to at least provide a surveillance capability in our third ocean.

83. (C) Within the context of Canada's allied commitment, the protection of ports, inland and territorial waters remains primarily a national responsibility. The present Canadian governmental structure divide the responsibilities associated with the various activities involved in the defence of our coast. DND is responsible for the conduct of operations at sea, including the water portion of any port, the protection of its own properties on land, and the conduct of operations against invading forces. Maritime Command's component dedicated to this mission, in times of tension and war, is known as the Maritime Coastal Defence Organization (MCDO), which is manned primarily by Naval Reserve. In addition to the shore establishments, the organization also will include minesweepers, minehunters, coastal surveillance vessels, inshore surveillance vessels, harbour surveillance vessels, EOD teams and diving inspection teams. MCDO will also be supported by coastal patrol aircraft. The requirement for a MRPA has been fully discussed in the previous paragraphs.

84. (S) A number of initiatives are underway to improve the capability of our coastal defence and it is intended to continue to progress these important projects. The CP Development Plan has summarized them as follows:

- a. Naval Reserve will be increased to meet their assigned roles for coastal defence, including mine countermeasures;
- b. The Maritime Coastal Defence Organization (MCDO) is being established, along with a revision to the Naval Control of Shipping Organization (NCSO);
- c. Naval Reserve Minecountermeasures Program (NRMP), M2242. This project covers the acquisition of twelve Maritime Coastal Defence Vessels (MCDV), which will provide a combined mine countermeasures and coastal patrol capability. These vessels will be procured between 1993-2000;
- d. Mine Countermeasure Vessels Auxiliary (MCM Aux), M2438. Two vessels will be acquired in 1988 to provide an initial MCM training and capability prior to the delivery of the MCDVs;
- e. Maritime Coastal Defence Organization/Minor War Vessels (MCDO/MWV), M2328. This project covers the acquisition of

.../30

SECRET

CANADIAN EYES ONLY

000657

SECRET

CANADIAN EYES ONLY

- 30 -

twelve coastal vessels to replace the six Bay Class officer training vessels, three yard diving tenders (YDT) and three yard ferry craft (YAG);

- f. Inshore Surveillance Vessels (ISV), M5XXX. Another six ISVs will be procured to replace the remaining six YDTs and YAGs;
- g. Mine Hunters (MH), M5XXX. The final project to ensure Canada maintains a credible coastal defence force is the acquisition of six state of the art, low signature mine hunters;
- h. Naval Presence in the Province of Quebec (NPIQ), G2016. In response to government direction, it is planned to increase enrolment and retention of francophone Canadians in the navy by increasing their opportunities to serve in Quebec. It is intended to construct a Naval Reserve Training Centre (NRTC) which will contain: Naval Reserve Headquarters, a training centre, accommodations and messing for the training centre and the Naval Reserve Division (NRD), HMCS MONTCALM; and
- j. Naval Reserve Divisions (NRD), G2245, G2246, G2247. Three new NRDs have been created in Quebec at Chicoutimi, Rimouski, and Trois-Rivieres.

PART V - SUMMARY

85. (U) There is great consistency evident in all available documentation dealing with Canada's Maritime Defence requirements that have been studied over the past 15 years. Canada's Maritime Defence needs are dictated by geography and foreign policy. Foreign policy has consistently indicated that Canada will pursue international peace and national security through a modest but nevertheless firm commitment to an allied approach to deterrence and, as nation building continues, also to the affirmation of national sovereignty. The reality of Canada's geography dictates the need for a large scale surveillance capability in three different oceans and, to the extent that Canadians require, mobile naval forces that can exercise sovereign presence and control over the vast ocean areas that are our borders and at the same time committing some of these forces to keeping the seas free for commerce between western allied nations.

86. (S) The DND planners, faced with large scale commitments alongside severely constrained resources, have consistently concluded that the best capability that can be provided is a mix of frigates, submarines and aircraft configured to support a versatile general purpose force supported by fixed surveillance systems and the command and control

.../31

SECRET

CANADIAN EYES ONLY

01/11/05

SECRET

CANADIAN EYES ONLY

- 31 -

capability that will allow rapid deployment and control. The many strategic considerations and force planning factors that departmental planners from both the ADM(Pol) and VCDS groups of NDHQ have developed over the past decade are appended in the attached discussion paper prepared for ministers in Aug 86. This paper has been reviewed and is considered to be valid in 1989.

87. (S) The 1987 White Paper on defence has again been reviewed in conjunction with all major policy statements and capability studies dating back to the 1970 White Paper. This review has led to the conclusion that Policy as it relates to maritime defence has generally remained consistent throughout the period involving several changes of Government but that emphasis within the policy framework has shifted. While the level of commitment of maritime forces to NATO has essentially remained static there has been an increase in commitment to sovereignty requirements particularly in the Arctic and our coastal areas. As a result of this increased emphasis on National vice Collective defence there has been an apparent shift of the "center of gravity" of our maritime effort from Europe to North America. Naval planners responded to this shift by including plans for an enhanced coastal surveillance capability, a limited mine countermeasures capability and a nuclear propelled submarine capability. The nuclear submarine was chosen because it provides a range of capabilities which contribute to a balanced and versatile force. While there are other options to contribute such a capability to our total force the Nuclear Propelled submarine is the only one which is capable of operating effectively in the Arctic ocean. This current study effort has concluded that while there are viable alternatives to an SSN program all of these alternatives entail an Arctic capability that falls short of the sea denial or sea control missions that were perceived to be necessary capability options by military staffs. This means that while a revised force structure involving conventional submarines, frigates, aircraft and fixed surveillance systems can be designed to provide a three ocean capability our capability in the Arctic will be restricted to subsurface surveillance by fixed sensors and air patrol at least in the medium term. The Canadian Government will therefore have military information and intelligence as to what is transpiring in the third ocean but will need to rely on diplomatic rather than military capabilities to deal with that information.

88. (S) In considering maritime force structure alternatives to the SSN option and reviewing the many force development studies one is inexorably drawn to the conclusion that a reasonable alternative will include a mix of new frigates and conventional submarines. It is clear from the shift in emphasis towards North America on the resultant three ocean strategy a balanced force will include inter alia:

.../32

SECRET

010039

SECRET

CANADIAN EYES ONLY

- 32 -

- a. a surveillance capability in all three oceans;
- b. a submarine barrier capability in the Pacific and Atlantic;
- c. two task groups for national defence in the Pacific and Atlantic approaches, including organic helicopter support;
- d. one task group for contribution to the protection of allied shipping in the Atlantic, including organic helicopter support;
- e. Maritime Long Range Patrol aircraft in support of b, c and d above;
- f. Maritime Long Range Patrol aircraft for Arctic Surveillance and limited presence in that ocean;
- g. Maritime Coastal Patrol aircraft in support of b and c above;
- h. Coastal and Inshore Patrol vessels including a Mine Countermeasures Capability;
- j. Communication and Information systems in order to exercise command and control over our forces; and
- k. Training, Logistics and support infrastructure including adequate peace time establishments that will ensure combat ready and available forces.

89. (S) The majority of these requirements have been catered for in the current Canadian Forces Development Plan; however, a cornerstone of this plan had been the acquisition of 10-12 nuclear-propelled submarines which would have contributed in a variety of ways to the overall maritime capability requirement in our three oceans.

CONCLUSIONS

90. (S) In studying alternatives to the SSN it is concluded that no simple solution such as a one-for-one substitution of frigates or conventional submarines would provide the necessary balance in a cost-benefit sense. In a relatively unconstrained sense an alternative of eight additional frigates and 10-12 conventional submarines can be supported by available military studies.

91. (S) Affordability and Phasing. The impact of re-inserting Phase III of the Ship Replacement Program as well as the conventional CASAP project has been examined. Several assumptions were made in order to

SECRET

SECRET

CANADIAN EYES ONLY

- 33 -

scope this problem and it must be emphasized that the conclusions reached are tentative. With respect to the SSK it was assumed that a first batch of six could be procured within the 15 year planning period and that they would be delivered at the rate of one a year starting in 1996/97. It was further assumed that SRP III would follow immediately after SRP II and would be so phased as to deliver six frigates within the planning period. With these adjustments as well as some additional R&D effort and a relatively minor increase in the resources allocated to Patrol Aircraft it was determined that there would be a relative decrease in capital required over the next seven years followed by an increase starting in FY 1997/98 to the end of the planning period. The resultant net increase over the next 15 years would likely be in the order of \$1.5B.

92. (S) Finally, it is concluded that a feasible and affordable alternative to the SSN based maritime force structure is possible with the understanding that a military control capability in the Arctic cannot be provided in the medium term but that Research and Development resources could be assigned to rectify this deficiency in the long-term by developing an independent propulsion systems for submarines and through-ice weapon and sensor systems for aircraft.

RECOMMENDATIONS

93. (S) Canadian strategic maritime requirements for the Atlantic, Pacific and Arctic ocean areas of interest have been examined in this paper. From this examination, and considering that the SSN is not an option, several recommendations were developed. These recommendations reinforce Canadian sovereignty and security and serve the broad strategic and security interests of the Alliance. They are summarized as follows:

- a. To meet the protective/defensive requirements and to ensure flexibility to respond to national and allied commitments a balanced fleet consisting of ships, submarines and aircraft fitted with a wide variety of sensors and weapons is required. To accomplish this the following should be procured -
 - (1) eight additional frigates either a NFR 90 or CPF Variant,
 - (2) 12 SSK's in two batches of six, and
 - (3) a minimum of six LRPA that are mission capable.
- b. To overcome deficiencies in current surveillance systems and to improve coastal defence the MRPA Update or a replacement should be given added priority.

.../34

SECRET

060691

CANADIAN EYES ONLY

SECRET

CANADIAN EYES ONLY

- 34 -

- c. To overcome the specific surveillance deficiencies in the Canadian Arctic, the Arctic Array project should be accelerated.
- d. To support the above initiatives and improve Canada's overall defence capability R&D efforts should be pursued as follows -
 - (1) initiate R&D for non-nuclear propulsion system,
 - (2) continue NAAWS R&D for local air defence payload,
 - (3) initiate R&D for through-ice sensor/weapons system, and
 - (4) cooperate with the US to develop and deploy an operational surveillance system in the Arctic Basin.

(WANG ID #1005D)

SECRET

CANADIAN EYES ONLY

000692

SECRET

CANADIAN EYES ONLY

ANNEX A
TO 11900-1 (CMDO)
DATED NOV 88

CMDO DISCUSSION PAPER

FLEET MIX ALTERNATIVES STUDY

REFERENCES

- A. Defence Structure Review II 640-75/641-75 MC 9 Nov 75
- B. Maritime Forces Surface Requirement DND-8-77 DP 4 Nov 77
- C. Maritime Forces Surface Requirement 545-77-RD 28 Dec 77
- D. Ship Replacement Options 5 Feb 81
- E. CMDO Aide Memoire to Treasury Board 19 Jul 82
- F. Report of the Sub-Committee on National Defence of the Standing Senate Committee on Foreign Affairs "Canada's Maritime Defence" May 83
- G. Departmental Review Senate Sub-Committee Report Canada's Maritime Defence 26 Mar 84
- H. Capabilities Planning Guide Part II 1984
- J. Future Surface Ship Study Sep 82
- K. Maritime Air Defence Study (MADS) Jul 83
- L. Ship Replacement Program Phase II - Study of Requirements (LINDSEY/STURGESS) Mar 84
- M. Maritime Force Development Study 1/86 - Future Major Surface Combatants - 1986
- N. Maritime Force Development Study 2/86 - Submarine Requirement Study 4500-1 (DMFD) 1986
- P. Maritime Force Development Guides 1983, 1985, 1987
- Q. Canadian Strategic Maritime Requirements (Three Ocean Paper) 11900 DCDS/3120-41 (ADM(Pol)) 10 Oct 86
- R. Challenge and Commitment: A Defence Policy for Canada June 1987 (Defence White Paper)
- S. Canadian Forces Development Plan, Vol II, Ch. 8 (1988)
- T. MND Guidance 14 Jul 87
- U. CDS Force Development Guidance, 15 July 1987
- V. PDP A2326 Additional Long Range Patrol Aircraft - May 88
- W. A1677 SOR(P) for CP140 Aurora Update 12 Sep 86
- X. 3136-5-2326 (DMPP) 2 Aug 88
- Y. DPQ 88 Canada D/1 Item 18 Response to Force Goals
- Z. 11500GT-A2234 (DMA) 17 Oct 88
- AA. MAG Standing SOR for MRPA 1 May 86
- BB. 1989-94 Force Proposals, Vol A and B, 1987
- CC. The Task Force Defence Planning Model and DMOR Project Report 314, June 1986
- DD. Protection of Shipping in the North Atlantic, Conference Proceeding, 19-20 May 82
- EE. DPC/D (87) 4 Nov 87
- FF. SOR 11900-CASAP-001 (DMRS) 10 Dec 86

A-1

SECRET

CANADIAN EYES ONLY

000693

ANNEX B
TO 11900-1 (CMDO)
DATED 17 NOV 88

STRUCTURE OF GPMF

1. (U) The structure of General Purpose Maritime Forces is outlined in Figure 1. This chart displays the various bases, stations, support units, training establishments, Reserve Divisions and the NCSO. In addition, the disposition of the major fleet units is highlighted. The force levels and disposition of minor war vessels and auxiliary fleets are not included.

2. (U) The distribution of personnel to the various units is also presented in Figure 1. The totals are Regular 9,730; Primary Reserves 3,450; and Civilians 6,471. The Naval Reserve have been allocated to the Naval Reserve Divisions; however, they will be employed to implement/exercise/train for the MCDO and NCSO. The totals presented were extracted from the REMAR lists of 1 Apr 88. It is not intended to continually readjust the current figures to reflect minor changes; therefore, only end state allocations will be amended.

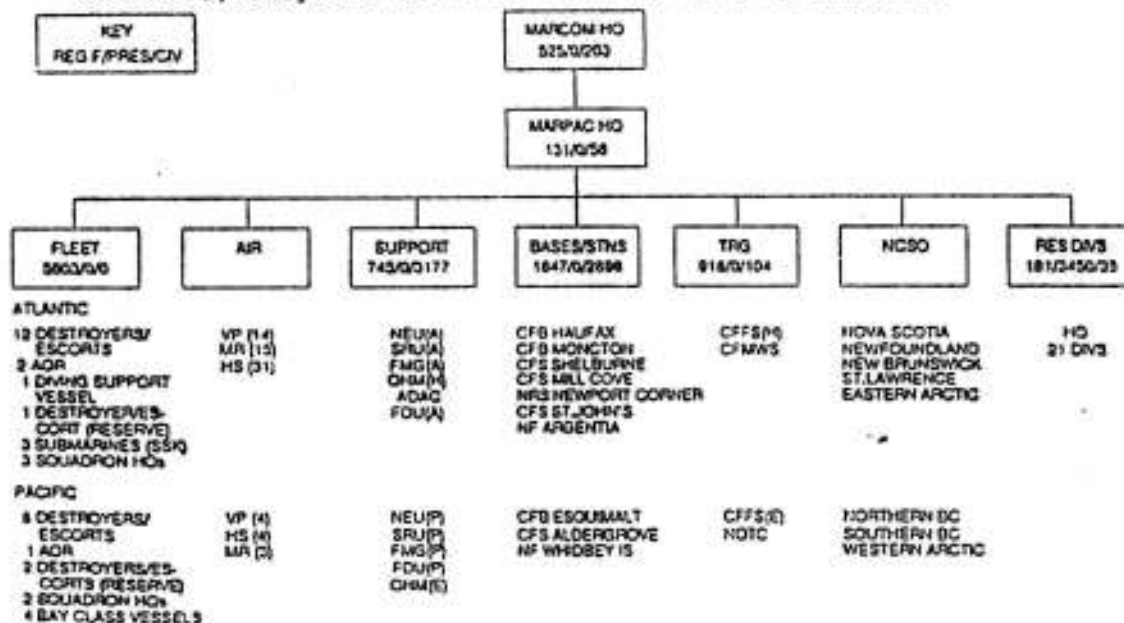


Figure 1 1988 Force Structure

B-1

SECRET
CANADIAN EYES ONLY

000694

PROJECT	FY	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03
BLUE WATER ASW																
M1403 CPF		T	O			F										
M1700 TRUMP		T	O			F										
M1521 SUP II		I			T	O				F						
A1676 NSA				D		T			O			F				
A2327 DEAKING ELE		I			F											
M2518 MELTASP				I	T	O	F								I	
M1437 CANTASS		I	O			F										
M1637 SSN		O	I	T						O						
M1503 ARCTIC ARRAYS					D		I			O		F				
M1723 NICOM PAC					D		I									
M1821 MARPAC INFRA					I											
M2329 UHF DAMA		I			F											
M2244 NAV SS CTR				D		I	F									
A2220 GPOC REPL		I														
A3122 ADDNL LIPA			D	I	O	F										
A1877 AURORA UPDATE			D			I	T	O			F					
O1849 CAYMAN							I			F						
M2202 NN AES		I	F													
M1810 DCH 280 REPL										O		I			T	
M2100 SURTASS									O		I	T	O		F	
M2330 DIV TDR REPL										O		I			O	F
M2331 AOR EXTENSION								O		I						
M1833 AOR REPL															O	
M2777 IJFR 90 PD		O														

LEGEND
 D - DEFINITION
 I - IMPLEMENTATION
 T - TRAINING
 O - INITIAL OPERATIONAL CAPABILITY
 F - FULL OPERATIONAL CAPABILITY

(SHEET 1 OF 2)

Table 1 Time Phasing Chart

PROJECT	FY	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03
COASTAL																
M1728 DV BR APP		I	D	F												
A2234 TRACKER CLE		D			I		O			F						
G2245 NRD CHICOUTIMI		I	F													
G2246 NRD REMOUSO		I	F													
G2247 NRD TROIS RIVIERES		I	F													
G2218 NRD II			D	I	F											
M2242 NRMP/MCDO		D	I	T	O					F						
M2438 MCM AUX		I	F													
M1354 AUX FLT REPL		D	I				O								F	
M2328 MCO/MWV						D	I	O	F			I	O		F	
M3000 MINE HUNTERS									D		I	T	O			
M3000 ISV												D	I	O		
TRAINING																
M2237 TO3 CPT				I	F											
M2335 OP TRNR					I	F										
M2332 EW GEN3 TRNR					I	F										
M2333 AQ TRNR						I	F									
M2334 CST INFO TRNR					I	F										
PLANNING PERS STRENGTH																
REQ F		8905	8995	10057	10999	10141	10183	10225	10267	10309	10349	10340	10340	10340	10340	10340
P RES		3760	4211	4212	4313	4414	4515	4616	4717	4818	4919	5020	5121	5222	5323	5325
SUP RES		834	1888	2602	3735	3735	3735	3735	3735	3735	3735	3735	3735	3735	3735	3735
CV		6471	6471	6516	6501	6596	6631	6666	6701	6736	6771	6798	6823	6823	6823	6823

NOTES: 1. REQ F STRENGTH WILL BE INCREASED IN WARTIME BY 1200 (PMO, NONO USTG) TO BRING TOTAL TO 11,540.

(SHEET 2 OF 2)

2. PERS TOTALS INCORPORATE YEARLY INCREMENTS

LEGEND

D - DEFINITION
I - IMPLEMENTATION
T - TRAINING
O - INITIAL OPERATIONAL CAPABILITY
F - FULL OPERATIONAL CAPABILITY

Table 1- Time Phasing Chart (cont)

CANADIAN EYES ONLY

ANNEX B
TO 11900-1 (CMDO)
DATED 17 NOV 88

TABLE 2

SSN/SSK CAPABILITY COMPARISON

<u>Primary Submarine Tasks</u>		<u>SSN</u>	<u>SSK</u>
Surveillance and location of submarine and surface forces	Open Ocean	M	M
	Under Ice	M	N/L
	Shallow Water	L/M	M
Tracking and marking of submarine and surface forces	Open Ocean	M	N/L
	Under Ice	M	N
Clearance of submarines from a tactical area	Open Ocean	H	L
	Under Ice	H	N
	Shallow Water	H	M
Anti-surface offensive operations		H	H
Anti-submarine and anti-surface barrier operations	Open Ocean	H	H
	Under Ice	H	N
	Shallow Water	NA	H
<u>Other Tasks</u>			
- Tactical strike of land land targets		M	L
- Mine Laying		NA/M	M
- Special warfare operations	Shallow Water	N/A	M

- H - implies good capability against all envisaged targets
M - implies a solid contribution to the task, against the majority of targets foreseen to 2010
L - implies a limited capability, depending on the target
N - implies no to limited capability
NA - indicates tasks not normally appropriate for this case of submarine