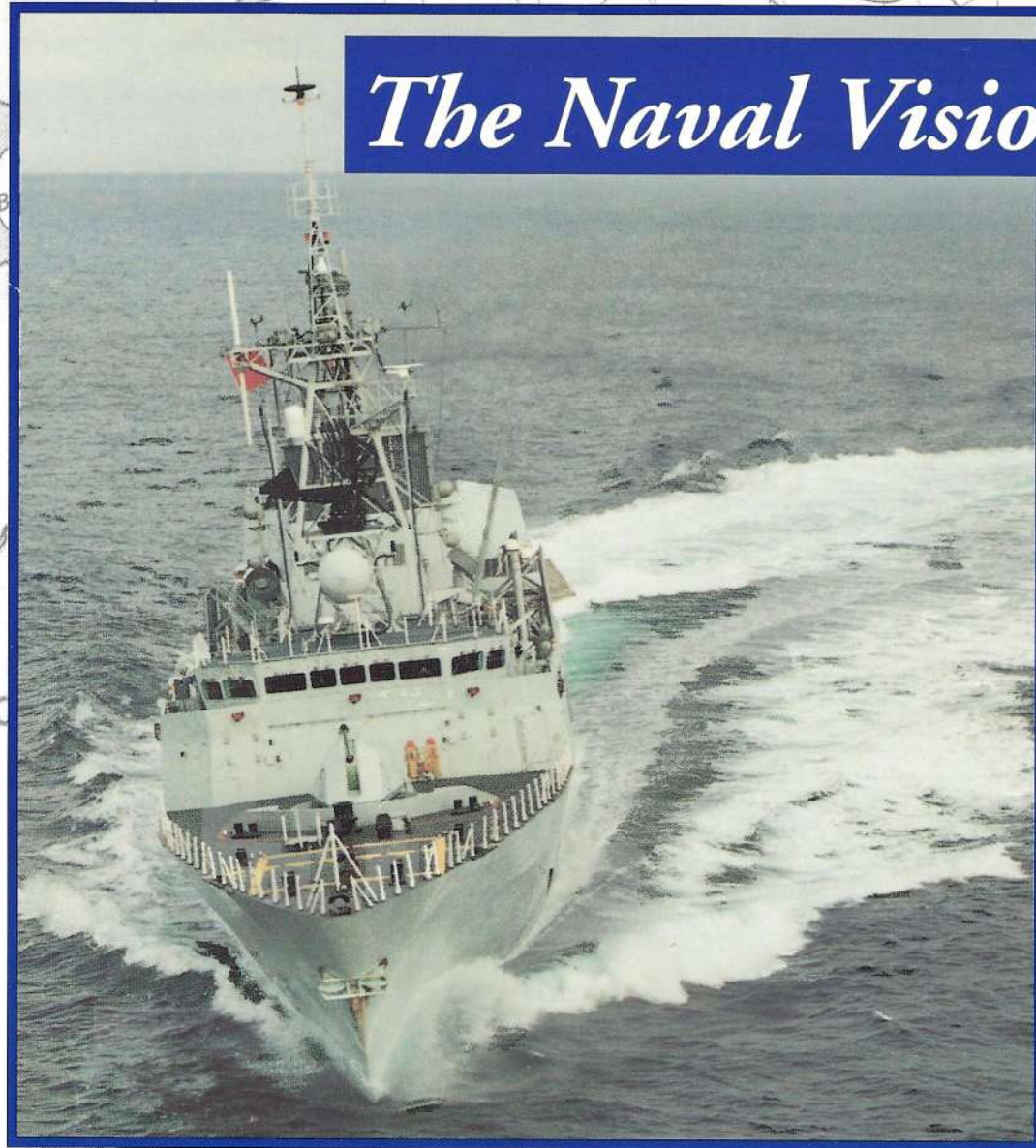




MARITIME COMMAND

The Naval Vision



**CHARTING THE COURSE FOR
CANADA'S MARITIME FORCES INTO THE 21ST CENTURY**

Canada



MARITIME COMMAND

OUR MISSION

Maritime Command's mission is to maintain balanced, combat capable, general purpose maritime forces to meet Canada's defence objectives.

THE NAVAL VISION

The Navy exists to protect Canadian interests in the ocean areas adjacent to the Canadian coast and beyond. To do this we need a combat capable fleet, which entails far more than simply possessing modern warships. Achieving combat capability requires, above all, dedicated people, ashore and afloat, who have the opportunity to practice and develop their skills. The Navy of the future must sail, it must sail often, and it must be ready. Our job is to make it so.



Vice-Admiral P.W. Cairns, CMM, CD

le vice-amiral P.W. Cairns, CMM, DC

May 1994

FOREWORD

"*THE NAVAL VISION*: Charting the Course for Canada's Maritime Forces into the 21st Century" is issued under my authority as Commander Maritime Command. Although it is intended primarily to serve as a maritime reference document, I hope that it will also prove of interest to Canadians, whether in uniform or civilian, who want to know more about their country's continuing requirement for capable maritime forces.

This document describes the current state of long-range planning for the Navy, focusing on the capital plan and its implications for operations, personnel and training, and support. It is based upon my interpretation of the requirements for this country's Navy, and how I intend to meet those requirements. It also provides an overview of recent activities involving our maritime forces. I believe that at this juncture, as Canadians participate in the Defence Policy Review process, the Navy has a responsibility to make this information available to the widest possible audience.

Canada is a nation with extensive maritime interests, both at home and abroad. Providing our country with a maritime force which is both affordable and versatile enough to meet our diverse naval requirements has never been easy. Current naval planning seeks to reconcile these imperatives.

In order to meet the variety of operational challenges alluded to in *THE NAVAL VISION*, Maritime Command forces must be suited to all intensities of operations. They must be capable, not only of peacetime patrol and support to other government departments, but also United Nations operations in potentially threatening environments and, if need be, high intensity warfare. They must therefore have a broad base of capability and a wide range of expertise. Finally, they must have a balanced capability; in other words, they must be capable of operating and addressing threats in all three dimensions of ocean space: above, on and under the surface. Such a force will preserve the Navy as a positive instrument of national policy: one which allows us to perform stewardship obligations in home waters and grasp opportunities to contribute to global peace and security overseas.

Progress towards this objective must be measured, opportunities to hasten its achievement must be sought out and exploited, and it should be made clear to all - sailors and aircrew, servicemen and women in general, our civilian employees and the Canadian public as a whole - what the objective is and why it is important to each and every one of them. *THE NAVAL VISION* is designed to facilitate the realization of these goals.

Maritime Command Headquarters
FMO Halifax, NS

Quartier général du Commandement maritime
BPF Halifax, N-É

B3K 2X0



PART ONE

THE NAVY TODAY:

Serving Canadians at Home and Abroad

Since its creation in 1910, the Canadian Navy has served our nation with professionalism, pride and distinction. Its continuing significance as a leading Canadian institution is grounded in its contributions to our welfare and defence during this century's World Wars and the Korean conflict of the 1950s, in supporting deterrence throughout the Cold War, in establishing Canada's extended jurisdiction over vital living resources off our coasts, in promoting goodwill abroad and national unity at home, and through its many contributions to the vitality of communities across Canada. In the 1990s that legacy of service to, and on behalf of our citizens, continues.

As this century has unfolded, Canada's Navy and its maritime forces grew and adjusted to changing times and roles. That process of adjustment continues as our sailors, airmen, airwomen and civilian employees nurture the force we will need for the 21st century. As global events unfold, the possession of balanced, combat capable, general purpose maritime forces will let Canadians respond flexibly to security developments at home and abroad. Such a force provides our national decision makers with the tools required, both to address unexpected security challenges and to seize emerging opportunities to advance the cause of international peace and stability.

THE NAVAL VISION explains why Canada will continue to need a capable navy and maritime force well into the foreseeable future. It describes the actions being taken to ensure that our country can safeguard its most vital seaward interests as it greets the next century.

That transformation is already well advanced and is reflected in the incredible range of activities that engage your Navy today. The women and men who serve within Maritime Command have rarely been so operationally active, in so many parts of the world, as they have since the Berlin Wall collapsed in 1989, thrusting the world into a new era of hope and uncertainty.

A REVIEW OF RECENT ACTIVITIES

This decade has seen the range and number of naval activities increase markedly. These have covered the spectrum from participation in multinational enforcement operations in dangerous waters; through humanitarian assistance to foreign lands in desperate need; to an active programme of coastal patrol and support to other government departments in home waters.

Added to this list of activities is Maritime Command's normal programme of exercises designed to ensure our readiness for operations, as well as our continuous fulfilment of Canada's important commitment to the North Atlantic Treaty Organization's (NATO) Standing Naval Force Atlantic. Our contribution to that multinational flotilla, now in its twenty-sixth year, continues to underline alliance purpose, solidarity and friendship. Finally, superimposed on all of this has been the rigorous work involved in trialling, accepting and introducing the new HALIFAX and up-dated IROQUOIS Class ships to our fleet. In this period of transition, "spare time" for our dedicated sailors, air crew and civilian employees has been a rare commodity. Nevertheless, they are meeting the challenges of the 1990s with enthusiasm.



Veterans mark the 50th Anniversary of the Battle of the Atlantic.



INTERNATIONAL ACTIVITIES

The following is a snapshot of some of the specific benefits gained for Canadians by the work of their Navy internationally since the end of the Cold War:

- A Task Group of three Canadian warships, with their helicopters, participated throughout United Nations sponsored operations in the Persian Gulf that successfully liberated Kuwait. During hostilities, our maritime Task Group was responsible for coordination and safety of the coalition's vital ship resupply operations in the Gulf, which served eleven nations. This was also the only non-American theatre command responsibility. The Gulf War underlined the continuing utility of a flexible, naval combat capability;

- After the Gulf War, Canadian warships operated in the Red Sea as part of a multi-nation interdiction effort which enforced continuing United Nations sanctions against Iraq;



- The Navy coordinated and provided the bulk of Canadian assistance to disaster relief operations in Florida and the Bahamas after the devastation caused by Hurricane Andrew;

- The Navy supported the United Nations' humanitarian relief operation in Somalia by providing a resupply vessel with embarked helicopters and a logistics support detachment in Kenya. Both played key roles in Canadian and multi-national efforts to alleviate human suffering in that country. Our forces multiplied their own effectiveness by supporting the activities of



A United Nations patrol boat in Cambodian waters.

more than 20 non-governmental relief organizations working in the area;

- A Canadian naval contingent, working through the United Nations, was instrumental in the re-establishment of peace among warring factions in Cambodia. While there our sailors also provided support to many other UN agencies and offered humanitarian assistance to the local population;

- Canadian naval observers have participated in recent United Nations and European Union peacekeeping initiatives in the former Yugoslavia, and United Nations peacekeeping successes in Central America;

- As part of our association with NATO, and in concert with forces of the Western Economic Union, the Navy has contributed to the enforcement of an UN embargo in the Adriatic Sea. Canada has commanded the NATO

Inspecting shipping in the Adriatic Sea.



maritime force; contributed a destroyer, maritime patrol aircraft and a replenishment ship to the effort; and supported the shore infrastructure need to conduct operations in the former Yugoslavia. Commodore Greg Maddison, the Canadian Officer commanding the NATO squadron recently, provided his thoughts on the UN embargo against the former Yugoslavia: *"Simply put, my staff and I have one goal, to effectively use the warships under my command to ensure that no weapons, ammunition or fuels that could be used in the Balkan War effort get by our blockade."*

To illustrate the effectiveness of the blockade, the combined force of 21 ships from 13 countries has challenged more than 16,000 merchant vessels, has boarded and searched at least 1,500 and has diverted 300 others to Italian ports to deal with Italian Coast Guard and Customs Officials;



- Canada has maintained naval ships in the maritime interdiction operations off the coast of Haiti as part of the UN effort to restore democracy and hope to the people of that island state. Additionally, in early 1994 a Canadian naval officer was in command of the combined embargo force of ships from six participating nations;

- In support of the Department of Foreign Affairs and International Trade, the Canadian Navy has taken part in the Middle East Peace Process, by successfully facilitating the development of an agreement among conflicting parties dealing with the prevention of incidents at sea.

NATIONAL SUPPORT

Notwithstanding its many recent international activities, the Navy has concurrently increased the level of support given to other government departments like Fisheries and Oceans; Transport/Canadian Coast Guard; Solicitor General/RCMP; Foreign Affairs; Revenue; Citizenship and Immigration, and the Environment. This trend has two sources: the need to employ our government fleets more efficiently and creatively in the face of financial constraints, and an increase in the magnitude of enforcement responsibilities borne by federal agencies in the 1990s.

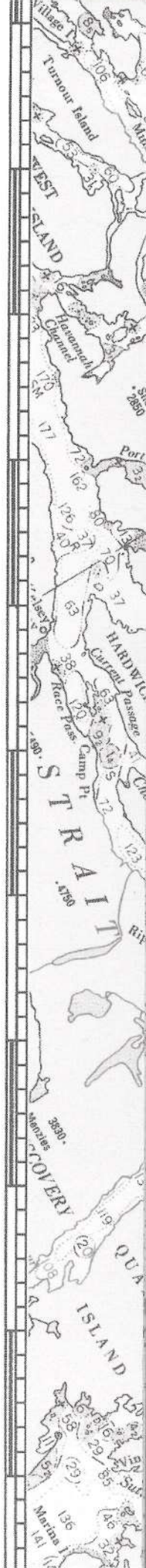
In order to deal with this trend an inter-departmental committee was established in 1991 to coordinate federal efforts in our maritime jurisdictions. To date considerable progress has been made in standardizing procedures, enhancing communications and command relationships, sharing information and improving mutual understanding.

Regular contact is now maintained among government agencies with mandates in Canadian ocean and coastal areas. We make an annual offer of ship days (in the order of 100) and aircraft hours (in the order of 1000) for support to other government departments, to be used as required without charge. It makes good sense for the Canadian Navy to support the work of other government departments wherever possible.

The Navy, acting in support of the Royal Canadian Mounted Police, has contributed to successful drug interdictions on both coasts, with the most successful one occurring in February, 1994. A record 5 tonnes of cocaine was seized in that RCMP-led operation, with support provided by a destroyer and numerous maritime patrol aircraft. In fiscal year 1993/1994 the Navy provided 22 sea days and 597 aircraft hours to the RCMP.



The Coast Guard and the Canadian Navy have developed strong working ties.



*When the Canadian Navy
contributes to the achievement of
our shared foreign policy
objectives abroad, its
accomplishments help shape
a better world for this and
future generations.*

Our efforts in support of the Department of Fisheries and Oceans (DFO), and other government departments have significantly enhanced their ability to enforce Canada's jurisdiction in our near and off-shore regions. We contributed 155 sea days and 939 hours of aircraft time to DFO in fiscal year 1993/1994.

Maritime Command is also proud of its support to other Canadian environmental initiatives. Maritime aircraft are often employed to spot ships illegally discharging waste at sea, and have been successful in collecting the evidence which has led to their conviction. In fact, maritime aircraft provide 85% of Canada's aerial pollution detections. These aircraft also fly patrols over the northern Pacific Ocean to monitor compliance with United Nations moratoria on drift-net fishing. Navy divers were recently employed off

Prince Edward Island to survey and temporarily seal the sunken oil barge the "Irving Whale", so that its cargo of crude oil could not despoil local beaches and fishing habitats.

THE DAILY CHALLENGE

Each day presents a new challenge to the members of your dedicated Navy team. They operate in a demanding global environment, and Canadians rightly expect them to achieve high standards of performance. Their successes in home waters positively affect the lives of people all across Canada. When the Canadian Navy contributes to the achievement of our shared foreign policy objectives abroad, its accomplishments help shape a better world for this and future generations.

The men and women of Maritime Command are justifiably proud of their past accomplishments, but their focus is on the future. Your Navy is determined to preserve its ongoing ability to serve Canadians with professionalism and distinction. Meeting that challenge as we plan for the 21st century will require further innovation and continuing adjustment to new realities. But we cannot afford haphazard change. We need to identify benchmarks against which to measure the evolution of tomorrow's Canadian Navy. Part Two of this document does so, by identifying Canada's most important maritime interests and outlining the strategic rationale for a continuing investment in capable, modern maritime forces.



Aurora long range patrol aircraft are among our most effective surveillance assets.



PART TWO

UNDERSTANDING THE NAVAL CHALLENGE:

The Strategic Rationale for Maritime Forces

STRATEGIC CONSIDERATIONS

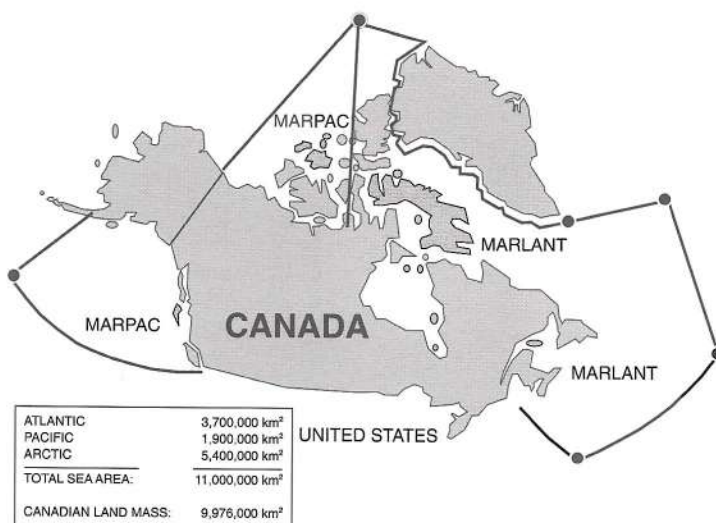
The kind of navy Canada builds and maintains will be shaped by our most vital national maritime characteristics and interests. These will largely define our maritime defence challenges and suggest the scope of our opportunities to use naval and maritime forces as positive instruments of Canadian policy.

The major strategic considerations bearing on Canadian maritime defence fall into three categories: geographic, geopolitical and economic.

Geographic. With a land area of almost ten million square kilometres,

The oceans are Canada's highways to the world.

AREAS OF CANADIAN MARITIME DEFENCE RESPONSIBILITY



Canada is the second largest country in the world. Yet, there is a second, seaward Canada that is even larger than our land mass. No less than the land upon which we live, work and prosper together, these seaward expanses form part of our national heritage. They are our responsibility and they represent the source of great potential for our future.

We have the longest coastline and the second largest continental shelf in the world. An Exclusive Fishing Zone extends our maritime responsibilities to 200 nautical miles from the coast. Beyond that limit, a continental margin larger than the provinces of Quebec, New Brunswick, Nova Scotia and Prince Edward Island combined, promises further wealth from the seas. On the east coast, Canadian areas of military responsibility

under alliance agreements reach farther still, extending half way across the Atlantic Ocean.

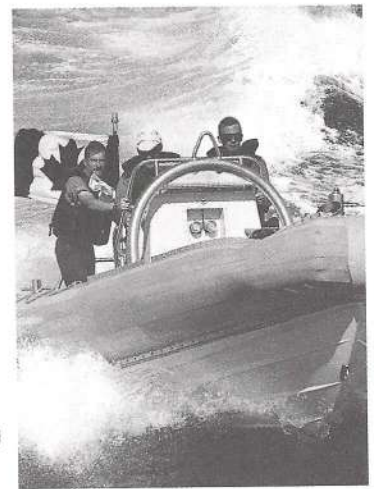
The oceans are Canada's highways to the world. Our country has important national interests in the Atlantic, Pacific and Arctic Oceans and with the other countries that border them. The seas and their tributaries also provide Canada with a vital and economical means of transportation. Annually our 25 deep water ports and 650 smaller ports receive calls from more than 28,000 ships involved in international shipping and another 25,000 vessels carrying domestic, coastal shipping. Many travel via the St. Lawrence Seaway, the world's longest canal system.

Presently the Atlantic and Pacific Ocean areas are of far greater importance to the current interests of Canada than those in the Arctic. This is a function of the broad variety of significant economic, social and military activities which occur in those waters. Nonetheless, Canadians have become increasingly sensitive to the evolving

THE NAVAL VISION

importance of our Arctic reaches. The ability to demonstrate a maritime presence and exercise control in the Arctic is highly desirable.

Geopolitical. Canada is a relatively prosperous and well developed western nation and her economy is highly integrated with those of many other countries. As a responsible member of the international community, Canada has tended to join like-minded nations to prevent perceived injustices in other countries and to develop a more stable, prosperous world. We are proud members of organizations like the United Nations, the Group of Seven, the GATT, the Commonwealth, la Francophonie, the Organization of American States, the Asia-Pacific Economic Cooperation forum, the North Atlantic Treaty Organization, and the Conference on Security and Cooperation in Europe. In addressing international problems within this context of multilateralism, military force is one tool available to the government - one that has been used with some consistency throughout this century.



Our sailors represented Canada proudly during humanitarian relief operations in Somalia.



Our Canadian Patrol Frigates have the seakeeping qualities required to deploy worldwide.

Canada has an interest in promoting international stability and peaceful change, while attempting to alleviate human suffering wherever it might occur.

Naval forces are inherently flexible and mobile, making them highly useful instruments of our foreign policy. They can operate anywhere in the world outside the limit of other nations' recognized territorial waters. They can deploy quickly, remain in an area for extended periods of time, and conduct a wide variety of tasks. The Canadian Navy has developed considerable expertise in operating alongside the navies of many other nations: this foundation can often be built upon in developing combined forces among coalitions of like minded nations. Because of their tremendous flexibility, mobility, and inter-operability, naval forces have often been selected by our government as their foreign policy instrument of choice.

Due to the inherent flexibility of balanced, combat capable, general purpose maritime forces, the Navy can play a significant role in peacekeeping operations. Canadians have been world leaders in the field of peacekeeping, in large measure because of the professionalism of our armed forces and their high standards of conduct. Successive Canadian governments have demonstrated our country's commitment to peacekeeping, and there is no indication that Canadians want us to reverse that tradition.

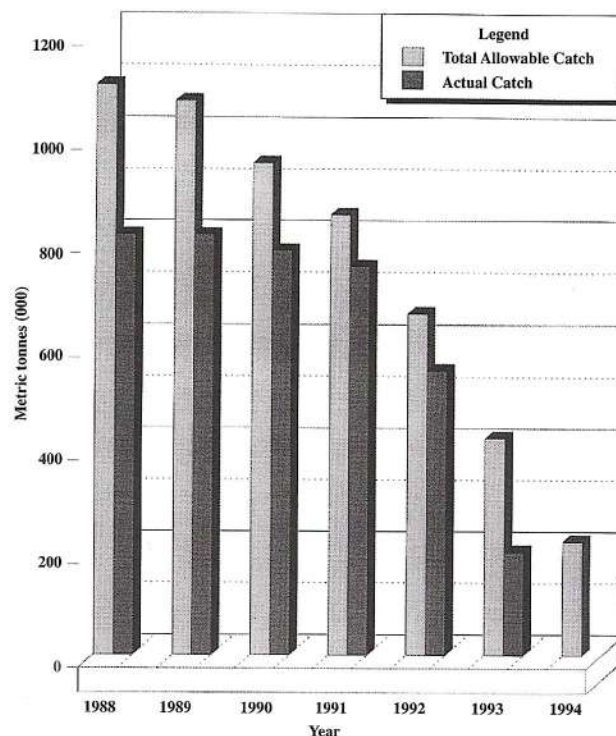
Recent Canadian experience highlights the utility of ships in naval peacekeeping roles:

- ships do not require land bases to support them, nor do they require overflight clearances;
- they have the capability to provide the widest range of government options, ranging from sanctions to full multi-threat warfare;
- they can remain in an area for long durations due to the replenishment capability of our Auxiliary Oiler Replenishment ships, which accompany Canadian Task Groups on extended deployments; and
- ships can respond quickly to national political direction, because each and every one of them has excellent long range command, control and communication facilities.

Economic. Of the world's industrialized nations, Canada ranks second only to Germany in its reliance upon external trade as a generator of prosperity. Some 30% of Canada's GNP is derived from international trade; 55% of this volume, and 99% of our non-US trade, travels by sea. Our dependence on efficient seaborne transport of goods is now even more pronounced due to the rise in trade with Asian-Pacific countries and recent trends toward high-technology manufacturing destined for European markets. Buoyed by our burgeoning trade along the Pacific Rim, Vancouver has become, not only

Canada's busiest port, but also the second largest port in North America. It handles about one third of Canada's total shipping tonnage each year.

Fishing is a Canadian industry under siege, due mainly to the severe depletion of cod stocks off Canada's east coast. These stocks are not expected to recover before the turn of the century, and then only with the effective implementation and enforcement of drastic quota cuts. In conjunction with other diplomatic initiatives, the government is considering an extension of our 200 nautical mile Exclusive Fishing Zone with the aim of assisting the overall recovery of fish stocks. Increased military presence may be required to support any such move. The decline of our fisheries is depicted in the following table:



The decline of the Atlantic fishery.

Despite the degradation of cod stocks, Canada remains an important fishing nation. The shellfish industry, encompassing products like lobster, scallops and crab, is worth about \$480 million dollars a year at wharf-side. The west coast salmon fishery is highly lucrative as well, with landings in the order of \$200 million a year. There is also a great deal of potential inherent in the development of aquaculture off our coasts. We still have a variety of valuable fishery resources to protect.

Accessible seabed resources within Canadian areas of jurisdiction include extensive deposits of gas, oil, sand and gravel, silica, precious metals and calcium carbonate. Some of these resources are already being exploited. Others await the development of suitable markets or environmentally sound extraction technologies.



Canadian commerce relies heavily on ocean transportation.

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Extensive oil and gas reserves have been discovered off Canada's coasts.

Among the most important of our offshore resources are the country's vast oil and natural gas deposits. Between 1985 and 1989, almost \$4 billion was spent in exploration for undersea gas and oil, with very large reserves discovered inside Canadian maritime areas of jurisdiction. Limited commercial production has begun off the coast of Nova Scotia, and will expand to the Newfoundland offshore once the Hibernia development is more advanced. These resources, and those yet to be tapped, represent a potential multi-billion dollar industry for Canadians in the future.

As the world becomes more aware of the need to protect the ocean's valuable and fragile ecology, efforts to enforce conservation and environmental standards increase. The United Nations Convention on the Law of the Sea, which will soon come into force, charges coastal states like Canada with extensive stewardship responsibilities for its ocean areas. Many federal laws like the *Canada Oceans Act* and the *Arctic Waters Pollution Prevention Act* are designed to ensure that the ocean environment is protected at the same time that economic development progresses. Increased maritime responsibilities in the areas of living and non-living resource exploitation will require considerable attention by the Canadian government and may well involve the use of naval forces.

As the world becomes more aware of the need to protect the ocean's valuable and fragile ecology, efforts to enforce conservation and environmental standards increase.

government. It was felt that Canada needed to move beyond maintenance of a force designed primarily for a specialized anti-submarine role within the NATO alliance. This recognition produced a trend in defence policy towards the establishment of a balanced, general purpose maritime force.

Although emphases and approach have varied somewhat from time to time, Canadian defence objectives have remained remarkably stable for the past thirty years. Our governments have sought to protect vital national interests within their areas of direct responsibility in Canada through the maintenance of capable military forces-in-being. These forces also enable the government to contribute to the maintenance of international peace and security in more distant regions of the world. We have never tried to maintain a military force large enough to provide for all our security needs alone; rather, we have traditionally sought to ally ourselves defensively with like-minded nations. Canada currently subscribes to two military alliances: NATO, the sixteen member North Atlantic Treaty Organization; and the North American Aerospace Defence partnership with the United States, otherwise known as NORAD. These alliances contribute to security at home and carry with them an obligation to assist in the defence of member nations abroad.

In a maritime sense, these objectives result in three areas of military interest. The first is in the ocean areas adjacent to our coast, where Canada has many vital interests and stewardship responsibilities. The second involves areas where our security concerns mesh with those of our allies and where potential conflict or instability could trigger a response in fulfilment of treaty obligations. Finally, as a globally engaged nation, Canada has an interest in promoting

international stability and peaceful change, while attempting to alleviate human suffering wherever it might occur. Whichever the case, whether at home or abroad, in concert with allies and other nations or acting independently, the protection of Canadian interests requires a wide range of military capabilities and suggests a diverse set of operational challenges.

DEFENCE POLICY AND THE NAVY

Maritime Defence. Canadian maritime defence efforts in the two decades following the Second World War were focused on meeting the threat posed by the Soviet submarine fleet. By the 1970s it was generally accepted that Canada required a broader maritime capability which could provide a more flexible policy instrument to our

Off Canada's Coasts. The defence of Canada and Canadian interests requires, among other things, the establishment and maintenance of a maritime presence within our areas of jurisdiction. "Presence" is a military concept, and it involves a capability for surveillance, patrol and response. These capabilities represent the building blocks of national sovereignty, and they apply equally in our near-shore and off-shore areas.



HMCS Vancouver: Our ships and their embarked helicopters regularly patrol the Canadian coastline.

"Surveillance" is the systematic observation of a maritime area of responsibility with the object of detecting activity on, under or above the ocean surface.

"Patrol" is the physical presence of a naval unit within a maritime area of responsibility with sufficient mobility or in sufficient numbers to provide visible evidence of governmental commitment to the regulation of activity.

"Response" is the ability to protect Canadian interests wherever and however they are threatened. This implies a wide range of capability, from monitoring an activity and deterring threats, to the interdiction and elimination of a threat's source.

The size of the area involved and the demands on Canada's maritime forces to meet this responsibility are enormous.

A second national consideration is the support given to other government departments (OGD). Fisheries and Oceans, Transport Canada/Canadian Coast Guard, the Solicitor General/RCMP, Revenue Canada/Customs and Excise, Citizenship and Immigration, and Environment Canada are all responsible for the enforcement of some aspects of Canadian law within our maritime areas. Over the years federal marine fleet rationalization has left some of these departments without ships or maritime aircraft of their own. Where this is the case, or where our ships and aircraft offer capabilities lacking in their own holdings, the Department of National Defence is in a position to provide other departments with the assistance of military assets to perform surveillance, patrol and response functions. In extreme cases, requiring the threat or use of graduated force, these resources may be used to support the arrest of those who violate Canadian law. This arrangement makes sense in the current fiscal

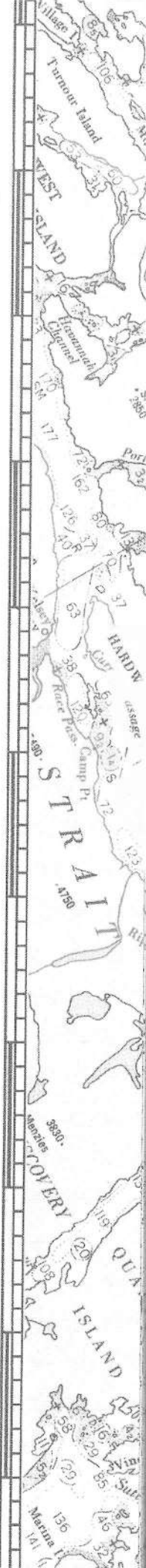
Maritime forces likely will be more frequently called upon to assist in the fight against illegal drug smuggling.

environment, and it also results in a more comprehensive approach to maritime security and enforcement in Canada.

For instance, maritime forces likely will be more frequently called upon to assist in the fight against illegal drug smuggling. This has become a growing concern as sophisticated cartels use our rugged and remote coastline as a North American point of entry for illicit drugs. The Canadian Navy first participated in a major drug-related



HMCS Terra Nova escorts the "Pacifico" into Halifax Harbour after it was arrested during Canada's largest ever cocaine seizure.



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operation in 1985 when it assisted the RCMP with a large seizure of hashish off the coast of Nova Scotia. Two years later the Navy helped the RCMP arrest a mother ship carrying 27 tonnes of marijuana on the west coast. Among the many successes Maritime Command has contributed to since that date are seizures of: 29 tonnes of hashish in July 1990 at Sydney, NS; 10 tonnes of hashish at Laredo Inlet, B.C. in July 1993; 25 tonnes of hashish at Little Heart's Ease, Nfld. in October 1993; and 5 tonnes of cocaine off Shelburne, N.S. in February 1994.

As drug smuggling attempts become more sophisticated and enforcement activities intensify, the Navy expects that it will participate in many more successful operations of this kind. The "Preventative Patrol" program, which assists law enforcement officials in establishing a presence in remote coastal areas, should also help to stem the tide of illegal drugs. Many of these patrols have been successfully completed by minor war vessels crewed by the Naval Reserve.

The establishment and maintenance of maritime presence in Canadian areas of responsibility garners many benefits quite unrelated to law enforcement concerns. It allows the Department of National Defence to take an active role in the maritime search and rescue (SAR) of those in distress at sea. Our participation as lead agency in Canada for this essential service, combined with that of the Canadian Coast Guard, has resulted in one of the most effective SAR organizations in the world. About 80 percent of the many incidents that our national Rescue Coordination Centres respond to annually are marine related. The ability of our sailors and maritime aircrews to operate their equipment in the harshest weather

*The ocean expanses
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conditions in remote regions is often a critical factor in the success of these rescues.

Additionally, the achievement of maritime presence can buttress other important government objectives, such as facilitating the visit of officials to remote coastal communities and the promotion of national

unity through ship and aircraft visits throughout our maritime regions. These initiatives play a meaningful role in the development of our shared sense of nationhood and signal the government's support for the aspirations and interests of those living along isolated Canadian shores.

Alliance Participation. Canada has never been in the position of having sufficient maritime forces to meet all possible threats without assistance from our maritime allies. In fact, Canada has always been closely allied with a predominant maritime power. During our country's early years we were part of the British Empire and were protected by its preponderant sea power. For the last half century the United States has helped to guarantee our security within the context of continental defence arrangements and NATO. Given its many benefits, Canada's tradition of achieving security through membership in collective defence arrangements of this nature will likely continue.

However advantageous, this dependence on collective defence in partnership with a much larger maritime power does raise a problem. For although we share responsibility for the defence of our waters against external aggression with our allies, we must still maintain Canadian national control in home waters *vis-a-vis* all other nations, including our allies. Striking the required balance is often a difficult task. Experience has shown that if we contribute sufficient Canadian forces for alliance purposes when they are required, and also demonstrate competent control of alliance forces when they operate in Canada's home waters, the necessary balance can be achieved. Thus, although we will not maintain national naval forces comparable in size or complexity with those of our leading maritime allies, we must preserve within our Navy, some capacity to control such forces when they operate in Canadian waters.

In addition to the promise of naval forces in crisis and war and regular participation in exercises, the Canadian Navy has supported NATO through a continuous contribution to the Standing Naval Force



Seamen are plucked from the deck of a foundering merchant ship by a Sea King helicopter.

Sailors from HMCS Algonquin, flagship of NATO's Standing Naval Force Atlantic, on patrol in the Adriatic Sea in early 1994.



Atlantic. As a minimum, this has consisted of the provision of a warship on a continuous basis, command of the squadron in rotation with the other members, and the occasional additional assignment of an Auxiliary Oiler Replenishment (AOR) ship. On a recent occasion we also attached a ship to the Standing Naval Force Mediterranean.

In addition to continued participation in standing naval forces, Canadian maritime forces are assigned to NATO's crisis response organization. Specifically, a Task Group (comprised of an AOR, submarine(s) and numerous destroyers or frigates along with embarked helicopters) will be available to respond on short notice to NATO requirements as an important part of the NATO Rapid Reaction Force. Indeed, maritime forces are the only element of the Canadian Forces in Canada currently committed to the Rapid Reaction Force. Its objective is to provide a timely response to crises, restoring stability before potentially dangerous situations escalate into major conflicts.

Closer to home, we have some special arrangements with the United States through a network of military agreements between the two countries which encompass the full spectrum of national security concerns. Naval agreements cover responsibilities for the defence of North American maritime regions. Military cooperation between the two countries has expanded in a number of areas including operations to prevent trafficking in illegal drugs. This trend in cooperation is expected to continue.

Joint and Combined Operations. The trend in international operations, especially those with a maritime component, is to involve forces from more than one element of military capability and from more than one country. Cooperation between armies, navies and air forces is a key component of success as like-minded nations pursue their international responsibilities. Improving our ability to operate alongside other services

has spurred considerable change in the way we plan, train for and conduct operations in the Canadian Navy.

Our recent experience demonstrates that, in the future, we will find ourselves operating with many nations in addition to our traditional NATO allies. Just ten years ago the likelihood of military cooperation with some of these countries would have been judged remote at best. Now what was so recently thought unlikely is very real indeed. In adjusting to this new reality, we are expanding our military contacts in regions like the Pacific Rim and South America, to improve our ability to conduct effective, combined naval operations with new security partners. These experiences will add an important new dimension to those gained during ongoing NATO operations, from which we derive so many of our skills in the art of inter-operability.

Contingency Operations. With interests spread throughout the world, Canada cannot hope to address all conflicts that may pose a threat or challenge with our relatively small forces-in-being. Nor can a nation of Canada's limited means take advantage of all opportunities to employ its military forces as a catalyst for stability in the world's troubled regions. Our small forces are best suited to resolving distant crises before they develop into major conflicts. These considerations have been factors in the decision to address Canadian security at "arm's length" through the pursuit of measures which reinforce international peace and security.

***Cooperation between
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international responsibilities.***

THE NAVAL VISION



A Canadian sailor on lookout duty during maritime interdiction operations off Haiti.

There is a requirement to respond quickly and appropriately to a wide range of "contingency operations", wherever they occur. It should be stressed that in very few of these cases would Canadian forces act unilaterally; rather, action will normally be taken in conjunction with other states and under the auspices of the United Nations. Canada cannot respond militarily to every disruption of the international peace; nevertheless, we have seen over the last few years that Canadian involvement is actively sought by the UN in many cases, and that the number of these operations has steadily increased since the end of the Cold War.

Although this document addresses the option of a response with military forces, the Canadian response need not be military, or purely military, in nature. Future contingency operations will straddle the wide spectrum of conflict and may include such diverse tasks as humanitarian relief, peacekeeping and peace-enforcement operations. They may be specifically aimed at the protection or promotion of Canadian national interests, or they could focus on preventing conflict through confidence-building. Many scenarios could find our sailors, soldiers and air force personnel working hand-in-hand with a variety of non-governmental organizations. In most cases, naval forces possess features which can be employed to advantage for contingency operations.

Humanitarian relief may include: provision of supplies to remote communities in need; transportation of bulk goods to aid famine victims; support for the restoration of basic services where devastated communities can only be reached by sea; and provision of aid to large numbers of people in distress at sea. Naval peacekeeping could call for the patrol of maritime areas in dispute or the prevention of hostile naval activity in certain ocean regions. Naval enforcement might entail support for operations ashore in a situation similar to the Gulf War, the threat or use of naval force to intercede between parties to a conflict, or the

clearance of mines laid by belligerents in the coastal areas of another state (or even in international waters). It may also involve the at-sea enforcement of economic sanctions, disarmament agreements or other stipulations. The Canadian Navy has been engaged in most of these activities on your behalf during the last decade.

THE NAVAL CHALLENGE

Despite its tendency to view the world in continentalist terms, Canada is a maritime nation of important standing. The ocean expanses off our coasts comprise a second, seaward Canada. The seas link us to vitally important global trading partners, while themselves harbouring a wealth of natural resources. We need a modern, effective

Canadian Navy to safeguard our seaward interests and uphold our maritime stewardship obligations.

At the same time we can employ a balanced, combat capable, general purpose navy to good effect within Canadian alliances. Flexible maritime forces make a meaningful contribution to Canadian multilateralism, while enabling us to promote global peace and stability. The opportunities to employ the Canadian Navy as a positive instrument of national policy are many. Canada has a vested interest in maintaining an effective Navy that can professionally meet the challenges of a new era. Part Three of this document describes the actions being taken to ensure that capability well into the next century.



Canadian forces personnel repair some of the damage wrought by Hurricane Andrew in Florida.



PART THREE

ACCEPTING THE CHALLENGE:

A Navy for the 21st Century

THE NAVY TEAM

Maritime Command consists of a team of professionals drawn from almost all military occupations. Sailors dominate the makeup of the Navy; however, the joint aspect of the Canadian Forces is evident by the number of air force and army personnel who serve in naval shore establishments or at sea in our ships. The Navy could not function without their skill and their dedication to readiness for maritime operations. Nor could the Command function effectively without the essential contributions of its talented civilian work force. Together, the Navy team ensures that your Canadian Navy is ready to take on the challenges of difficult work in rigorous settings.

The women and men of Maritime Command belong to one of two basic organizations: one concerned primarily with readiness and administration, and another whose focus is operations.

The Maritime Commander is assigned a readiness mission: he is responsible to the government for the maintenance of balanced, combat capable, general purpose maritime forces. He has delegated responsibility for the readiness of bases, ships and units on each coast to the respective Commanders of Maritime Forces Atlantic (MARLANT), located in Halifax, Nova Scotia, and Maritime Forces Pacific (MARPAF), located in Esquimalt, British Columbia. Additionally, the Commander of the Naval Reserves (COMNAVRES), with headquarters in Quebec City, Quebec, is charged with the readiness of this vital personnel resource. His mandate encompasses 24 Naval Reserve Divisions located in major population centres from coast to coast. Finally, the Commander of Maritime Air Group (MAG), a component of the Air Force, coordinates readiness in all aspects of maritime aviation for the Navy from his headquarters, which is co-located with that of the Maritime Commander in Halifax.

As the Navy has grown and adjusted to different responsibilities, the relative strength of forces maintained on Canada's Atlantic and Pacific coasts has varied. Until recently this balance favoured the Atlantic fleet. Given the strategic importance of both coasts today, the fleet will be equitably distributed between the Pacific and Atlantic as new and modernized ships are introduced over the next five years.

To manage these assets, each Coastal Commander has three Operations Groups and a support infrastructure. One Group is responsible for major operational warships, another is assigned coastal operational vessels and related duties, while the third concerns itself with readiness and team training as well as ship and equipment trials. Finally, the support infrastructure is overseen by the Coastal Commanders, the Commanders of MARLANT and MARPAF, and provides our ships and sailors at sea with all required materiel support. Most of these support functions will be consolidated within our two main bases at Halifax and Esquimalt.

It has become clear over the last few years that future naval contingency operations will rarely be conducted in isolation from other activity by military forces on the ground and in the air. As a Navy, we must be ready to conduct joint operations not only with the other two elements of the Canadian Forces, but also with the navies, armies and air forces of other friendly nations. Thus, Maritime Command is emphasizing mutual understanding, inter-operability and the development of joint tactics to manage the Navy's role in the coming years.

The challenge of building a professional, capable Navy for Canada's future will not be easy, but it must be met.



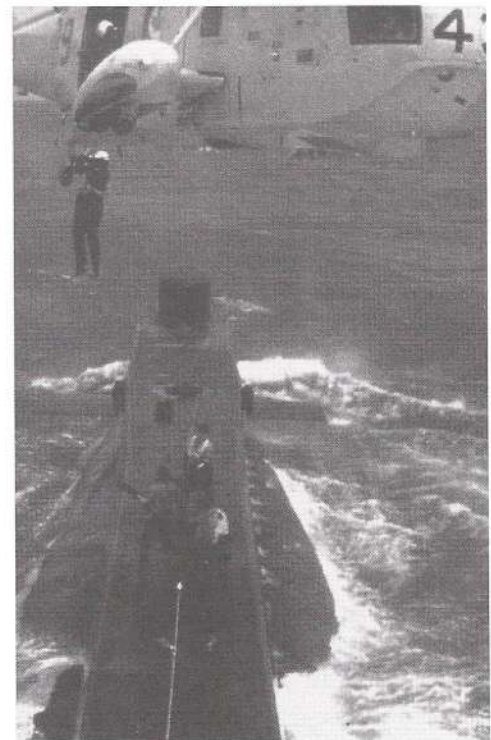
THE NAVAL VISION



HMCS Preserver (center) in company with warships of other nations delivering humanitarian relief in Somalia.

The effective employment of information technologies is a key factor in developing a Navy which can efficiently respond to future challenges. Given the extent of Canadian maritime areas of responsibility as well as the diverse range of emergent security considerations, it is essential that an effective system for data management be available in each coastal region. Although its primary purpose is to process and disseminate information for military purposes, it also can provide a comprehensive "ocean" or "surveillance" picture which can be shared with other government departments.

Maritime Command is in the process of implementing a comprehensive system for information exchange and management. Among the many programs designed to address our need for the tactical management of information and assets, the most important is the Maritime Command Operational Information Network (MCOIN) III. This project will provide automated command and control assistance to the national and coastal naval headquarters. The system will use communications nets to link these headquarters, as well as selected outside agencies such as NORAD and National Defence Headquarters. Additionally, the MARLINK project will upgrade existing tactical data links to ensure the inter-operability of our forces with those of our allies. There is also a project underway to link the Department of National Defence with other government departments so that they can share maritime surveillance information. The project is called the Canadian Maritime Network (CANMARNET) and it will link surveillance information between DND, the



Our effectiveness is grounded in close cooperation between ships, submarines and maritime aircraft.

Department of Fisheries and Oceans, the Department of Transport through the Canadian Coast Guard, and the Solicitor General's Department through the RCMP.

FORCE STRUCTURE

Balanced Naval Forces. Canada's areas of maritime interest are extensive and our military resources for surveillance and control of the area are limited. Our ability to ensure an appropriate level of presence is constrained by concerns like climate, versatility and cost. No one asset type, whether a ship, aircraft, submarine or fixed surveillance system, is capable of handling, by itself, the range of our maritime requirements.

***No one asset type
is capable of handling,
by itself, the range of our
maritime requirements.***

Aircraft, ships, submarines, and fixed systems all have unique capabilities which must be combined so that their strengths reinforce each other to produce a balanced, effective force. The careful mix of systems with different, complementary strengths creates a valuable multiplier effect, while reinforcing the versatility of the Navy's overall force.

There is no realistic alternative to the concept of balance. If one removes, for example, the maritime air component, significantly more is forfeit than just that single capability. In addition to the loss of the ten-fold increase in area surveillance which aircraft provide, ship and submarine performance as a whole would suffer. The loss of supporting maritime aircraft would remove the precise cueing that modern ship and submarine sensors and weapon systems require. For example, the range of our HALIFAX Class anti-surface capability would be reduced by a factor of three without aircraft-supplied data. In other words, the removal of single portions of capability from a balanced force, results in a loss in total capability out of proportion to that of the individual units withdrawn. Therefore, whereas individual platforms may be oriented towards specific types of tasks, our overall force must be structured to provide a balance or a full range of capability. This has given rise to the Task Group concept within the Canadian Navy.

A Task Group is a group of naval and air units optimally suited to the full range of expected tasks associated with an operational mission. It is capable of self-sustained operations for a fixed period of time in any accessible maritime region of the world. The number and type of ships, aircraft or other units attached to a deployed Task Group would be tailored to meet the requirements of each particular mission. Although each Task Group unit would be selected for a deployment based upon the unique capabilities it can bring to the total mix, only the

Task Group as a whole would incorporate the full range of capabilities needed to respond to the overall challenge.

Submarines. The diverse capabilities of, and requirements for, submarines operating either as part of the Task Group, or as single units, are not well understood. Therefore, these capabilities will be covered in some detail. The first point is that without submarines, the Navy does not have a balanced force. All maritime operations take place in a three dimensional environment which encompasses the ocean surface, the airspace above it, and the water column below. Naval balance can only be achieved where the ability to operate in each of these dimensions is preserved. The loss of submarines, and hence our ability to operate in the water column, would therefore have far-reaching ramifications.



HMCS Onondaga departs Halifax for operations in the Pacific.

Significant concentrations of submarines are being developed by various countries in the north-west Pacific, the northern Indian Ocean and the Mediterranean region. In addition, the number of submarines in south-east Asia is expected to double. Among the nations acquiring submarines for the first time are Taiwan, Iran and Saudi Arabia. Inspection of credible sources such as "Janes

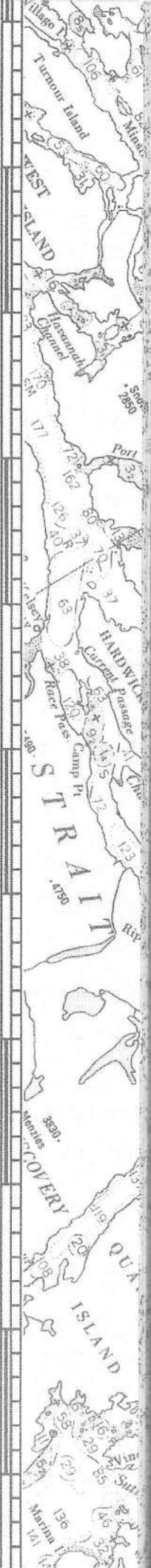
Fighting Ships" reveals that by the year 2000, 41 countries will be operating approximately 600 submarines.

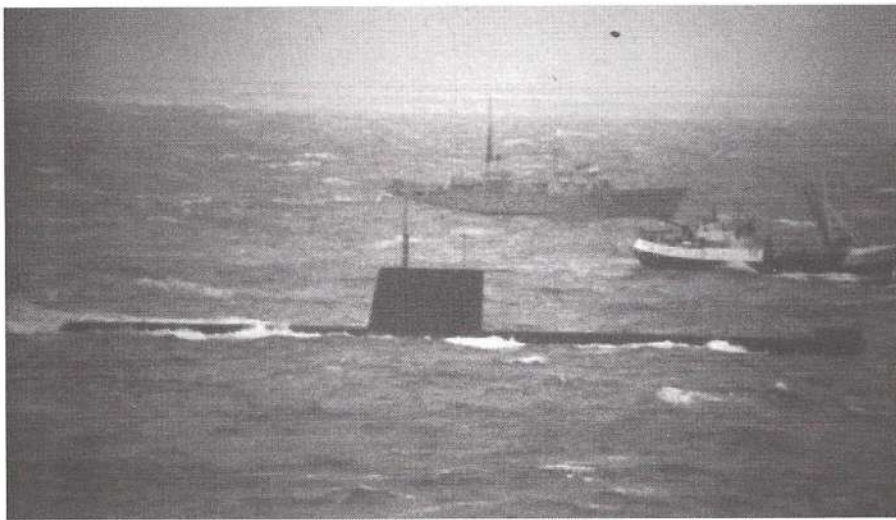
Clearly, the proliferation of submarines continues and, given Canada's willingness to dispatch our forces on UN and UN-sponsored contingency operations, we need to be prepared to meet the challenge. A balanced force which includes submarines gives us the capability required.

Submarines might seem to be specialized platforms, but they are in fact tremendously versatile. Their stealth and



A Canadian Task Group.





Canadian submarines have been employed to excellent effect on fisheries patrols.

ability to remain in an area for long periods of time make them ideal surveillance and interdiction platforms. They are the only covert vehicle capable of lending the valuable elements of surprise and uncertainty to our Task Group operations. For similar reasons we have used them to support counter-drug smuggling operations and have been able to employ them effectively on fisheries patrols.

Submarines are also valued military platforms because they are very hard to find in the complex environment in which they operate. Furthermore, nothing in the Canadian inventory equals their considerable striking power. Their employment against an opposing force's threat of escalation would constitute a singular deterrent. This latent power is not only of great defensive value to our maritime forces, it also represents an asset of important strategic value to Canada.

Force Size. A Task Group normally consists of one IROQUOIS Class destroyer, two or more HALIFAX Class frigates, one support ship, all with their embarked helicopters, and possibly a submarine. Additionally, Aurora aircraft join to provide further support to the Task Group. The exact number of ships and aircraft to deploy in any operational theatre will depend upon the situation at the time. These factors alone do not define the size of the fleet. However, generally speaking, a six month maximum is used as a planning factor for the length of time a ship or an entire Task Group will spend away from its home port for operations. Taking this factor into account, a "rule of thumb" has been established that three ships are required in an Operations Group to maintain each warship of a deployed force. This allows for one ship training and travelling to or from the area of operations, a second ship actually operating in the area, and a third ship in long term maintenance back home.

Presence. Balanced forces also involve an option for varying the visibility of maritime presence. The clear, unambiguous presence of a frigate contrasts nicely with the stand-off capability of patrol aircraft and the stealth

offered by submarines. Different operations, both military and non-military, require different levels of visibility for maritime forces. Maritime forces are the only military units that can provide the full spectrum of presence to meet government objectives.

Self-Sustainment. As mentioned previously, by virtue of Canada's geography the Navy has vast areas of maritime responsibility. This, coupled with distant operations in support of international obligations, means that our forces must be sustained while at sea if they are to be effective in their roles. To satisfy this requirement, the navy uses Auxiliary Oiler Replenishment (AOR) ships. In essence they provide one stop shopping for the destroyers, frigates and helicopters in the Task Group. A Task Group at sea requires fuel, ammunition, helicopter maintenance facilities, food, medical and dental facilities, and spare parts. The AORs provide all of these requirements to other ships in company while they are at sea. As a result our ships can remain at sea and at work much longer between visits to port for supplies. Given that the nearest port could be a thousand miles away, the savings



HMCS Preserver – one of Canada's three Auxiliary Oiler Replenishment Ships.

of time and energy achieved through the assignment of an AOR to our Task Groups is obvious.

Affordability. In a country where defence expenditures consume a large part of the government's discretionary spending budget, the need to be cost effective and ultimately affordable has never been greater. That is why defence planners have opted to design a naval fleet that is comprised of general purpose, combat-capable ships. Our Task Groups have been designed so that Canada's national and international obligations can be met for the least cost.



Operating helicopters from our warships greatly enhances their operational capabilities.

Our new, more personnel efficient, general purpose frigates can be employed singly or as part of a Task Group. Operating helicopters from these ships further enhances their versatility and viability. With the exception of northern waters all of our areas of maritime responsibility are within reach of shipborne helicopters. Submarines are also attractive from a cost-benefit perspective. Compared to a frigate with a crew of more than 200 sailors, a modern diesel electric submarine requires about 45 people to run it. Given that 45% of National Defence costs are personnel-related these numbers are significant. The submarine is also much more fuel efficient than the surface ship. Overall, a submarine can be operated for one third the cost of one of our older steam-driven destroyers.

Capital Equipment Programme: In general, the requirement for balanced maritime forces will be met through a range of platform life extensions, replacements, and

upgrades. According to currently approved capital plans, the Canadian fleet of the future will consist of the following major units:

COMPOSITION OF FUTURE CANADIAN FLEET		
UNIT TYPE	MARLANT	MARPAC
DESTROYERS (TRUMP)	2	2
FRIGATES (CPF)	7	5
SUPPORT SHIPS	2	2
SUBMARINES	Up to 3	Up to 3
COASTAL DEFENCE VESSELS	6	6
SHIPBORNE HELICOPTERS	To be determined	To be determined
LONG RANGE MARITIME PATROL AIRCRAFT	13	5
LONG RANGE MARITIME RECONNAISSANCE AIRCRAFT	3	0
COASTAL PATROL AIRCRAFT	7	3

Current major projects include the Canadian Patrol Frigate (CPF), the TRIBAL Update and Modernization Project (TRUMP), the Submarine Capability Life Extension Project, and the Aurora Life Extension Project (ALEP).



The CPF project replaces the Navy's 1950s and 1960s vintage fleet of 21 steam-driven, anti-submarine destroyers with 12 HALIFAX Class frigates. These are

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technologically advanced general purpose warships, whose weapons and sensors will allow them to conduct operational tasks at all levels of conflict virtually anywhere, singly or in company with other naval and air units. Each HALIFAX Class ship will carry one shipborne helicopter to further expand its capabilities.



TRUMP is upgrading the four 1970s era IROQUOIS Class destroyers at their mid-life. They will be the only surface ships with the space and technical facilities necessary to support an embarked Task Group Commander. In addition to the Command, Control and Communications (C³) function, the IROQUOIS Class also provides air defence coverage for other units of the Task Group with her long range surface-to-air missiles. This class will carry two shipborne helicopters to complement these increased capabilities.

The Submarine Capability Life Extension will replace three 30 year old OBERON Class submarines now based solely in Halifax, with up to six conventionally-powered submarines based on both coasts. In addition to their considerable surveillance and response capability, submarines possess the most cost-effective warfare capability of all maritime units. They are also our only maritime unit capable of covert operations in forward areas.



Currently the Canadian fleet is restricted to operations in ice-free waters. This limitation seriously constrains our ability to establish a desirable level of presence in our vast Arctic reaches. An Air Independent Propulsion (AIP) capability is required to provide the means for a conventional submarine to conduct under-ice operations, thereby addressing this constraint. Research and development work is currently progressing to meet this need. Canadian industry ranks among the world leaders in developing AIP technologies.

Shipborne Helicopter. With cancellation of the EH-101 program, studies are underway on options to improve, upgrade, or replace the capability of the current shipborne helicopter, the 30 year old CH124 Sea King. Potential solutions include the replacement of existing airframes and related avionics; upgrading of mission equipment; or the life extension of current airframes through extensive rebuilding and maintenance. It is generally accepted that failure to provide a continued integral helicopter capability to the Navy will fundamentally limit the effectiveness of our Task Groups and our individual ships.



The CP-140 Aurora Life Extension project will modernize existing surveillance and computer systems and increase the survivability of our 18 Aurora long-range maritime patrol aircraft. This project will provide the Aurora with a greatly enhanced surveillance capability which will allow the performance of an even wider variety of missions.

Offshore Presence. A significant portion of Maritime Command's surveillance, patrol and response requirements will be realized through the forces described above. For surveillance in particular, and to a lesser extent for patrol and response, additional measures are necessary to cover the vast areas involved effectively. This will entail the addition of some new surveillance systems and platforms.



An artist's conception of the new Maritime Coastal Defence Vessel.

The major projects along these lines include the Maritime Coastal Defence Vessel (MCDV), the Arctic and Maritime Surveillance Aircraft, the Coastal Patrol Aircraft and East and West Coast fixed surveillance systems.

Maritime Coastal Defence Vessel (MCDV). Twelve Maritime Coastal Defence Vessels will be acquired in the 1995-1999 time-frame. The MCDVs will initially deliver capability to the Navy in the areas of coastal defence operations, training and Naval Reserve revitalization. At first a limited number of these vessels will also be fitted with a mine countermeasures capability. A follow-on program will be required to provide all of the MCDVs with a credible multi-role capability in coastal defence, including mine warfare. This is seen as a very necessary capability to keep Canadian waterways clear of mines in the future, and also to support Canadian forces should they be required to operate again in mined waters abroad eg. Persian Gulf. In addition to their capability in mine countermeasures, these vessels will provide maritime presence in the coastal region.

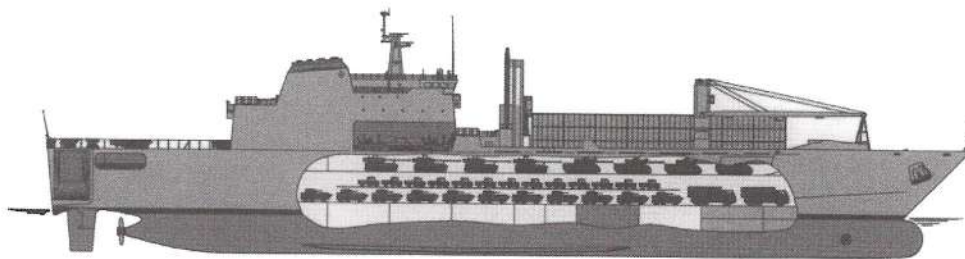
Coastal Patrol Aircraft (CPA) Project. This project will address the loss of coastal area surveillance capability associated with the retirement of the CP-121 Tracker. Additional aircraft will supplement the Canadair Challenger and Aurora aircraft that are presently employed in this role. The CPA will be used for coastal surveillance and offshore patrols both for military tasks and in support of other government departments. This will free the Arcturus and Aurora fleets for employment in a more demanding open-ocean, wide area surveillance

role and for Task Group support operations, respectively. It is expected that this project will be completed early in the next century.

Afloat Logistics Support Ship (ALSS). Changing national and global circumstances have caused naval planners to re-evaluate earlier plans for the acquisition of up to six Canadian Sovereignty and Surveillance Enforcement Vessels (CASSEV). Higher funding priority has now been assigned to addressing the deficiencies identified through the Afloat Logistic Support (ALS) Project.

This project has been initiated to address a deficiency noted in the area of fleet replenishment and heavy sealift

support to Canadian Forces joint operations. Preliminary studies have indicated that a Multi-Role Support Vessel (MRSV), with its endurance and helicopter carrying capability, should be considered for our next generation of logistic support ships. The procurement of four vessels will replace the current fleet of AORs and support future Task Group operations. The primary roles of these vessels will be to support naval operations and provide the Canadian Forces with a sealift capability for overseas contingency and peacekeeping operations. A secondary role will be to support forces operating ashore, for instance through facilities for a temporary Joint Force headquarters. Their design will also allow them to act independently in a variety of missions ranging from naval peacekeeping or environmental disaster relief to offshore surveillance and enforcement.



Multi-Role Support Vessel

Arcturus. Specifically designed to support surveillance requirements, the three Arctic and Maritime Surveillance Aircraft (CP-140A Arcturus) completed delivery in 1993. These aircraft, a CP-140 airframe without the anti-submarine warfare suite of the Aurora, are intended to carry out above-water surveillance in Canada's coastal and northern regions. They can also be used in an aircrew training role. This allows the Aurora to be employed in the more demanding roles associated with Task Group support, and will extend their operational life.



THE NAVAL VISION

Fixed Surveillance Sensors. Given the vast and remote nature of Canadian maritime spaces, it is not economical to attempt routine surveillance over all areas using ships, submarines and aircraft. As a result, the Navy maintains a system of fixed seabed acoustic sensors in strategic locations. This offers a good surface and sub-surface surveillance capability at considerable savings, while allowing us to concentrate limited aircraft and vessel resources in areas of high activity. Further efficiencies could accrue from the proposed establishment of High Frequency Surface Wave Radar sites along our coasts. These radars will provide 24 hour a day surveillance over selected maritime areas of responsibility. It may also be feasible to combine these and other surveillance methods to achieve a more accurate and reliable integrated system. We are also investigating the acquisition of such systems for installation in the Canadian Arctic.

Space. Our need to ensure the inter-operability of our Task Groups with other international forces is a function of Canada's involvement in numerous alliances and cooperative military ventures. Space technology must be incorporated into the country's defence structure in order to achieve the levels of inter-operability required. Currently, maritime military capabilities in communications and navigation are enhanced by such space-based systems. Space technologies may also be able to deliver enhanced surveillance capabilities. Future acquisitions must not only consider the use of space-based systems, they must address issues of standardization and the compatibility of naval assets with those of other services, both nationally and within alliances.

Future Considerations. The rapid pace of technological advancement in modern weapons systems and the worldwide proliferation of these technologies underline the need for regular upgrades to combat systems. If we anticipate deploying maritime forces to areas where advanced weapons are found, we have a responsibility to arm Canadian sailors and air crews with adequate defences against them. Ships and aircraft in the fleet will require occasional combat system updates if they are to retain their survivability, flexibility and tactical viability.

The Navy's ability to retain the necessary elements of a tactically viable Task Group over the long term is also a concern. The IROQUOIS Class destroyers will reach the end of their projected lives by 2010 when their hulls will be over 35 years old. Strictly in terms of numerical capability, failure to obtain suitable

replacements for the IROQUOIS Class will reduce the Navy's destroyer/frigate Fleet by 25 percent. More importantly however, the Navy will lose its ability to exercise effective tactical command and control within its Task Groups without a suitable and timely replacement for the TRUMP vessels. Studies have commenced on options for replacing this capability.

It is not unusual for ten to fifteen years to elapse between the time that a future capital need is well defined and the day that a new ship, submarine or aircraft is delivered.

A similar problem exists with the Aurora aircraft, which will be approaching 30 years of age by 2010. Auroras are the only quick response, long range vehicle capable of providing vital area surveillance, patrol and response functions in our maritime areas of responsibility. They can also be an important component of deployed Task Groups. Failure to replace or extend the life of the Aurora will leave a significant gap in our overall maritime defence capabilities.

To those who are unfamiliar with military force development issues, it may seem unnecessary to concern oneself at present with replacement programs for equipment that will still be operational for a decade or



Studies have commenced on options to replace the capabilities found in our IROQUOIS class destroyers.

more. But prudence requires that many of these requirements be identified early. It is not unusual for ten to fifteen years to elapse between the time that a future capital need is well defined and the day that a new ship, submarine or aircraft is delivered to our men and women in uniform. For instance, industry was first asked for proposals to build the Canadian Patrol Frigates in 1978 and it was not until 1993 that the first of these warships completed the trials required to achieve operational status. Navies are not quickly built.



THE READINESS BASELINE

"Readiness" is the term used to describe the degree of preparedness for operational tasks within the Canadian Forces. In the past, when the perceived level of threat to Canada and its allies was higher, the Canadian Navy maintained a rather high state of readiness throughout the fleet: that is, we ensured that most of our defence teams and their equipment were prepared for a fairly rapid commitment to operations. In the current strategic environment, a major military threat to Canadian interests is not likely to arise without some advance indication. Accordingly, the readiness and availability of maritime forces is being reduced. A smaller number of ships, submarines and aircraft will be retained at high levels of readiness.

On each coast, there will be three tiers of operational readiness: high, medium, and reduced. This status will be measured for each unit in terms of the availability of its personnel, the level of training they have achieved and the state of their equipment. The movement of ships and submarines through these readiness categories will define their operational cycle. The need to attain and maintain their respective readiness categories will affect the

number of days our ships spend at sea, their manning level, and the maintenance effort applied to them.

This approach to readiness has resulted in significant savings, while retaining the Navy's ability to respond to unforeseen developments. By allowing ships to gradually achieve the highest readiness levels, further savings are realized. No longer will every ship be immediately ready to sail; rather, most maintenance will be conducted on a routine, rather than an urgent basis. High costs associated with overtime and extensive spare parts inventories will thus be avoided.

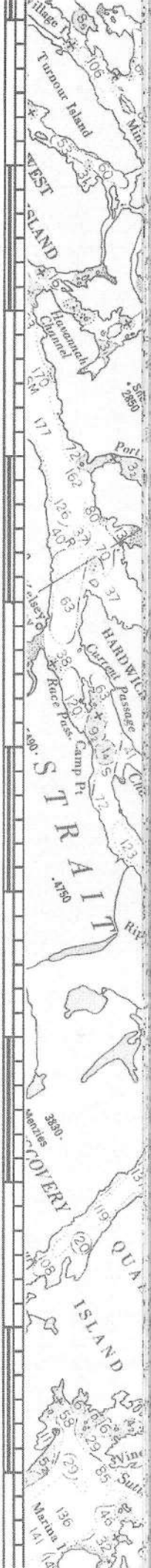
Accepting reduced readiness will allow a lower tempo of training and operations in the fleet. In the past, we have maintained an effective, but expensive, programme of deployments and exercises. Although a high level of operational training is still required to maintain combat capability and general skills in those fewer ships in the highest readiness category, significant short-term savings have been realized by reducing the number, duration and scope of deployments for the other vessels. Obviously, time spent at sea is becoming more important, and we are focusing on achieving maximum benefit from time underway and alongside through careful coordination of assets, effective use of simulation training technologies and comprehensive training programmes.



OUR DEFENCE TEAM

The naval personnel and training system manages the human resources required to meet the Maritime Commander's assigned missions and tasks.

The personnel strength of Maritime Command stands at approximately 14,300 Regular Force and Naval Reserve



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service men and women and 6,500 civilian employees. The Regular Force component of the team will continue a downward trend toward the end of the century as older ships are paid-off and the fleet becomes more efficient.

It is interesting to note that, of those service men and women in Maritime Command, thirty-four per cent are in support occupations, eighteen per cent list French as their first official language, fourteen per cent are women, and twenty-five per cent are Reservists.

The Naval Reserve comprises some 900 officers and 3,200 non-commissioned men and women. The Total Force revolves around the ability of these Naval Reservists to expand the capability of the Regular Force in fulfilling essential missions and tasks in peace, crisis and war.

Maritime Air Group is supported by 6,500 service personnel and civilians situated in major air bases on both coasts - Shearwater and Greenwood in Nova Scotia and Comox and the Victoria Airport in British Columbia.

PERSONNEL POLICY

An affordable and versatile personnel support strategy must address a wider range of issues than ever before. This will include the creation and improvement of facilities to support the well-being of the Naval Family: both Regular and Reserve personnel and their families. In addition, it must display flexibility and imagination in coping with the increasing challenge posed by married service couples, working spouses, and other social changes which shape, not only the evolving Canadian mosaic, but also the Canadian Forces.



Two major challenges face the personnel and training system in the years immediately ahead. They need to develop ways to better monitor and to control the scarce personnel resources available to the Total Force Navy. This requires a system which will follow our people through every aspect of their naval service, from recruitment to retirement. In the last few years, significant advances have been made in the automated data processing network for personnel information and these improvements will continue. Better information management will translate directly into improved career management and support, and more efficient use of people's talents throughout the Navy.

***Our service must reflect
Canadian society and
our country's core
values.***

The second major challenge is to ensure that the character and culture of our Navy evolves along with the society it serves. Our service must reflect Canadian society and our country's core values. Constant change is required in the Navy to cope with numerous current and future social challenges. At the same time, we must preserve the essential qualities of our service ethos and the best of our naval traditions.

Maritime Command has taken a leadership role within the Canadian Forces and Canadian society in developing advanced policies in areas like: mixed gender integration, healthy lifestyles, personnel harassment, sexual orientation, family support and grievances. The Canadian Navy has developed a reputation for being progressive. It has moved ahead with Canadian society in embracing social change. In adapting to change, our people have shown great maturity and resilience.

TRAINING POLICY

Introducing new classes of ship into the fleet has called for dramatic changes to how we train our people. During this decade there is a need to further rationalize the training structures which support the Regular, Naval Reserve, and civilian components of our Navy team. Better balancing the availability of naval training facilities between the Atlantic and Pacific coasts, and better serving the Total Force structure, will continue as high priorities. The west coast will house the training centre of excellence for the IROQUOIS Class. The training centre of excellence for the HALIFAX Class is being established in Halifax. The new Fleet School in Quebec City will serve as the centre of excellence to train Naval Reservists in their operational roles of coastal defence and the naval control of shipping.



Ongoing training is a way of life in the Navy, where safety and operational effectiveness are both priorities.

TRAINING EFFECTIVENESS AND INITIATIVES

With fewer sea days available for training purposes, the Navy intends to increase its use of simulation training and innovative technologies to maintain readiness. At present there are about 30 initiatives underway in this exciting field. One of these is the Canadian Patrol Frigate Operations Room Team Trainer, which will provide two simulated frigate operations rooms capable of training combat teams in realistic, hostile maritime environments. The Navy is also providing cost-effective individual training using reconfigurable emulators, which enable us to use one training device for several naval occupations.

The Navy is researching ways to conduct integrated training exercises that would include warships, submarines, aircraft, land forces and other government departments. Developments in this area will help maintain the tactical viability of Canadian Task Groups and support our increased involvement in joint and combined operations. Two new blind pilotage trainers are being acquired in conjunction with the purchase of four similar units by the Canadian Coast Guard, thereby realizing appreciable savings. Numerous other initiatives, in various stages of development, address the spectrum of requirements for individual and team training experienced by our sailors and submariners.

Where appropriate, outside marine training facilities are being used to reduce naval infrastructure costs. For instance, some of our junior watchkeeping officers have received training on a bridge simulator located at the Fisheries and Marine Institute of Memorial University of Newfoundland. Our Naval Combat Systems Technical Training Plan is conducted in English at the Fisheries and Marine Institute in Newfoundland and in French at the Rimouski CEGEP. Apprentices in our Marine Engineering Technical Training Plan receive training in French at L'Institut de Marine at Rimouski, Quebec and in English at St. Lawrence College in Cornwall, Ontario.

While much of our training is most efficiently conducted at central locations, there are areas where individual training can be successfully conducted by students where they normally live and work. Thus, we have begun to more actively explore the concept of distributed training, especially where advances in computer-based learning methods can be employed. This approach is being used to develop training modules for the new Maritime Coastal Defence Vessels, for instance. We have recently ordered four On Board Training Systems, which simulate the operations of a ship's engines under normal and emergency conditions, for use by sailors on board the IROQUOIS Class destroyers. These systems will allow sailors to hone their engineering skills without having to



Service in today's navy calls for highly developed technical skills.

THE NAVAL VISION

start real engines or interrupt their ship's normal operations. Finally, we are also looking at ways to better use ships themselves as platforms for alongside training. These approaches should yield additional savings and reduce our need for expensive shore based training facilities.

Whatever form they take, future training initiatives must adequately prepare our sailors to professionally operate and maintain complex ships which will be employed in a variety of roles. As our traditional reliance upon extensive at-sea training becomes less affordable, we will devote greater resources to the development of alternatives which nonetheless prepare our people properly for the demands of a challenging workplace.

MATERIEL SUPPORT

The Canadian Navy's ships and submarines are prepared for sea and sustained while deployed by a complex material support organization. This organization's functions are both specialized and diverse. It oversees the design, development, acquisition, modification, and safe operation of our ships and equipment. Materiel support personnel ensure that equipment is efficiently operated, and well maintained. This essential part of the Navy team purchases everything from food and stationery to fuel and ammunition. It warehouses our goods, transports people and supplies, manages our finances and disposes of surplus assets. These processes reach into each of our headquarters and throughout the Navy's organization right down to the base, station and unit level.

As our resources diminish, the Navy team is adopting new management initiatives to bolster the quality of our support to operations. Within the context of the "Defence 2000" renewal process, we are going to adopt a variety of business practises which place a strong emphasis on the bottom line. Management responsibilities and accountability for results will be delegated down the chain of command, and leaders at all levels will be encouraged to find ways to complete tasks less expensively or more efficiently. Savings which are realized as a result of such initiatives will be re-directed towards other Maritime Command priorities. These approaches to financial stewardship, while important, will not be allowed to obscure

the fact that fleet readiness remains the *raison d'être* for support activities in the Navy.

Naval Engineering and Maintenance. This component of materiel support is carried out under the auspices of three smaller organizations: Naval Engineering Units (NEUs), the Ship Repair Units (SRUs), and the Fleet Maintenance Groups (FMGs). Together these groups provide design, overhaul and repair services which are beyond the capabilities of shipboard personnel: everything from vessel modifications to submarine refits. In the years ahead they will be involved in establishing maintenance centres for the IROQUOIS Class destroyers, HALIFAX Class frigates and the next class of submarines; meeting the extraordinary civilian and military training requirement generated by rapid technological change; and contributing to the development of engineering and maintenance policy.

Naval Logistics. Maritime Command's logistics team looks after the purchasing, financial management, food services, transportation, and electrical and mechanical engineering support necessary to satisfy unique naval requirements.

The logistics network needs to respond flexibly and rapidly to the Navy's needs, no matter where its ships and sailors find themselves. It must be able to supply and sustain deployed Task Groups and their associated aircraft for periods of up to six months or more. In addition, logistics support must be provided to Command units, ships and personnel, whether located in Canadian waters, at our major bases on the coasts, or across the country. The logistics team plans to standardize products, significantly reduce the volume of goods currently held in inventory and move towards just-in-time delivery systems as it strives for greater efficiency and better customer service.



The Esquimalt Dockyard – providing essential support to the Fleet.

Construction Engineering (CE): The CE organization is responsible for all of the fixed and permanent buildings and structures at Maritime Command's bases, stations and facilities. Construction Engineering personnel are responsible for the design, construction, and maintenance of these structures. It manages the Navy's properties, operates utility plants, and provides fire and crash rescue protection, together with other related support services.



Upgrading our berthing capabilities to meet new ship requirements is an important objective.

In future the CE organization's objectives include upgrading the Navy's essential berthing capabilities to meet new ship requirements; renewing dated jetty service systems; improving Dockyard roadways and traffic flows; and redressing accommodation shortages or quality deficiencies. Of these the most pressing needs relate to some Ship Repair Unit, Naval Engineering Unit and Fleet Maintenance Group facilities, and to Fleet Schools, ammunition depots and service messes and quarters. Where possible dispersed organizations will be consolidated and freed-up lands offered for disposal. These measures should realize appreciable long term savings.

Auxiliary Fleet Support. The Queen's Harbour Master (QHM) organizations in Esquimalt and Halifax are responsible for the day to day operation of the Canadian



CFV Quest, a world-class oceanographic research vessel.

Forces Auxiliary Fleet (CFAV) consisting of tugs, harbour craft and floating industrial equipment, as well as offshore vessels which support Navy and Defence Research operations. This fleet performs a diversity of functions associated with the day to day operations of a naval port. These vessels also support naval exercises and equipment trials.

In 1991, a Chief of Review Services study validated the requirement for continued Auxiliary Fleet support to the Navy and its operations, while recommending potential efficiencies. Many of these recommendations are already being acted upon. Redundant vessels will be paid off and personnel resources adjusted. Further measures will be required to ensure that the Navy's minimum support requirements are met within the context of fiscal restraint.

RESEARCH AND DEVELOPMENT

In the modern era, military effectiveness is critically dependant on the skilful application of science and technology to all spheres of activity. Research and development (R&D) is indispensable to maintaining key capabilities and safeguarding future defence needs. R&D can reduce the uncertainties in strategic planning and contribute to the attainment of overall defence objectives.

Research and development is maintained to provide capabilities in areas of interest to Canada or where access to other technologies is denied by foreign governments. Canada has proven time and again that proper attention to R&D makes it easier for us to meet our objectives. For example, Canada pioneered the marriage of large helicopters and small warships to produce an effective fighting system which is now copied by every other modern navy. More recently, shipborne integrated (SHIN) computer systems, such as SHINMACS for ship's machinery, SHINCOM for communications, and SHINPADS for combat systems command and control, have made Canada a world leader in this field. These first rate developments have been incorporated into our new patrol frigates.

The Chief of Research and Development (CRAD) administers the research and development program which maintains scientific and technological capabilities for the Canadian Forces. His organization maintains Defence Research Establishments (DRE) in: Dartmouth, Nova Scotia (DREA); Valcartier, Quebec (DREV); Ottawa, Ontario (DREO); Toronto, Ontario (DCIEM); Suffield, Alberta (DRES); and Esquimalt, British Columbia (DREP). DREP will be closed as a result of the 1994 federal budget and its research transferred to other DRE locations.



THE NAVAL VISION

While these establishments serve the Canadian Forces as a whole, some carry out research that is of particular relevance to the Navy. DREA provides a materials laboratory and conducts research in ocean acoustics and signal processing. DREV supports naval interests in command, control, communications and intelligence, data fusion, electro-optics and infra-red sensors, munitions and energetic materials. DREO conducts research in radars, electro-magnetics and electronic warfare. Among DCIEM's activities, those relating to human factors affecting diving performance are of special interest. DRES researches remotely piloted vehicles and conducts shock and explosive testing.



Diving medicine is one of DCIEM's research interests.

CRAD also controls the Canadian Forces' development program. Often this work is carried out through contracts to industry. Normally, these contracts are in support of major and minor procurement projects. Even closer relations with industry and educational institutions are being developed to better focus the R&D effort over a wider base.

Canada pioneered the marriage of large helicopters and small warships to produce an effective fighting system which is now copied by every other modern navy.

Over the next several years, the focus of maritime R&D will shift to an increased emphasis on command, control, communications and intelligence as the Navy seeks to ensure maximum and effective use of limited resources and inter-operability with allied forces. R&D also addresses the three maritime warfare areas of underwater warfare, above-water warfare and mine countermeasures. These areas are focused primarily on sensor and weapon technologies for the fleet. Likewise, R&D associated with the Maritime Air component of the air force is of great interest to the Navy. Another focus area, naval platforms, addresses such concerns as engineering, design and habitability of our ships, as well as environmental requirements including Nuclear, Biological and Chemical Defence (NBCD).

Maritime Command must remain continually responsive to land and sea based environmental threats.

ENVIRONMENTAL RESPONSIBILITY

Maritime Command recognizes that it has a responsibility to conserve resources and to operate in an environmentally sound manner. It is committed to the federal Green Plan on the Environment and welcomes the challenge, not only of compliance, but also of demonstrating excellence in environmental matters. By its nature, Maritime Command must remain continually responsive to land and sea based environmental threats.

Accordingly, Maritime Command has adopted a total systems approach that includes both fleet and shore-based activities. Ship construction and modification initiatives, such as the Marine Environmental Protection Project (MEPP), will be promoted to ensure that our warships are less environmentally intrusive and meet international standards for ship-generated waste disposal. Similarly, shore-based activities will ensure that Maritime Command's infrastructure and support activities reflect the highest standards of environmental responsibility. We are determined to make meaningful advances in the areas of: pollution control and waste management; hazardous material management; ship, equipment and real property disposal; energy efficiency; the alleviation of unsatisfactory environmental conditions; and the training and education of personnel. Plans to add Afloat Logistics Support Vessels to our future fleet will also enhance the Navy's ability to aid in hazardous spill cleanup.

ACCEPTING THE CHALLENGE

In accepting the challenge of building an effective Canadian Navy for the 21st century we must meet the following requirements:

- maintain naval organizations on both coasts that have:
 - appropriate headquarters facilities;
 - the requisite command and control capability to conduct national and international operations; and
 - the ability to conduct joint operations with the army and air force.



- a future force structure capable of conducting and supporting operations in all three maritime dimensions—on, under, and over the surface of the ocean—in our coastal regions or in distant waters. These forces must be:

- balanced;
 - of adequate size;
 - capable of providing maritime presence;
 - self-sustaining; and
 - affordable.
- given the reduced military threat to Canada and persistent downward pressure on defence spending, the Navy must reduce its readiness levels and tempo of operations, yet maintain a prudent level of preparedness.
 - our Defence Team, a combination of Regular and Reserve force personnel and civilians, must continue to evolve. In order to support the Navy's growth and development we must have progressive personnel and training policies.

- materiel support must be rationalized with the three goals of reducing costs, achieving fleet readiness and providing operational support.

- we must retain the ability to overcome future challenges in a cost-effective way through continued Research and Development.

The challenge of building a professional, capable Navy for Canada's future will not be easy, but it must be met. Our country has extensive maritime interests and a history of employing maritime forces to pursue national objectives overseas. The Navy is one of our government's most versatile policy instruments - a fact

highlighted by the great diversity of its daily work for and on behalf of Canadians in home waters and abroad. Your Navy appreciates the constraints posed by the state of our nation's finances and it is striving for excellence in addressing societal change. At the same time, it is attempting to build a future force which is balanced, general purpose, and combat capable. A maritime force with these characteristics, supported by a dedicated, motivated team of military and civilian professionals, will stand us in good stead as we meet an uncertain future together.

THE NAVAL VISION foresees the ongoing evolution of a national institution which is capable of meeting the security needs of Canada in peace or

crisis, in a way that will make Canadians proud of those who serve their country upon the seas.

Finally, in accepting the challenge of building a Navy for the 21st century, we recognize the essential role to be played by public support for our efforts. We want to share this vision with our fellow citizens, because we believe they will recognize its relevance to our shared needs and aspirations as Canadians.

The Navy is one of our government's most versatile policy instruments - a fact highlighted by the great diversity of its daily work for and on behalf of Canadians in home waters and abroad.



PUBLIC AFFAIRS

Maritime Command has launched an active public affairs program so that Canadians can more easily learn about the activities, capabilities and future development of their Navy. Public Affairs staffs have been put in place in each of our headquarters to inform both the media and the general public about what their Navy is doing for them, for Canada and for global stability.

The Maritime Command Speakers Bureau, a group of serving officers from all walks of naval life, will receive increased emphasis during the next few years. The Bureau's primary objective will be to venture inland, where the majority of Canadians live, to tell them first hand what the Canadian Navy does for Canadians.

As part of this initiative our coastal Commands will seek speaking opportunities by:

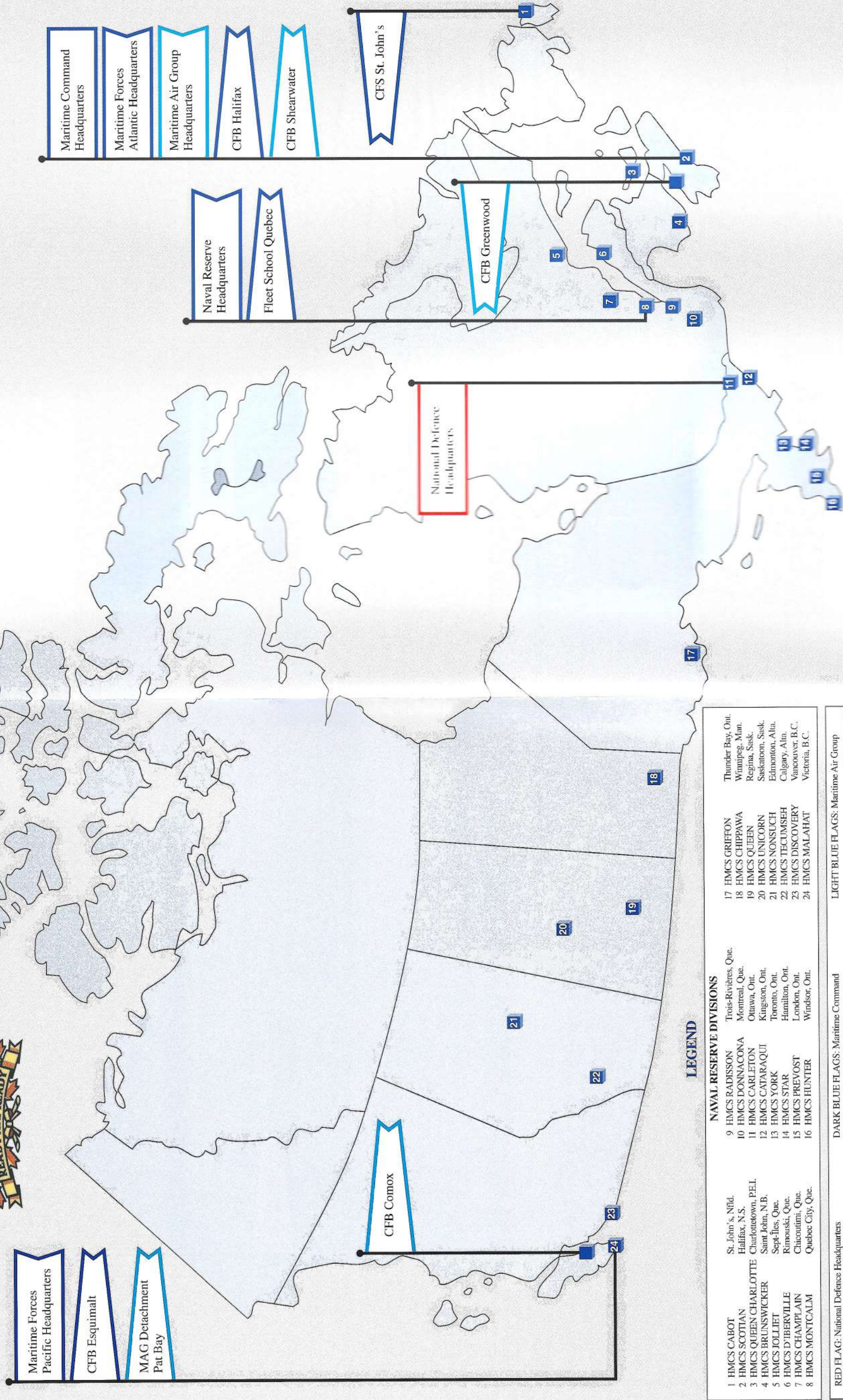
- encouraging younger officers to return to their home towns and speak to high school, church, cadet, youth, civic/service club organizations;
- canvassing Chambers of Commerce/Boards of Trade, school boards, universities and other key audiences;
- encouraging all members of the Bureau to seek speaking opportunities in their communities and with charitable/civilian organizations; and
- using this *NAVAL VISION* document.

Anyone wishing to engage the Speakers Bureau or obtain additional copies of this document may do so by calling the staff of Maritime Command Public Affairs at (902) 427-2138 or 427-6407.

“READY, AYE READY”



Maritime Command



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