

Commissioning  
of  
HMCS GLACE BAY



Mise en service  
du  
NCSM GLACE BAY

Sydney, Nova Scotia  
26 October 1996





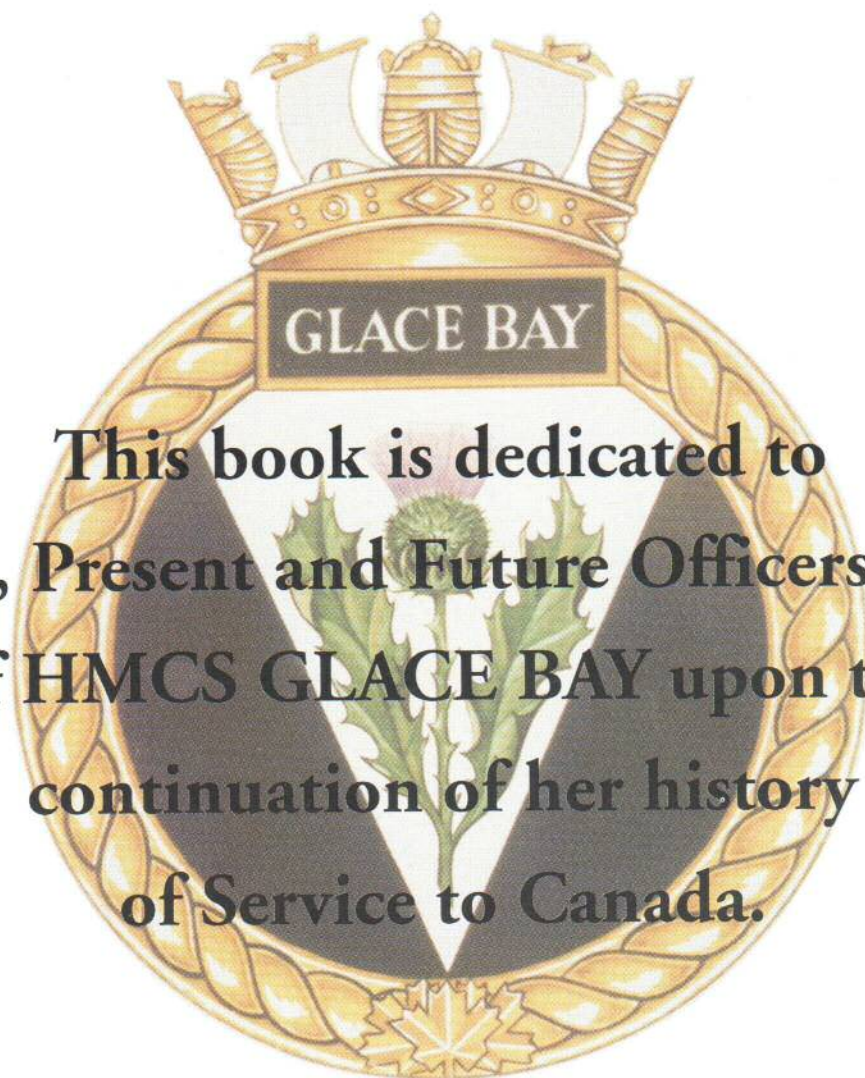












**This book is dedicated to  
the Past, Present and Future Officers & Crew  
of HMCS GLACE BAY upon the  
continuation of her history  
of Service to Canada.**



The commissioning of HMCS GLACE BAY represents not only the introduction of the second ship of twelve new KINGSTON class Maritime Coastal Defence Vessels, but also the continuing commitment to the revitalization of the navy and its Naval Reserve. It is therefore my pleasure on behalf of the government and the people of Canada to welcome HMCS GLACE BAY to the fleet.

The first HMCS GLACE BAY, a second world war frigate, was engaged in convoy escort duties and had a valiant history. This, the second GLACE BAY, will I'm sure continue the proud tradition of defending Canada's interests.

HMCS GLACE BAY represents the proud result of the ingenuity, dedication and commitment of Canadian industry. This fine ship will allow the navy to operate effective coastal missions into the 21st century.

I am confident that the HMCS GLACE BAY will not only provide this country many years of distinguished service, but will also bring pride and honour to the city after which she is named. To the Commanding Officer, officers and the ship's company, I extend my best wishes for a successful commissioning.

Cette cérémonie marque non seulement la mise en service du deuxième d'une série de douze navires de défense côtière de classe Kingston, mais aussi un engagement continu envers la revitalisation de la marine et de la Réserve navale. Je suis donc très heureux d'accueillir, au nom du gouvernement et de tous les Canadiens, le NCSM GLACE BAY au sein de la flotte.

Le premier navire du nom, une frégate de la Deuxième Guerre mondiale, a honorablement défendu notre pays en escortant des convois. Je suis persuadé que le second GLACE BAY perpétuera la fière tradition établie par son prédécesseur en défendant les intérêts du Canada.

Le NCSM GLACE BAY est le fruit de l'ingéniosité, de la ténacité et du travail ardu de l'industrie canadienne. Ce magnifique bâtiment permettra à la marine de remplir efficacement des missions de défense côtière aujourd'hui et dans les années à venir.

Je suis certain que le NCSM GLACE BAY saura non seulement donner au Canada de nombreuses années de service distingué, mais aussi faire la fierté de la ville dont il porte le nom. Au commandant, aux officiers et à l'équipage, j'offre tous mes vœux de bonne mise en service.

Douglas Young  
Minister of National Defence

Douglas Young  
Ministre de la défense nationale





I am pleased, as Commander of Maritime Command, to welcome HMCS GLACE BAY to the fleet. This commissioning marks a beginning of committed service in the challenge of protecting and preserving Canada's maritime interests.

HMCS GLACE BAY, the second of twelve Maritime Coastal Defence Vessels, reflects the best of Canadian quality, ingenuity and effort. I commend all those who played a role in designing and building of this fine ship.

HMCS GLACE BAY carries on a legacy of service. The original GLACE BAY, a frigate, distinguished herself in convoys duties during the Second World War. I am sure that all those who serve in HMCS GLACE BAY today and in the future will carry on the proud tradition of her predecessor. Furthermore, I am delighted by the friendship which has developed between HMCS GLACE BAY and the town of GLACE BAY, and I know this warm relationship will continue to grow.

To the Commanding Officer and Ship's Company - God speed, fair passage and best wishes.



En qualité de commandant du Commandement maritime, j'ai l'immense plaisir d'accueillir le NCSM GLACE BAY au sein de la flotte. La mise en service du NCSM GLACE BAY marque le commencement d'une période de service dévoué à sauvegarder et à protéger les intérêts maritimes canadiens.

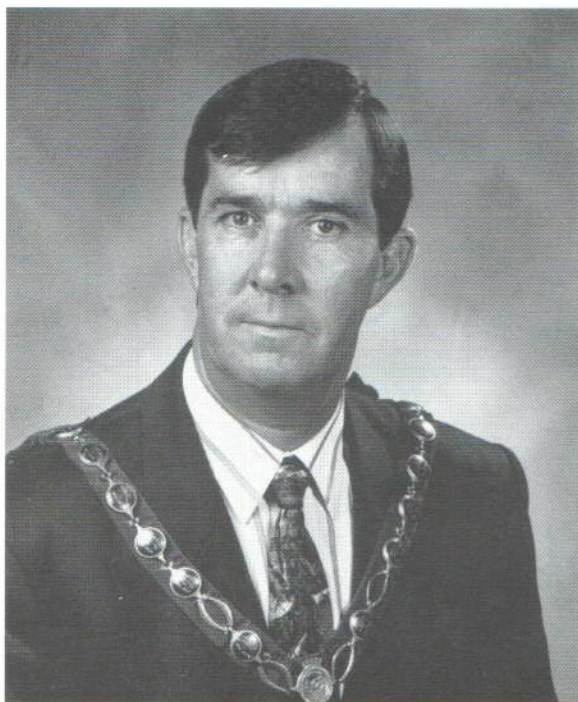
Le NCSM GLACE BAY, deuxième de douze navires de défense côtière, est le produit de l'expertise, de l'ingéniosité et du travail acharné de nombreuses personnes. Je félicite tous ceux et celles qui ont contribué à la conception et à la construction de ce magnifique navire.

Le NCSM GLACE BAY est l'héritier d'une digne tradition. En effet, Le premier GLACE BAY, une frégate, a admirablement bien servi le pays en escortant des convois pendant le Seconde Guerre mondiale. Nul doute que tous ceux et celles qui serviront à bord du NCSM GLACE BAY, maintenant et dans le futur, perpétueront l'honorable tradition de son prédécesseur. C'est avec joie que je constate les liens d'amitié qui se sont tissés entre l'équipage du NCSM GLACE BAY et la ville dont il porte le nom, et j'espère que ces liens se resserreront avec les années.

Au commandant et à l'équipage du NCSM GLACE BAY, j'offre mes meilleurs vœux de réussite face aux défis qui les attendent. Bon vent et bonne route.

L.G. Mason  
Vice-Admiral, Commander Maritime Command

Vice-amiral, L.G. Mason  
Commandant du Commandement maritime



On October 26, 1996, the HMCS Glace Bay will be commissioned here in Cape Breton. The ship's name honours the former Town of Glace Bay, a community noted for its spirit and determination. Week-long festivities will mark the occasion, including local entertainment and ship board tours of the vessel that proudly bears Glace Bay's name. Well-known local musician Winnie Chafe has been named honorary sponsor of the coastal defence vessel.

Cape Breton has had a long and proud historic relationship with the Canadian Navy, especially during World War II when so many convoys departed from here destined for Great Britain.

Our community and the citizens of Glace Bay, in particular, are honoured to have been so recognized. We know that as she travels the world, the HMCS Glace Bay will proudly display the name she bears and officers and crew will find new meaning in that old Cape Breton adage, "I'm from the Bay, bye!"

A handwritten signature in black ink that reads "John R. Coady".

Mayor John R. Coady  
Cape Breton Regional Municipality





As the chosen representative of the people of Glace Bay, I as sponsor of HMCS GLACE BAY express my sincere congratulations to the Commanding Officer, Officers and crew on this august occasion.

The name "Glace Bay" has always been associated with hard work and determination resulting from two main industries, mining and fishing. Such a heritage for HMCS GLACE BAY has evolved from coal mines working under the sea and fishing as an adherent part of the ocean. The people of Glace Bay have also played an important role in the peace the world enjoys today. In two world wars, the Korean conflict and other peacekeeping missions, Glace Bay has been well represented. Indeed, we are proud to honour a Victoria Cross Winner, Pte John Bernard Croak, V.C., as a former member of our community. I know that HMCS GLACE BAY will continue to represent these qualities while readily accepting the challenges that will guarantee the fulfillment of its military mandate.

While the advanced technology of HMCS GLACE BAY provides resources that fulfill peacetime requirements, it is also combat capable. Each member of its crew must therefore accept responsibilities and challenges that, at times, may test their skills in maintaining our sovereignty. In meeting these challenges, you represent both a town that is proud of you, as well as the former HMCS GLACE BAY and its wartime achievements.

May HMCS GLACE BAY sail in peace and never fire a weapon in anger. May the officers and crew enjoy fair weather, calm seas, good health and prosperity. My prayers and thoughts shall be with you constantly.

Winnie Chafe  
Sponsor





## Commander C. R. McNary Commanding Officer

To be granted the privilege and honour of commanding one of Her Majesty's Canadian Ships is exciting in a way few can appreciate. When one is practicing law on the Prairies when the offer of command is made, that excitement is increased dramatically. When the offer is in respect of a brand new ship, second of her class, it is difficult to describe how one feels. I am extremely proud to command this fine ship and her excellent crew.

HMCS GLACE BAY is already proving to be a very capable unit of Maritime Forces Atlantic, and as our attention focusses towards becoming fully operational we are confident in our ship's ability to successfully undertake any challenge and task assigned, and to get us safely home again. Since accepting the ship from her builder in Halifax on the 18th of May, 1996, we have learned a great deal and worked through many challenges. We look forward to meeting and resolving many more challenges in the future.

All members of the ship's company are very proud of the fact that we carry on the traditions of our predecessors who served in the first GLACE BAY, and it is fitting that veterans who served in K-414 are present today as honoured guests. They will always be welcome in HMCS GLACE BAY.

We are also proud of the honour to serve as an ambassador for the proud community of Glace Bay. As we travel through Canadian waters and abroad, we will represent your community well, and take a little of Cape Breton with us wherever we go.

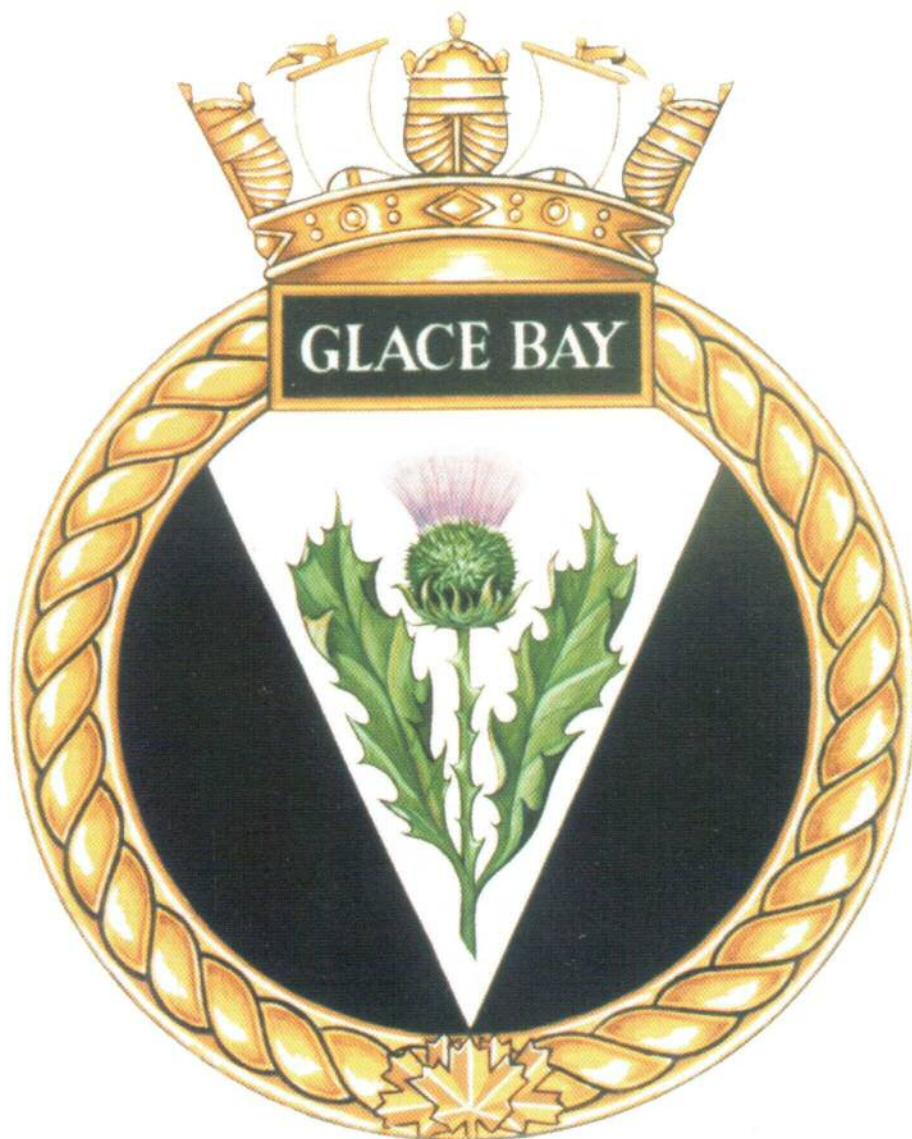
To my ship's company, it is a great honour to serve as your Captain. Your efforts in the busy months leading up to today have been incredible, and each of you can take personal pride in knowing that you have served at the vanguard of this programme and assisted the Navy in ensuring that these ships are truly the best that they can be. Given uncertain and ever changing plans, increasing demands for time and for quality of performance, unpredictability of events onboard, and extremely long days, you have set a high standard for those who follow you. Thank you all.

I also thank and salute the families of my fine crew. I know that many of you have had to deal with the challenges of the past year with absent husbands and fathers, sons and daughters. I am also keenly aware that some of you are far from home and help. Each of you has contributed to the success of this ship through your understanding and support. As we move ahead, I regret that more certainty and predictability in our programme is not possible. Thank you again.

Thank you as well to all who join us on this exciting and important day. The commissioning ceremony today symbolizes the trust that the nation places in HMCS GLACE BAY. We will strive to keep that trust, and to enter the operational fleet ready to serve wherever required and whatever the mission. *Ex Fundo Maris.*



*Ronnie Zedler*



*June/juin 1995*  
National Defence Headquarters  
Quartier général de la Défense nationale

*M. J. Beynon*  
Inspector of Canadian Forces  
Colours and Badges  
Inspecteur des drapeaux et insignes  
des Forces canadiennes



## SHIPS BADGE

- Blazon:** Pile Argent charged with a thistle Proper.
- Significance:** The thistle bloom in its natural colour (Proper) is from the unofficial Arms of the City of Glace Bay and represents the Scottish settlers who arrived in Cape Breton, some of whom still continue to speak Gaelic. It is placed upon a white (Argent) V-shaped heraldic component (Pile) representing the drift ice in the waters of the bay from which the City derived its name. The colour black represents the coal mines and the coal mining industry which were at the origin of the settlement and gave the city its livelihood.
- Ship's Colours:** Black and White.
- Motto:** *Ex Fundo Maris* (From the Depths of the Sea)
- Battle Honours:** **Atlantic 1945**



## HISTORY & SIGNIFICANCE OF COMMISSIONING HER MAJESTY'S SHIP

The Commissioning ceremony of HMCS GLACE BAY is an extremely important event in the life of this new ship. We are participating today in the observation of a tradition that has been kept alive for centuries. When the commissioning pennant is broken, HMCS GLACE BAY (MM701) becomes a proud ship in Canada's fleet of vessels designed and built for the role of coastal defence. Her Commanding Officer, Officers and Crew then accept the duties and responsibilities of making and keeping her ready for any service required by our nation, in peace or war.

The commissioning ceremony has been a naval tradition for many of the world's navies, and Canada's Navy is no different. Canada has been holding ceremonies to commission Her Majesty's Canadian Ships since 1910 with the founding of the Royal Canadian Navy. The ceremony marks the formal entrance of a man-of-war into Her Majesty's service. It is the final and most significant event of the triad that brings a ship to life: keel laying, launching and christening, and commissioning. Like many of Canada's Naval traditions, its roots can be traced back to the Royal Navy.

Originally, a commission (an order) was issued to the captain of a ship, entrusting him to carry out an important task in the name of the Sovereign. The earliest record of a commission issued for the naval service dates back to 1351, during the reign of Edward III. Then, and for centuries thereafter, the Captain's commission was that of the ship. Issued by the Sovereign when need of a naval vessel arose, a commission would detail the duty to be performed, and was then assigned to a half pay officer taken out of retirement. Upon the receipt of his commission, the Captain held the authority to appropriate a vessel suitable for the assignment, ensure to her fitting out and storing, select his officers and obtain a crew.

Once the Captain had located a proper vessel for the task, he would assert his legal right to command her and make government payments for the work needed to make her ready for sea. He did this by boarding the ship, with several of his Officers and senior hands, and reading aloud his commission from her deck. To signify that the vessel was now a Warship in the Royal Fleet, the ship was dressed with a Naval

Ensign, and a commissioning pennant was broken at the masthead. While today a ship and her Captain no longer share a commission, one visible and significant manifestation of the commissioned ship has remained constant: active ships of the Royal Canadian Navy, from corvettes and cruisers of the first two World Wars to today's modern Halifax class frigates and Kingston class coastal defence vessels, have proudly flown the commissioning pennant.

The commissioning pennant has for centuries been the unique symbol of the man-of-war. Today, it is flown as the distinctive mark of a ship in commission, except when displaced by the personal flag of an Admiral or the Sovereign's personal flag.



The ceremonies attached to the commission of a naval ship are as steeped in tradition as the Commissioning Pennant itself. Central to the many facets of the ceremony, an official of the crown delivers a verbal charge to the Captain and crew, signifying the Sovereign's pleasure that the ship will assume naval duties as assigned by Canada. This marks the change in status from simply a vessel to a Warship.

Following the address by the representative of the Sovereign, a religious service is observed. Sailors have always stood keenly aware of their potential to suffer violence, both from the sea and the enemy. Thus they have traditionally marked the commencement of operations with prayers for Divine protection and strength, both to the ship and her crew, for the tasks that lie ahead.

Once the religious service has been completed, and the ship and all who sail in her blessed, the third and final component of the commissioning ceremony takes place. Following an address given by the Commanding Officer on behalf of the entire crew, the ship is ordered commissioned. The Officers and Men then man the ship, pipe the Commanding Officer aboard, and bring the ship to life.





The original HMCS Glace Bay was a River class Frigate (1943-44 program). The ship was named after the town on Cape Breton Island. The name was first suggested on 15 June, 1942, by a Mr. Thos Hussey of Glace Bay, as it was then the nation's largest town and was known as "The Biggest Town in Canada". She was built by George T. Davie & Sons Ltd., in Lauzon, Quebec. Her keel was laid down September 23, 1943 and she was launched April 4, 1944. HMCS Glace Bay received her commission on September 2, 1944, at Levis, and arrived in Halifax September 23. She carried out workups in Bermuda in mid-October and on her return was assigned to EG C-4, Western Approaches Command, Londonderry. She left St. John's for that port on November 17, escorting a number of U.S.-built

subchasers destined for the Russian Navy. HMCS Glace Bay was employed continuously on convoy duty until VE-Day, and early in June, 1945 left Londonderry for the last time to spend several months at a variety of tasks off the east coast of Canada. Later in July, 1945 she was permanently reassigned from Western Approaches Command, Londonderry to Atlantic Coast Command (N.W. Atlantic command) based in Halifax. In October she made a round trip to Bermuda, and on her return was paid off on November 17 at Sydney. She lay in reserve at Shelburne until sold by War Assets Corporation in Montreal on 15 March, 1946 to the Government of Chile for the Chilean Navy. She was renamed Esmeralda and later, in 1952, Bacquedano. She was broken up in 1968.

## Former Commanding Officers of the original GLACE BAY

A/CDR	J. H. S. MacDonald, RCNVR	2/9/44	-	23/2/45
A/CDR	F. W. Bogardus, RCNVR	24/2/45	-	2/7/45
LT	D. B. D. Ross, RCNVR	3/7/45	-	10/8/45
LT	P. W. Lee, RCNVR	11/8/45	-	26/8/45
LT	S. L. Slade, RCN	27/8/45	-	17/11/45



## SHORT HISTORY OF THE SHIP'S MASCOT



Two dogs have served GLACE BAY. GLACE BAY's first mascot was presented to the ship's company by the city of Glace Bay. The first dog had been a bulldog that left the ship and did not return when GLACE BAY first reached the British port of Londonderry leaving the ship without a mascot. A new dog was encountered in the ship's journey's. Two stories have come down to the ship about how the second dog became HMCS GLACE BAY's permanent mascot. The first comes from Victor Cormier, Cape Breton's

only sailor on the original GLACE BAY. The second from George Squance CERA, HMS SPARROW, HMCS SWANSEA, HMCS LANARK.

Victor Cormier recalled that GLACE BAY had escorted a convoy from Newfoundland to be met by a European Task Group. After being relieved of their escort duties, GLACE BAY proceeded to Londonderry for refuelling and provisions. Prior to reaching port, GLACE BAY encountered a half-sunken vessel. The GLACE BAY searched for survivors but found none. After searching a bit further, it was decided that the vessel would be sunk. As GLACE

BAY neared the vessel a boarding team was sent to attempt to board the ship to retrieve the ship's log and other documents. When the boarding team entered the ship a small terrier (pictured in ship's company photograph page 26) was found confined in a cabin and was rescued. .

George Squance narrated the following; At some point at sea, perhaps in the eastern Atlantic, the GLACE BAY came upon an abandoned landing-craft, (believed to have been American). A demolition-party boarded the craft to find a dog, alive, as the only remaining living occupant. The dog became adopted and the abandoned craft was sunk by GLACE BAY personnel. The derelict vessel that GLACE BAY had uncovered was later identified and believed to be USS LCT (G) 855.



### SISTER SHIPS - MM701

<u>Ship</u>	<u>No</u>	<u>Ship</u>	<u>No</u>
HMCS Kingston	700	HMCS Yellowknife	706
HMCS Glace Bay	701	HMCS Goose Bay	707
HMCS Nanaimo	702	HMCS Moncton	708
HMCS Edmonton	703	HMCS Saskatoon	709
HMCS Shawinigan	704	HMCS Brandon	710
HMCS Whitehorse	705	HMCS Summerside	712

### SISTER SHIPS - K414

<u>Ship name</u>	<u>Ship name</u>	<u>Ship name</u>
HMCS Buckingham	HMCS Poundmaker	HMCS Cap de la Madeleine
HMCS Prestonian	HMCS Carlplace	HMCS St. Catharines
HMCS Fort Erie	HMCS St. Pierre	HMCS Glace Bay *
HMCS St. Therese	HMCS Hallowell	HMCS Seacliff
HMCS Inch Arran	HMCS Stonetown	HMCS Joliette **
HMCS Stettler	HMCS Jonquiere	HMCS Stormont
HMCS Lanark	HMCS Strathadam	HMCS Lauzon
HMCS Sussexvale	HMCS New Glasgow	HMCS Thetford Mines
HMCS Outremont	HMCS Toronto ***	HMCS Penetang
HMCS Victoriaville	HMCS Cape Breton	HMCS Lasalle
HMCS Coaticook	HMCS Longueuil	HMCS Dunver
HMCS Metane	HMCS Eastview	HMCS Prince Rupert
HMCS Kokanee	HMCS Runnymede	HMCS Waskesieu

\* Recommissioned MM701 26 October, 1996

\*\* Recommissioned Naval Reserve Division located in Sept Isle (NCSM Joliette)

\*\*\* Recommissioned FFH 333 29 July, 1993



## THE MARITIME COASTAL DEFENCE VESSEL PROJECT



The Maritime Coastal Defence Vessels (MCDV) were designed to be multi-role, multi-purpose, cost-efficient vessels that would serve Canadian Maritime interests and meet requirements in coastal defence and patrol, in minewarfare and as required by the Maritime commander. The programme evolved from earlier proposals to revitalise the Naval Reserve component of Maritime Command.

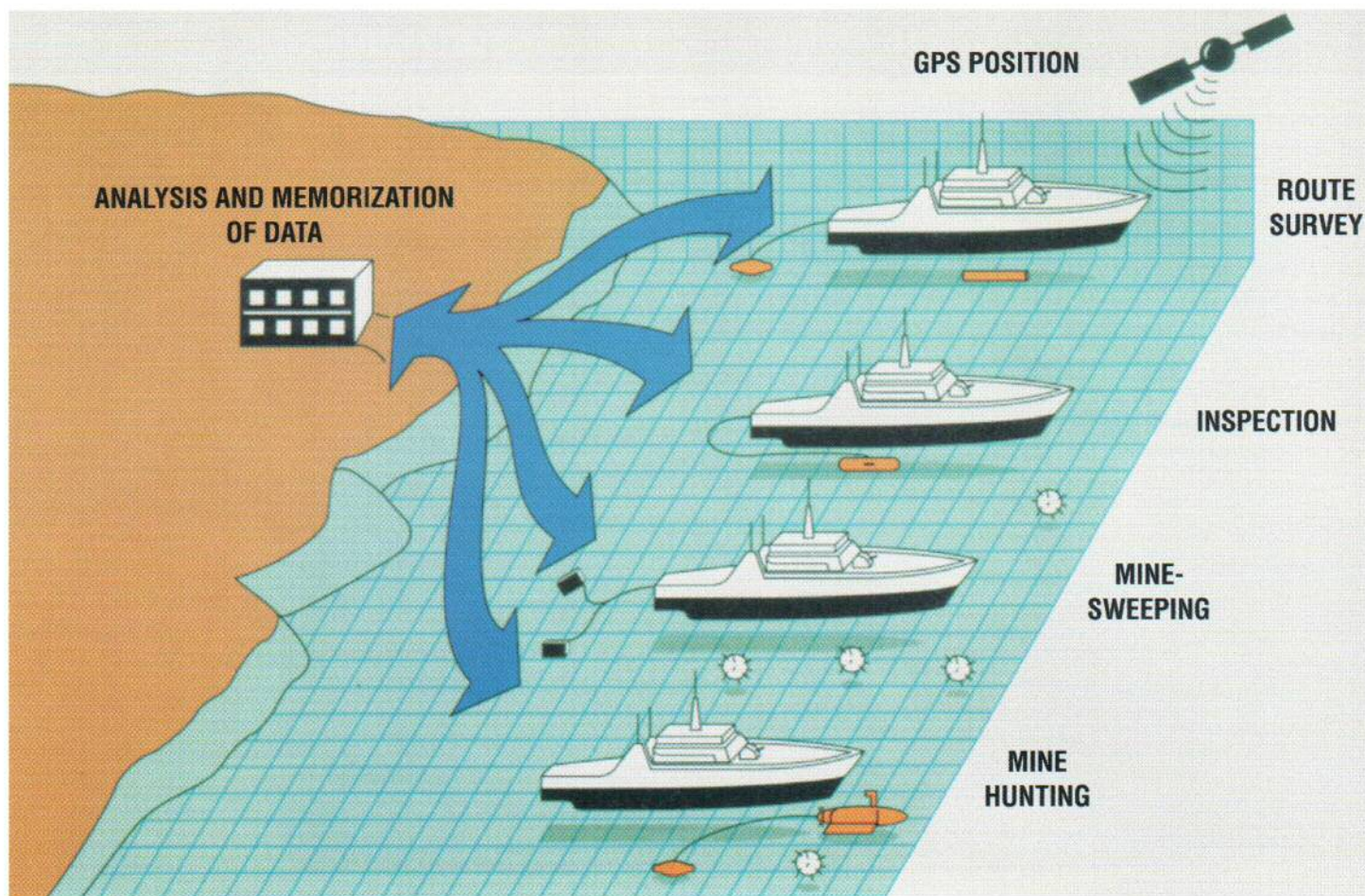
The construction of the MCDV's has heralded in a new era for members of the Naval Reserve who serve their country from across Canada. Under the "total force concept" reservists are not limited to augmenting the regular force in units primarily manned by the Regular Force, but serve operationally in a number of capacities. With these Vessels, the Navy will be better equipped to be able to conduct coastal surveillance and sovereignty patrols using Primarily Naval Reserve crews. The Maritime Coastal Defence Vessels will also allow Canada's Navy to

further assist other government departments in search and rescue operations, protection of our fishing resources, and policing of our waters.

When the new Canadian Patrol Frigates followed a long-standing navy tradition of bearing names of Canadian cities (some of which had been born by previous ships), the naming of the Kingston Class Ships after smaller Canadian cities was more than appropriate, this signifying the importance of all Canadian cities regardless of size.

The first ship of the class (HMCS KINGSTON) was launched on August 12, 1995, and commissioned in September, 1996. HMCS GLACE BAY, the second ship of the class, was launched in December 1995 and accepted by the Navy on 18 May 1996. It will, undoubtedly, be exciting to witness the remaining ships be launched and commissioned.





## The Role & Purpose of the Kingston Class Ship

The construction and design of HMCS GLACE BAY as a Kingston Class Vessel has been optimised to support a multi-purpose role. Using commercial standards and equipment, leading edge technologies have been incorporated into both combat and engineering systems. HMCS GLACE BAY is a modern, capable and flexible platform with considerable potential for the future development and evolution of systems and missions.

The primary peacetime mission of HMCS GLACE BAY is surveillance and patrol of Canada's coastal waters and ports. This will include a wide variety of duties: including: general naval operations

and exercises, support of other government departments including the Royal Canadian Mounted Police, the Department of Transport's Fisheries and Oceans and Coast Guard, and the Department of the Environment. The ship is capable of resource protection; pollution control; and search and rescue.

The multirole character of the ship is enhanced by the containerized "payload" approach to missions whereby the ship embarks an equipment fit dependant on mission. Carried in ISO containers and capable of changeout on short notice and away from home port the following payloads form part of the project.



## ROUTE SURVEY PAYLOAD



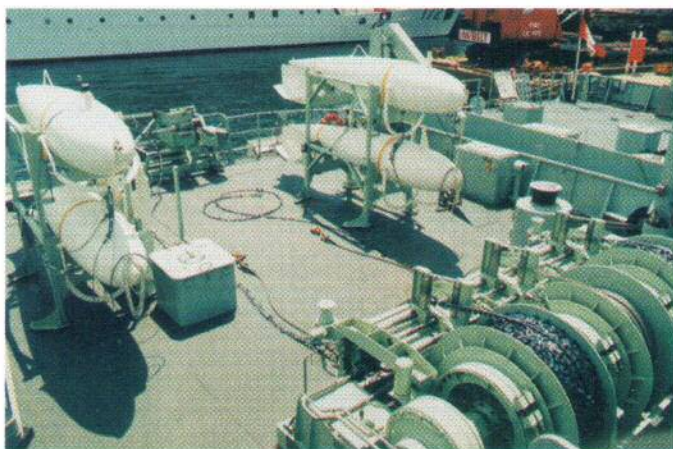
The Route Survey Payload enables HMCS GLACE BAY to stream a towfish containing a very high resolution side scan sonar to gather imagery of the ocean bottom to depths of 200 metres. The imagery is displayed on GLACE BAY's Mine Warfare Control System (MWCS) in the Operations Room where it is examined for the presence of suspicious objects. The imagery is also recorded and delivered to the shore-based Coastal Operations Planning and Analysis Centres where it is



accurately positioned and geo-coded, allowing the comparison of the newly acquired imagery to previously acquired imagery. The Route Survey Payload container consists of the towfish, its handling gear, cable reel and one 19-inch rack of electronics equipment. The Route Survey Payload is transported in a 20-foot ISO container. The sides and top of the container are removed when installed on-board GLACE BAY.

## MECHANICAL MINESWEEPING PAYLOAD

The minesweeping payload enables deep sweeps to be conducted in either single ship or in two ship evolutions. The "on-board" equipment includes winches, local control system (with remote control in the Bridge), and a spare wire reel. The "wet end" equipment includes the sweep wires, explosive cutters, kites, otters, floats, channel markers, and a depth measurement system. Two of these ISO container-based payloads, each with a portable bulwark, are provided to the project and may be moved from ship to ship depending upon operational requirements.





## BOTTOM OBJECT INSPECTION VEHICLE PAYLOAD

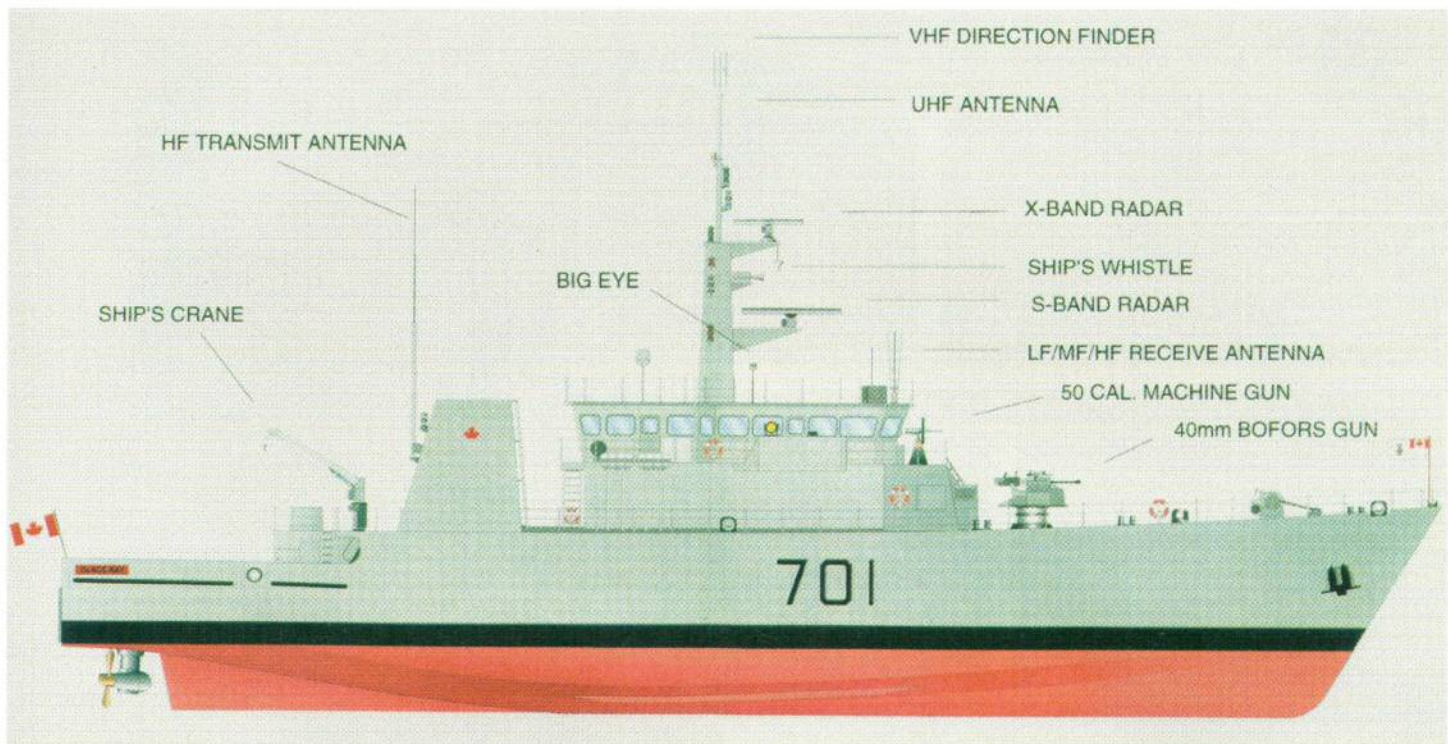


The Bottom Object Inspection Vehicle (BOIV) Payload allows GLACE BAY to visually inspect suspicious ocean bottom objects. The BOIV is remotely operated through a console in the operations room via a wire umbilical cable. The BOIV is equipped with an imaging sonar, a colour video camera and a high resolution black & white camera. The BOIV Payload 20-foot International Standards Organization (ISO) container consists of the BOIV, its winching system with associated cable, operator control for surface manoeuvring and two op-

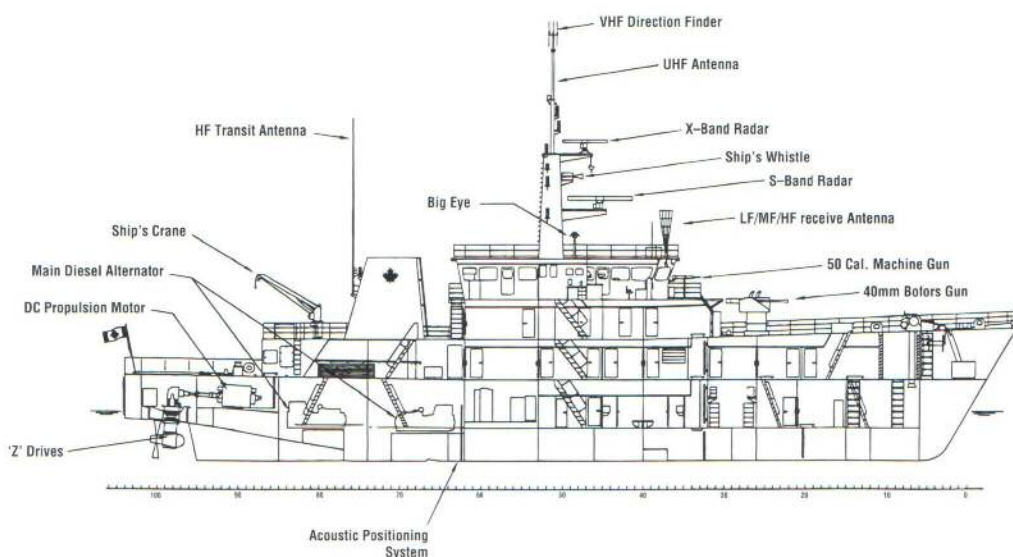
erator consoles. The operator consoles are installed in GLACE BAY's Operations Room when the BOIV is loaded on-board.

In a world with ever-changing political situations this versatile multi-payload design provides Canada with the ability to react to changing defensive needs. Further flexibility can be easily obtained through the quick installation of other payloads that support specific missions.

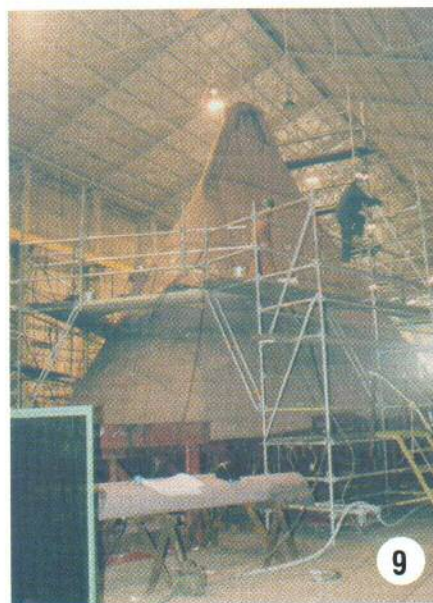
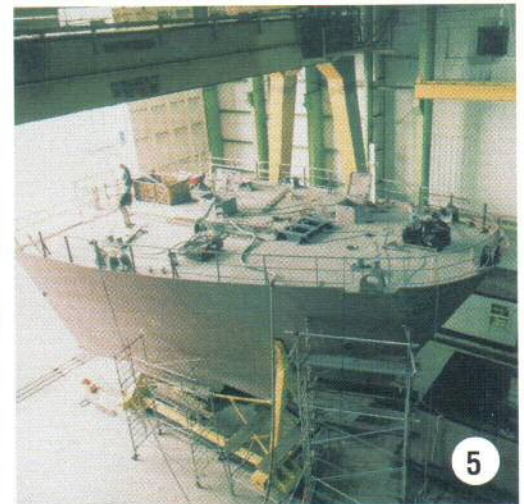
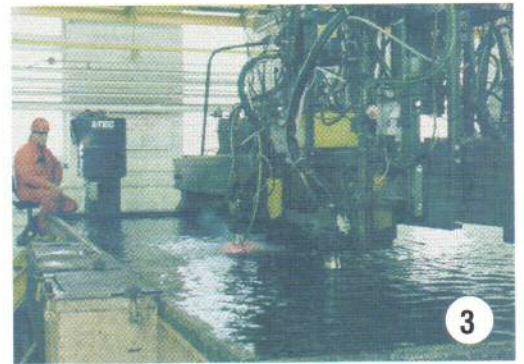
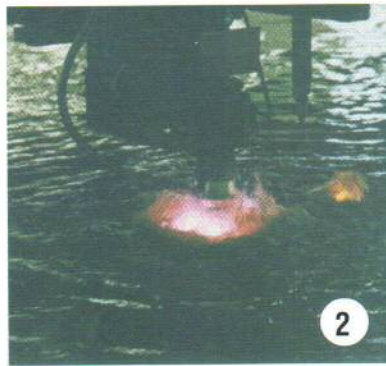




Length, oa .....	55.31m
Length, bp .....	49.00m
Breadth, moulded (focle) .....	11.30m
Depth to main deck (center) .....	5.00m
Depth to lower deck .....	2.00m
Draught .....	3.05m
Displacement .....	934t
Speed .....	15 knots (coastal surveillance)
.....	10 knots (mechanical minesweeping)
Range .....	5000 nautical miles (20% fuel reserve)
Propulsion .....	2 1150 kW DC propulsion motors
Propellers .....	2 Z-drive, 5 bladed fixed pitch propellers
Complement .....	35 officers and ratings
Armament .....	40mm rapid fire gun
.....	2 50 calibre HMGs









## Photograph Index



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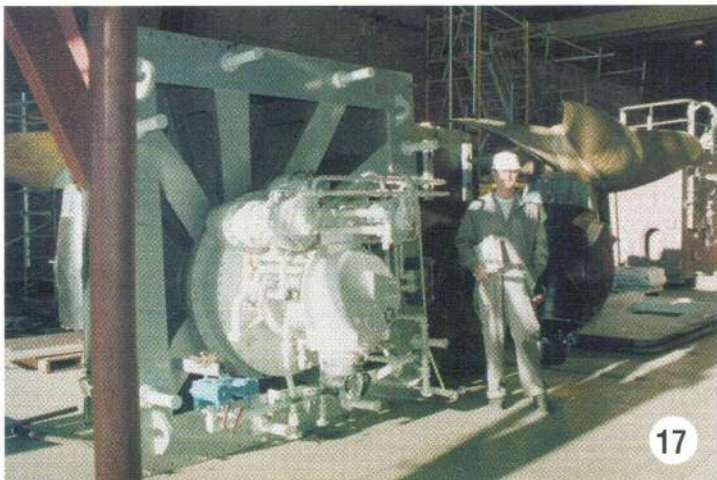
14



15



16



17

1. The plasma cutter first melts a zinc line onto the surface it will be cutting. The line is traced by a sensor when cutting takes place.
2. The water bath is flooded covering the steel plate. The bath provides cooling to the metal preventing heat warpage besides dampening any harmful radiation produced by the plasma cutter negating the need for costly shielding.
3. The plasma cutter uses a combination of electric arc and oxygen to produce an extremely hot, precise cut.
4. Each cut piece is labelled by a part number and a unit number. The part number will identify the piece within the unit and the unit number will identify where in the ship the part goes.
5. The unidentified workers in the photo's are welding and grinding parts for HMCS EDMONTON's centre block hull.
6. An assembled sub unit, part of HMCS EDMONTON's keel.
7. A mostly completed mast for HMCS GLACE BAY, and in the foreground, frame work for HMCS NANAIMO's mast.
8. Some preoutfit assembly of HMCS EDMONTON's fuel purifier and fuel transfer station. Note how completely piped it is before installation.
9. HMCS NANAIMO's bow section. Upside down construction speeds fabrication process by accessibility. The blocks and units are moved when ready and flipped by two overhead cranes in the building that straddle the assembly floor.
10. The forward and aft engine rooms of the HMCS NANAIMO, each denoted by the two large diesel generators covered in flesh coloured insulation. Forward of them is the switchboard compartment.
11. Pre-outfitting on the NANAIMO's engine room. Painting, pulling wires and installing insulation has already started.
12. The bow section of the GLACE BAY. The NANAIMO's middle and aft sections are directly behind it inside the building.
13. The back 2/3's of the GLACE BAY. The scaffolding in the foreground straddles the rails that lead down to the sea. The hull will be turned and then partially moved down the rails. The bow section will then be slid out, turned and slid to and aligned for welding with the aft sections.
14. A teflon pad that the cradle holding the ship upright rests on. All movement of the sections are done by hydraulic jacks.
15. The NANAIMO's fwd part of the aft section. The ribs are extended and the joining of the plates is stopped six inches from the edge to give tolerances for heat warpage.
16. The same section on the GLACE BAY with welding complete. The sections are jacked into place, metal half donuts are then welded to one place and wedges driven in to help alignment. Care is taken not to overly twist and torque the hull to preclude internal stress build-up. The seams are made by several passes with filler metal from an arc welder.
17. The author is standing beside the two Z-drives for the NANAIMO located just inside the doors beside the GLACE BAY's bow section. The author is six foot one inch. The Z-drives are designed to be pulled without having the ship go into dry dock. Pads on the quarter deck area are pulled and the Z-drive unit(s) are removed whole.





### THE COMBAT SYSTEMS SUITE

As a Canadian warship, HMCS GLACE BAY requires special systems that enable her to do the tasks for which she was designed. Because the ship was designed and built for multi-purpose roles, those tasks may include missions such as route survey using towed sidescan sonar, Coastal Defence and patrol, Bottom Object Mine Inspection or Mechanical Minesweeping. These roles, and the fitted equipment that assists in their completion, help define GLACE BAY as a vital component of Canada's combat - capable, general purpose Maritime Forces.

### MINE WARFARE CONTROL SYSTEM

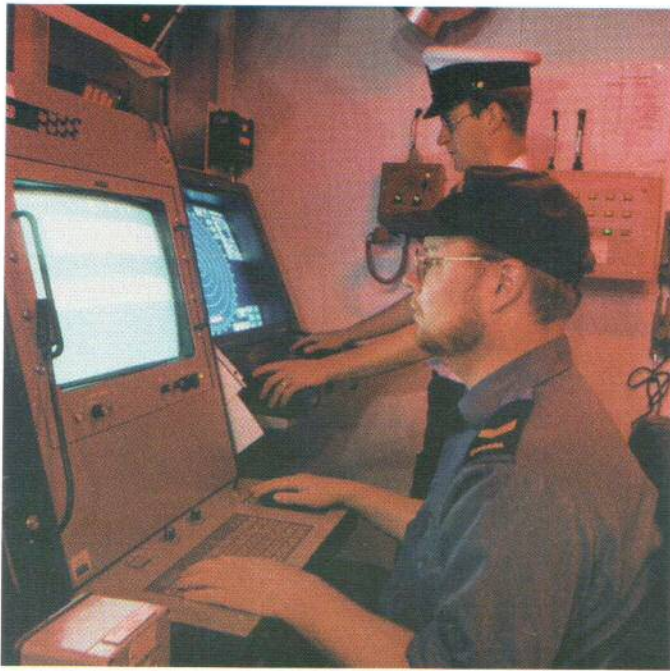
The tour of the combat systems suite begins with the Operations Room. In a coastal surveillance role, the operations room compiles a tactical picture of the information gathered from the ship's sensors with the MINE WARFARE CONTROL SYSTEM (MWCS). The MWCS is the most important permanently installed combat system in the operations room onboard HMCS GLACE BAY. The MWCS contains state of the art world-leading technology, consisting of the following subsystems: Tactical, Data Analysis and Database Management.

### TACTICAL SUBSYSTEMS

The Tactical subsystem integrates all navigation sensor inputs and generates a local operations plot, based on electronic charts, which display ship position, sonar information from the Route Survey payload, radar contacts and mine warfare contacts. The tactical subsystem is based upon commercial Pentium computer hardware and is integrated in the MWCS through a commercially available ethernet connection.



## SHIP'S DATA SHEET EXPLANATION



### THE DATA ANALYSIS SUBSYSTEM

The Data Analysis subsystem comprises two interchangeable detection and classification consoles for the display and analysis of real-time and historic sonar imagery. The detection and classification consoles are driven by two formidable DEC 2a workstation computers running in Unix X-windows format. The consoles are interconfigurable and are connected to the MWCS through an ethernet network connection. Each console contains two compact disk drives that both read and write (cut) CDs.

### THE DATABASE MANAGEMENT SUBSYSTEM

The Database Management Subsystem drives the ethernet network. It retrieves all sonar imagery and contacts from the database of previous missions for display by the data analysis subsystem. As new objects are detected and classified by the Bottom Object Inspection Vehicle or the multibeam side-scan sonar, they are stored by the Database Management Subsystem. This subsystem in the MWCS is based on the latest 64-bit open systems computer architecture using a DEC 3000 computer with 268 Gigabytes of Harddisk space and 60 Megabytes of RAM (memory). In terms of the average home computer, it has more computing power than 268 home systems.



### RADARS AND RADAR DISPLAYS

The highly modern radar systems fitted on HMCS GLACE BAY are more than capable of ensuring safe navigation and pilotage in the worst conditions. GLACE BAY uses an X-band radar primarily for navigation. The S-band radar is used primarily for surface surveillance. Both radars can be displayed in any one of three displays (two located on the Bridge, one in the Operations Room). The radar displays are Calvin-Hughes Nucleus 6000 radar systems. They have auto-tracking (ARPA) capability and feed contact information into the MWCS via the Tactical subsystem.





## THE COMMUNICATIONS SUITE

A tour of the Communications Suite of HMCS GLACE BAY requires a view into several parts of the ship. The *Communications Control Room (CCR)* is the communications nerve centre of the ship. Within are the controls which allow HMCS GLACE BAY to maintain communications with ships, aircraft and shore facilities with a minimal number of operators.

In HMCS GLACE BAY, the CCR is manned 24 hours a day. The operator works at one of two equipment racks which each contain a PC based computer system. The two racks 'talk' to each other and each system can be manipulated from either position.

The first rack contains the *Communications Control Matrix System (CCMS)*. The CCMS allows the operator to remotely configure and operate the radio equipment found in the Communications Equipment Room. Assignment of frequencies, testing, and designating tasks for circuits can all be done from the operators chair.

The second equipment rack contains the *Message Processing System (MPS)*. The MPS is used by the radio operator to send, receive and track messages sent via Radio Teletype to other ships and shore facilities. The MPS allows the operator to send out messages while simultaneously receiving traffic from other sources. At the same time, the Message Processing System can log and store information for future reference and ensure that no messages are lost over the airwaves.

The equipment that actually does the job of sending and receiving information over the airwaves is located in the *Communications Equipment Room (CER)*. The CER contains *Ultra High Frequency* transceivers which are utilized for tactical short range communications between ships and aircraft using voice and radio teletype. These transceivers operate with low power within line of sight. *High Frequency* transmitters and receivers which send and receive messages by voice and radio teletype and are used for long range communications. GLACE BAY's HF transmitters can emit over 1500 watts of power from each of the 35 foot whip antennae. This high power allows the ship to contact Canadian shore stations from great distances without the need for relay stations. *Radio teletype (RATT)* is the primary means of passing information from sea to shore. RATT requires a *modem* to convert the information into a signal which can be used by the transmitter and receiver.



*The Bridge* is generally thought to be used primarily for conning and steering a ship, but it is also an important part of the communications system of HMCS GLACE BAY. Remote repeaters are located on the bridge to provide secure communications with other Naval Vessels. These remote stations can operate the radios found in the CER. Moreover, two *Very High Frequency (VHF)* radios, are located on the bridge which are used for short range ship to ship or bridge to bridge communication. They are primarily used for communications with harbour control authorities and civilian shipping. An additional VHF direction finder used primarily for helping establish the direction to a ship in distress is located on the bridge. A *MARINEFAX* is available for receiving weather maps and navigation telex messages over HF frequencies.

Finally; two special receivers are located at the communicators position which will automatically activate in the event that an emergency distress alarm is received. Both HF distress frequency 2182 kilohertz and UHF military distress 243 Megahertz are constantly monitored by personnel on the bridge.

GLACE BAY also has two 10' *signal lamps* and two sets of international and military signal flags to maintain visual signalling capabilities.



## GLACE BAY's ENGINEERING

The Engineering Department in HMCS GLACE BAY is made up of three sub-departments: the Propulsion department; the Electric Department; and the Electronics Department which reflects the primary components of the ship's propulsion system.

### THE PROPULSION PLANT

The ship's propulsion system consists of four diesel alternators, each providing 715 kilowatts of electricity to the ship at 600 volts. These alternators provide power to two Thyristor Convertors. The Thyristor Convertors provide power and speed control to two DC



motors, which in turn provide power to two azimuth thrusters with fixed pitch propellers. This propulsion package provides the ship with a maximum speed of more than 15.5 knots and a range of 5000 nautical miles at 8 knots.

### THE Z-DRIVE SYSTEM

The Z-drive system are two electric motors that drive the propellers with a 360 degrees range of motion. The Z in the Z-drive describes the legs of the shaft. The top leg is the shaft from the electric motor to the top of the Z-drive compartment on the ship. The diagonal leg of the Z is the intermediate shaft between the Z-drive compartment and the thruster gears box, which is actually immersed in the water. The final leg is the gear box and the propeller. The azimuth ring is the gear that encircles the intermediate shaft going down to the propeller gearbox and is located in the Z-drive compartment. This gear ring controls the direction the propeller/thruster is pointing in. Rotate the gear ring and the thruster rotates as well. These Z-drive units turn independently of each other with a range of motion of 360 degrees. With this range of motion, the thrusters make the ship extremely manoeuvrable. GLACE BAY does not have any rudders.

### THE BLACK WATER SYSTEM

The ship is also fitted with an advanced environmentally friendly Black water system (raw sewage). This system collects sewage from all heads (toilets). A pump called a macerator, mulches it and pumps the sewage to media tanks. These media tanks have a constant supply of air bubbling through encouraging aerobic bacteria break down. The sewage is then treated lightly with chlorine, or with Ultra Violet light to kill the bacteria. Upon reaching suitable levels of purity the clean water is then discharged safely over the side. The sewage prior to being pumped over the side is clear and looks like drinking water. This system is required to be in place for most

ports in the world and the Ultra Violet purification process allows the ship to conform to clean environment laws. Travel in the Great Lakes would not be possible without this system.

### THE ROD UNIT

The ship also has the ability to make its own water. GLACE BAY's two ROD (Reverse Osmosis Desalinator) units that can make up to eight tonnes of water everyday. The ROD unit generates fresh water out from salt water. Salt water is pumped in at very high pressures. The water is forced through four membranes that separates the salt from the water allowing only freshwater through. The salt and other impurities are trapped in the membrane. The water is treated by adding chlorine which kills bacteria and filtered for both bacteria and chlorine. Bacteria being smaller than water molecules is removed in an industrial size charcoal filter before being sent to the ships drinking water system.

### CAMS & DAMAGE CONTROL SYSTEM

The ship has two extensive automatic engineering monitoring systems. The Central Alarm Monitoring System (CAMS) monitors almost every piece of machinery in the ship. This system monitors and displays information such as oil pressures and temperatures for diesel alternators, fuel levels in storage tanks, performance of water making equipment and fridge and freezer temperatures. The second system is the Integrated Fire and Damage Monitoring System which is called the Damage Control System (DCS). This is an alarm system which monitors 467 sensors that check for smoke, heat, high bilge levels or harmful gases sensors throughout the ship for fires, floods, or other emergencies. If any of these sensors detect a problem, an alarm will sound on the DCS panel and the location of the alarm will flash on a monitor in the Machinery Control Room and on the Bridge. The ship is then brought to emergency stations and deals with the emergency.

The integrated engineering systems found in HMCS GLACE BAY reflect Canada's strength in designing and building high quality industrial engineering plants. GLACE BAY is able to propel herself safely, steadfastly and without damage to the environment to any navigable waters Canada's defense requires.





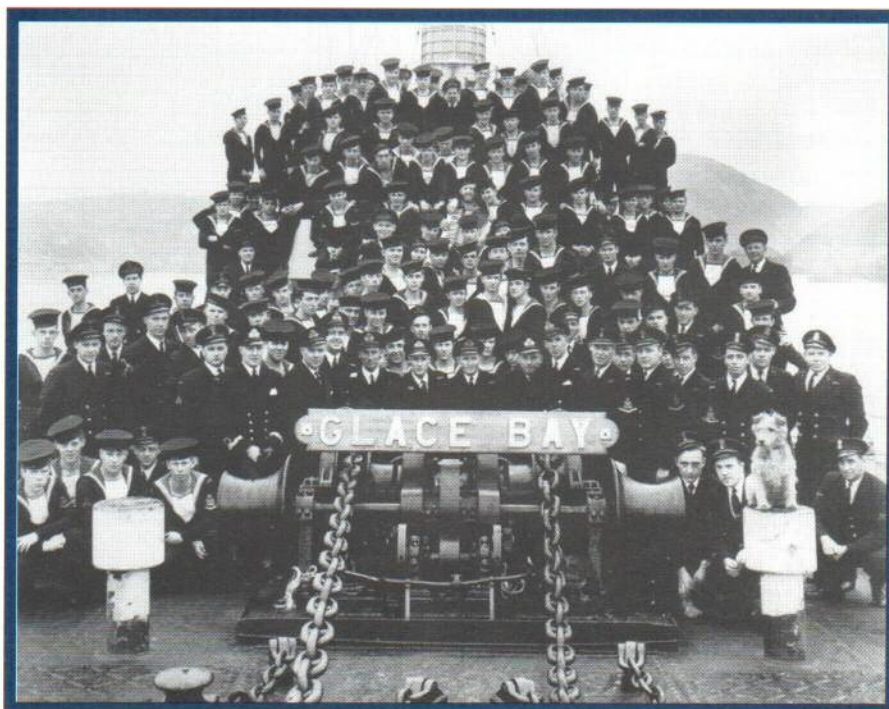
## THE CREW



Like all of the ships in Canada's Navy, HMCS GLACE BAY's crew represents many of Canada's diverse geographical regions. The officers and crew come from across Canada to rally under the name of the Cape Breton community, Glace Bay. Each person contributes something special to the ship's character as they bring with them a broad range of experiences, education levels, interests, and abilities.

Though each ship has its own character that begins with its commissioning and ends with its paying off, we should remember that it is the people who man the ship that give it its spirit, and without them, the ship is just a lifeless hull. Having the ship's company march aboard HMCS GLACE BAY is like breathing life into the ship. With a new vitality and a new ship's company, HMCS GLACE BAY becomes able to again represent the people of Cape Breton and provide service to the people of Canada.

HMCS GLACE BAY is just beginning a long life in Canada's Navy, if the spirit of the community that inspired the name continues to live in her crew, HMCS GLACE BAY will no doubt distinguish herself in its service and bring pride to the community that she represents. HMCS GLACE BAY is striving to build a reputation of excellence that will earn the respect due any great thing from the depths of the sea.





# SHIPS COMPANY

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COMMANDING OFFICER

EXECUTIVE OFFICER  
LIEUTENANT J.A.A. OFFER

COXSWAIN  
PETTY OFFICER FIRST CLASS S.J. CAKEBREAD CD

OPERATIONS DEPARTMENT  
LIEUTENANT P.A. KOCH  
LIEUTENANT R. KAPPEL  
LIEUTENANT T. KERR

OPERATIONS OFFICER  
BRIDGE WATCH KEEPER  
NAVIGATING OFFICER

COMBAT INFORMATION  
PETTY OFFICER SECOND CLASS J.T. GARDINER UNDOF  
PETTY OFFICER SECOND CLASS C.D. WALKINSHAW  
LEADING SEAMAN L.U. JOHNEN  
LEADING SEAMAN P.S. McMERTY

OPERATIONS ROOM SUPERVISOR

COMMUNICATIONS  
PETTY OFFICER FIRST CLASS C.A. RADIMER CD UNDOF  
MASTER SEAMAN T.S. O'BRIEN  
LEADING SEAMAN H.L. WALLACE

YEOMAN

DECK DEPARTMENT  
LIEUTENANT C.A. VERMEERSCH  
PETTY OFFICER SECOND CLASS W.S. BEGGS CD  
MASTER SEAMAN J.L. LAND  
LEADING SEAMAN I.G. DUPUIS  
LEADING SEAMAN L.M. LAJOIE  
LEADING SEAMAN M.S. LAMONTAGNE  
LEADING SEAMAN P. MICHAUD  
LEADING SEAMAN M.S. SIMONEAU  
ABLE SEAMAN S.W. BROWN  
ABLE SEAMAN M.J. WIEBE  
ABLE SEAMAN T.E. JANCZYK

DECK OFFICER  
CHIEF BOATSWAIN'S MATE

ENGINEERING  
CHIEF PETTY OFFICER SECOND CLASS M.J. SYZEK CD

CHIEF ENGINEER

PROPULSION  
PETTY OFFICER SECOND CLASS S.K. GILDAY  
PETTY OFFICER SECOND CLASS J.E. GOURLAY CD  
PETTY OFFICER SECOND CLASS J.J.M. HARVEY  
PETTY OFFICER SECOND CLASS F. VENGELS  
LEADING SEAMAN R.J. BUNGAY  
LEADING SEAMAN H. CONNORS  
LEADING SEAMAN J. CROSBY  
LEADING SEAMAN J.F. PARENT  
LEADING SEAMAN B. WALL

ELECTRICAL  
PETTY OFFICER SECOND CLASS G.D. HARDING CD SSM  
MASTER SEAMAN D.J. ANDERSON CD

SENIOR ELECTRICIAN

LOGISTICS/ADMINISTRATION  
PETTY OFFICER FIRST CLASS D.M. NICOLLE CD  
LEADING SEAMAN R.A. CORLETT  
LEADING SEAMAN P.M. TORCHIO

SENIOR COOK



## GLACE BAY: The Community that Inspired the Name of the Ship

Glance Bay (pop 19, 501) lies situated at the junction of Routes 4, 28 and 255 on Cape Breton Island, Nova Scotia. "Glance" is French for "ice" and the town was so named because of drift ice in the harbour. Glance Bay was the first town in the British Empire, and in Canada, to receive its charter under the reign of His Royal Highness King Edward VII. In the 1950's and 60's, Glance Bay's population was more than 28,000 and became known as the "biggest town in Canada." Glance Bay was traditionally a big coal-mining town with a hard-working population, and strong union ties.

Today Glance Bay has several excellent shopping areas, Renwick Brook Park, two hospitals and a wharf where Glance Bay's fishing fleet can be found. Also in Glance Bay is a performing arts centre and a local police detachment.

Visitors to Glance Bay can learn about the history of Cape Breton coal mining at the Miner's Museum at Quarry Point by touring Ocean Deeps Colliery. The museum features many exhibits and its own coal mine. At Table Head, the Marconi National Historic Site features a small museum which documents Guglielmo Marconi's telegraphic achievements in Cape Breton. Marconi initiated today's network of global communication by proving it was possible to send messages across the Atlantic using electro magnetic waves instead of wires.

Finally, Savoy Theatre on Union Street, Glance Bay's performing centre, is both a community landmark and a nice place to catch a variety of entertainment that's staged throughout the year. This fine Community will no doubt provide an honourable heritage for the second ship which will bear its name.



## Cape Breton Island: The Region that Forged the Community

Cape Breton Island is the Highland Island located at the northeastern segment of Nova Scotia, Canada. The elegant Strait of Canso, 3 km (2 mi) wide, separates it from the mainland and is spanned by a road and rail causeway. The Atlantic Ocean lies to the east and the Gulf of Saint Lawrence to the west. The island is about 177 km (110 mi) long from north to south; its greatest width is 129 km (80 mi). The area is about 10,282 sq km (3,970 sq mi). The jagged coastline appears rugged and alluring with its many inlets. Lake Bras D'Or, the large body of tidal saltwater in the center of the island, is a popular recreational area attracting tourists from around the world. The island's terrain is hilly, with the highest point being 532 m (1,747 ft).

Fishing, one of Cape Breton's attractions, is rich along the coast of Cape Breton Island. Industrially, coal and iron are mined in the east, and steel is manufactured in both the city of Sydney and in Glance Bay. Farming is concentrated in the west. Cape Breton Highlands National Park is in the north, and tourism is an important industry throughout the island. Bretons from France fished off the coast in the 17th century, and the island belonged to France until 1763, when it passed to Great Britain after the French and Indian War. The island was a separate province from 1784 to 1820.







