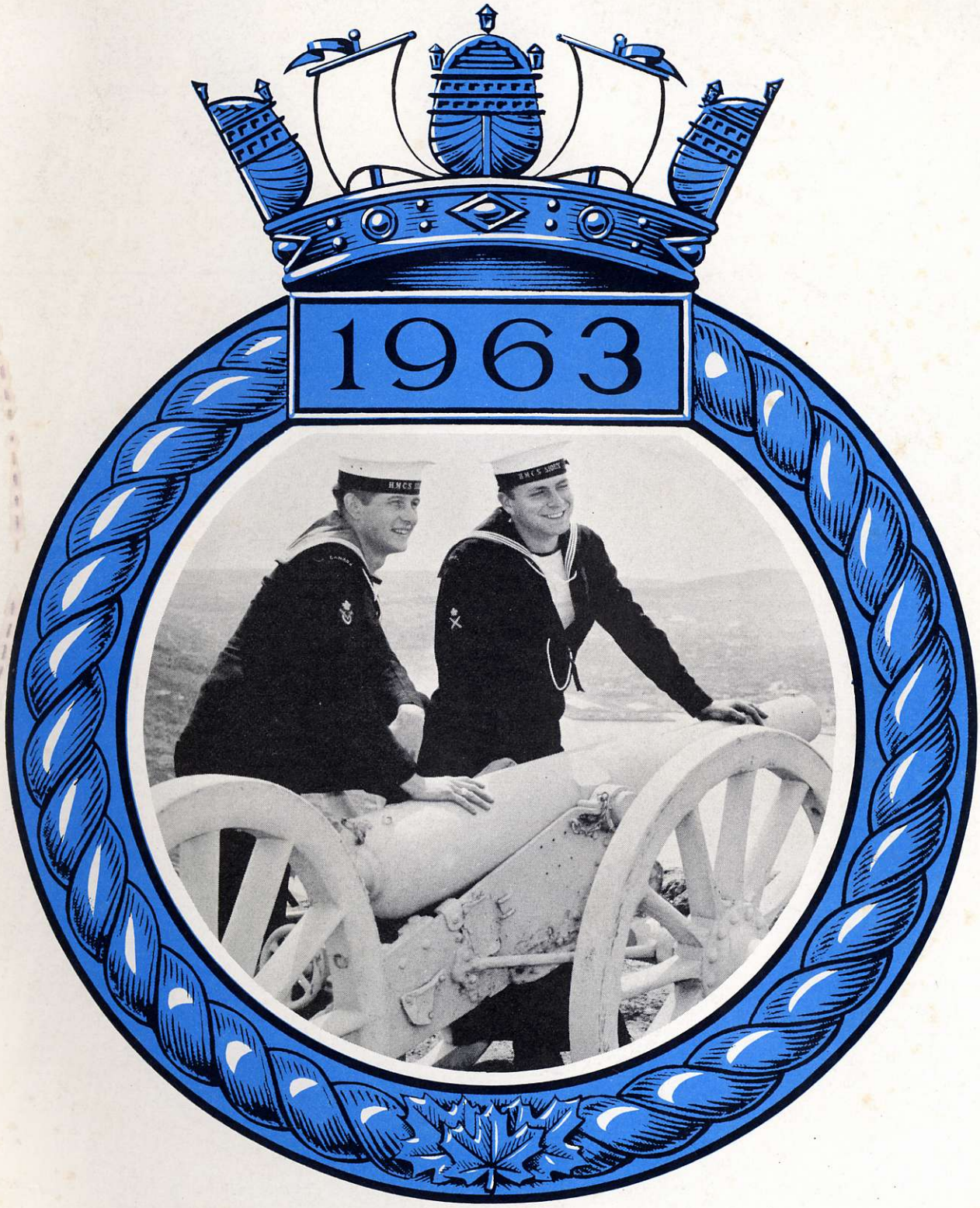
OUR NAVY



Special Issue of The CROWSNEST


233

The CROWSNEST

Vol. 15 No. 4 THE ROYAL CANADIAN NAVY'S MAGAZINE APRIL 1963

CONTENTS

The Cover—Two prairie-born sailors look out over the historic city of St. John's, Newfoundland, during a visit to the Old Colony by their ship, HMCS *Sioux*. (HS-69100-15)

OUR NAVY

For the fifth consecutive year, the Royal Canadian Navy's annual publication *Our Navy* appears as a special issue of *The Crowsnest*.

Most of the main articles have already appeared in the 1963 RCN issue of *Canadian Shipping and Marine Engineering News*, Toronto. Regular *Crowsnest* departments will be resumed with the May issue.

On the Opposite Page: A U.S. Coast Guard photographer caught this portrait of HMCS *Fraser* as she entered a mist-shrouded fiord in Alaska.

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THE RCN IN 1963

"It has been startlingly apparent this past year that the margin between peace and war can become dangerously narrow in a very brief time. That the ultimate catastrophe did not occur can be credited to calm statesmanship, firm resolve and, in a large measure, to the deployment of adequate sea power at the moment of crisis."

VICE-ADMIRAL H. S. Rayner, Chief of the Naval Staff, in his 1962 message to the fleet, focussed attention on the importance of maritime preparedness. The operative words are "the deployment of adequate sea power at the moment of crisis".

The Royal Canadian Navy fits into the intricate structure of 1963 seapower in the free world. It is a relatively small force. Approximately 21,500 officers, men and wrens man and support a fleet of 60 combat ships and six squadrons of naval aircraft. On paper it is not one of the great sea fleets although, according to *Jane's Fighting Ships,* the RCN ranks ninth in number of combat ships among the world's navies.

What is the RCN doing with this operational fleet? Are its role and operational tasks related to the stark facts of modern warfare? Is there anything better, more effective in the way of advanced weapons systems over the horizon?

The purpose of the Royal Canadian Navy is to ensure that Canada, in co-operation with allied and friendly nations, will have unrestricted use of the seas. The Navy's role, in support of Canada's defence policy is: to maintain sea communications; to defend Canada against attack from the sea; to contribute to the collective defence of the NATO area and to contribute naval forces to the United Nations as may be required.

This is a tall order but, placed in the perspective of the western alliance, it is being carried out by a balanced and effective RCN.

While the future role of the Navy will not alter, the possible maritime threats facing the West are changing with technological advances. The nuclear-powered submarine, armed with long-range ballistic missiles, is the most potent, deployable and elusive weapon carrier the world has known. This statement arouses little disagreement among defence authorities today. But for many years to come the main sea threat to the security of North America comes from the large fleet of conventional Russians submarines capable of operations far from their home bases.

The threat is real and poised below the surface. But these weapon carriers can be detected and destroyed. The USSR, her allies and satellites, have a total of 515 submarines *(Jane's)*—a staggering undersea fleet, many times the size of Germany's at the beginning of the Second World War. Of these 515 submarines, only 12 are nuclear-powered. The remaining 503 are conventionally powered and only a small proportion have materially expanded capability over the war-time types.

The RCN, which has specialized in anti-submarine warfare, is fully capable of hunting and killing conventional submarines. Seapower

must be mobile, self-sufficient and possess extended "on station" endurance. Most important, the arms of seapower must be in existence; trained and made available to-day.

The aircraft carrier *Bonaventure* leads the anti-submarine team. A modern ASW (anti-submarine warfare) carrier, she has the angled-deck, mirror landing-aid and steam catapult. She carries an airborne team of Tracker anti-submarine aircraft and HO4S anti-submarine helicopters (these will be replaced by formidable, all-weather Sikorsky CHSS-2s). There are 25 destroyer escorts in the fleet, 16 of them having been delivered from 1955 onwards. The others, which will be replaced by new ships in the next few years, have all been extensively re-equipped for anti-submarine warfare. Making up the "second line" of anti-submarine escorts are 18 wartime-built frigates which were rebuilt and rearmed a few years ago. One Second World War submarine provides training for the fleet on the west coast and two Royal Navy submarines, on loan to the RCN, perform the same task in the Atlantic Command.

A minesweeping squadron on each coast is maintained to allow the mine-free passage of shipping in coastal waters and sweep clear the approaches to our harbours.

Backing up the ASW force are two escort maintenance vessels, designed to provide a mobile repair facility. A new fleet replenishment ship, the *Provider,* will join the fleet this summer to provide fuel and stores to the ships on station.

But the modern submarine is developing fast in terms of speed, underwater endurance (now virtually unlimited in the case of nuclear powered submarines) and firepower. The RCN, well equipped to cope with the existing threat, is at the same time anticipating tomorrow's problems.

The combination of two recent advances will give the surface attacker a new lease on life.

The variable depth sonar helps to solve the detection problem where water layers of differing temperature gradients distort or completely deflect sonar transmissions from a ship's hull-mounted transducer. This device, developed by Defence Research Board scientists, working with RCN technical officers, is now in production in Canada. One installation is in service in HMCS *Crescent* and two more are being fitted in the *Assiniboine* and *St. Laurent.* A dividend for Canadian industry is the sale of VDS installations to both Britain and Australia, and other foreign buyers are expressing keen interest.

The Saskatchewan, second of four Mackenzie class destroyers which will have joined the fleet by the end of this year.

The first Sikorsky CHSS-2 twin-turbine all-weather helicopters will be delivered to the RCN in May. Nine of these helicopters are being obtained during the 1963-64 fiscal year. Each will carry a crew of four, two pilots and two sonar operators. Equipped with the latest navigation, detection and weapon systems, the CHSS-2 will be capable of locating, tracking and attacking a submarine while operating in conjunction with or independently of surface ships. (CN-6572)

The second advance is not, strictly speaking, new. That seemingly ponderous bird, the helicopter, is the only aircraft that can operate a sonar set. Helicopters, equipped with "dunking sonar", have been operating from aircraft carriers for some years. But experiments to adapt "chopper" operations to destroyer-escort types have been going on since 1957 and have borne fruit. The RCN made the decision to fit surface escorts with helicopter handling facilities and the VDS at the same time.

This is being done to the *Assiniboine* and *St. Laurent* in West Coast shipyards. The ships will resume operations late this year. The other five ships of the St. Laurent class will be similarly converted over the next couple of years. The last two ships of the Mackenzie class, the *Nipigon* and the *Annapolis,* under construction, are having the new facilities built in before they commission in 1964.

The all-weather helicopter—in this case the CHSS-2—will be teamed with fixed wing aircraft and surface ships. The helicopter, capable of four to five times the best attainable speed of the submerged nuclear submarine, will be the "wingman" of the attacking team, circumscribing the speeding target and then assisting in its destruction.

Sonar, the main detection device against submarines, remains the limiting factor in ASW. There have been improvements in range and accuracy since the Second World War but nothing like the qualitative improvement or expansion in the listening frontier that are needed. But certainly the VDS has beaten one of the serious problems and, in concert with an all-weather helicopter to lengthen the destroyer escort's reach, it will make ASW a more equal contest.

Looking ahead to the next decade, several additions to the fleet will increase its capability.

The government announced, in 1962, a new construction program of eight general purpose frigates. Construction will begin in 1964 and all eight ships are scheduled for completion by 1969 or 1970. These ships will have broad fighting scope. Armed with two missile systems for anti-aircraft and anti-missile defence, they will also be fully equipped with anti-submarine detectors and weapons. In addition they will be armed with a twin five-inch gun mounting for shore bombardment in any "brush-fire" or interdiction operation which the UN may require Canadian forces to support. Another facet of this new type is that she will be able to transport combat troops up to company strength, complete with equipment, land them and then support their operations. The ship's utility-type helicopter, in addition to its other uses, will also be of tactical value in Army-support operations.

Another result of continued and concentrated studies to cope with the submarine threat will possibly be the adoption of a revolutionary anti-submarine vehicle, the hydrofoil.

The hydrofoil craft has been under study by several navies in recent years to determine its adaptability as an anti-submarine systems carrier. The Defence Research Board and de Havilland Aircraft of Canada recently completed an intensive feasibility study. Based on technical and design study and models testing, their report recommended that a design study for a prototype vessel be undertaken, that the vessel be built, given sea trials and serve as a vehicle for detection and weapons systems testing. Funds have been allocated to carry the project forward and, in the next decade, the hydrofoil may become a combat ship in the RCN's anti-submarine team.

The fleet capability is dependent on the degree of training and skill of the officers and men in it. Their proficiency in the ASW "art" is maintained at a high standard by continual exercises at sea backed up by comprehensive training facilities ashore.

Professionally capable today, the RCN is polishing its specialty and working toward expanded proficiency to meet the growing threat which looms tomorrow.

This is an artist's conception of the proposed General Purpose Frigate. Construction on the first of eight of these frigates will begin in 1964 and all are scheduled for completion by 1970. The ships will carry two missile systems for anti-aircraft and anti-missile defence and will be fully equipped with anti-submarine detection and attack facilities. Armament will include a twin five-inch gun mount. The ships will be capable of transporting a company of combat troops, complete with equipment, landing them and supporting operations ashore. A utility helicopter, carried on board, will be of tactical value to Army operations ashore. (CN-6523)

HMCS Cayuga buries her bow in a wave during a fuelling operation at sea. (OT-3508)

THE PROVIDER'S TASK

SOME TIME during the autumn of 1963 a Mackenzie class destroyer escort will hoist flag "Romeo" closeup and move into station 140 feet to starboard of HMCS *Provider*, the RCN's 22,000-ton fleet replenishment vessel.

Gun lines of light cord are then passed, both amidships and on the quarterdeck, between the two ships and these are followed by "messengers" (heavier lines). In short order, a fuelling span wire and heavy jackstay of wire rope link the ships together.

Word is passed to the bridge that the span wire and jackstay are secured. The destroyer escort's commanding officer orders a caution to the wheelhouse to "standby" for the strain. The ship heels slightly to port as the strain is applied and counteracting wheel is quickly applied.

After a short period, "start pumping," is passed by phone and soon "ready to receive" is heard from the after station of the destroyer escort.

By

Lt.-Cdr. E. T. Fisher, RCN

Finding some difficulty in maintaining station, the destroyer escort's captain moves his ship out to a distance of 180 feet where she settles down comfortably, still with a slight heel to port and carrying corrective helm, but clear of the effects of interacting bow waves.

Forty minutes later with storing completed aft, the heavy jackstay is being recovered by the *Provider*. Another 10 minutes and "stop pumping" is heard, and the hose is recovered by the *Provider* with the span wire following.

As the last line disappears from the bridge wing, the destroyer escort's commanding officer notes that the total elapsed time from receiving the gun line is 65 minutes, and turns his attention to the "break off" procedure.

Should the naval reader at this point be inclined to mutter "So what?" and observe that, "except for the receiving

ship being too far off and not requiring much fuel, it seems pretty routine", no one could blame him. But there's more to it:

First — A speed of close to 20 knots was maintained throughout the evolution;

Second — Approximately 300 tons of furnace fuel oil was transferred;

Third — Ten tons of ammunition and stores were transferred.

Those present at this future date will be witnessing the final evolution of HMCS *Provider's* trials and work-ups, with a consort in company fully equipped to make use of her replenishment facilities. The event will also mark the final step in providing the RCN with a replenishment-at-sea capability of its own, tailor-made for destroyer escorts and future RCN ships, and capable of replenishing ships of other NATO navies.

HMCS *Provider* will have a loaded displacement of 22,000 tons and a service speed of 20 knots derived from a single screw and conventional steam turbine power plant. Liquid cargo will consist of furnace fuel oil, diesel and aviation fuels in quantities related to expected expenditure. Solid cargo spaces can include all types of ammunition and missiles likely to be used in the fleet, general stores and fresh provisions.

The ultimate purpose of a fast fleet replenishment ship is to transfer the necessary fuel, stores, and provisions, as quickly as possible, and in all but the very worst weather conditions.

The transfer arrangements being fitted in the *Provider* will be complex and important features of the ship, where, in a destroyer escort all other functions and equipment support the operation of the armament, in the *Provider* they will support the operation of the transfer rigs. These transfer facilities will consist of three fuelling abeam rigs, a stern fuelling ring and four solids transfer rigs. Light jackstay fittings for transfer of personnel will also be fitted.

Replenishing at sea at high speeds require that ship separations of up to 200 feet be possible. It also means that movement rates due to roll and sheer are correspondingly faster than at lower transfer speeds to which we are accustomed. To compensate for these movements, at greater distances, automatic tensioning equipment is necessary which will take care of sudden changes and provide the winch operators a safe margin of time in which to react. For this purpose the *Provider's* fuelling span wires and heavy jackstays are being fitted with "ram tensioners", which automatically compensate for movement up to 40 feet on either side of a mean, while maintaining a pre-set tension. As the ram tensioners are compressed or extended, winch operators can take appropriate action to re-centre them.

The Provider was launched in July 1962 and will be commissioned into the fleet this coming August. As a unit of the fleet, the Provider will provide fast replenishment facilities to transfer fuel, stores and provisions as quickly as possible in all but the very worst weather conditions. (ML-11168)

Fuelling rigs will be of the span wire type, with a single hose avgas rig on the port side forward and a double hose furnace fuel oil and diesel rig on each side amidships. Each rig will utilize four troughs with all trough wires and recovery wires controlled individually by winch. With the exception of the span wire winches, all winches associated with the fuelling rigs will be remote controlled from a platform overlooking the operation.

Transfer of solid stores to small ships by the heavy jackstay method, under the conditions outlined above, presents a more formidable problem than the transfer of liquids.

As the loads will be up to 2,000 pounds in weight, all aspects of the transfer arrangements must employ mechanical power. Since destroyer escorts do not have a suitable winch

available at the receiving point on the after deck, power for both the inhaul and outhaul must be supplied by the *Provider*. These inhaul and outhaul lines must also be automatically tensioned.

Having met the requirements for solids transfer thus far discussed, it is also necessary to establish a target delivery rate, within which the system is designed to operate. This delivery rate, to which the solids transfer system on the *Provider* is designed, envisages a 2,000-pound load being landed on the deck of a receiving ship every four minutes, at up to 200 feet separation between the two ships. The arrangements necessary to accomplish this, incorporate a sliding padeye on a samson post, which raises and lowers the tensioned jackstay, and, therefore, the load as well. In addition to the ram tensioned highline both inhaul and outhaul winches are to be tensioned thus making the whole operation independent of the variable distances due to roll and station keeping.

An important part of the system will be a "receiving head" or "buffer", on the receiving ship's end of the jackstay, which will permit the traveller and load to arrive at full speed, and be stopped, without transmitting any shock loads to the receiving ships' securing point. In conjunction with the tensioned inhaul-outhaul winches this feature will permit the most simple winch operation possible. All winches will be remote controlled from a control platform, similar to that for the fuelling rigs.

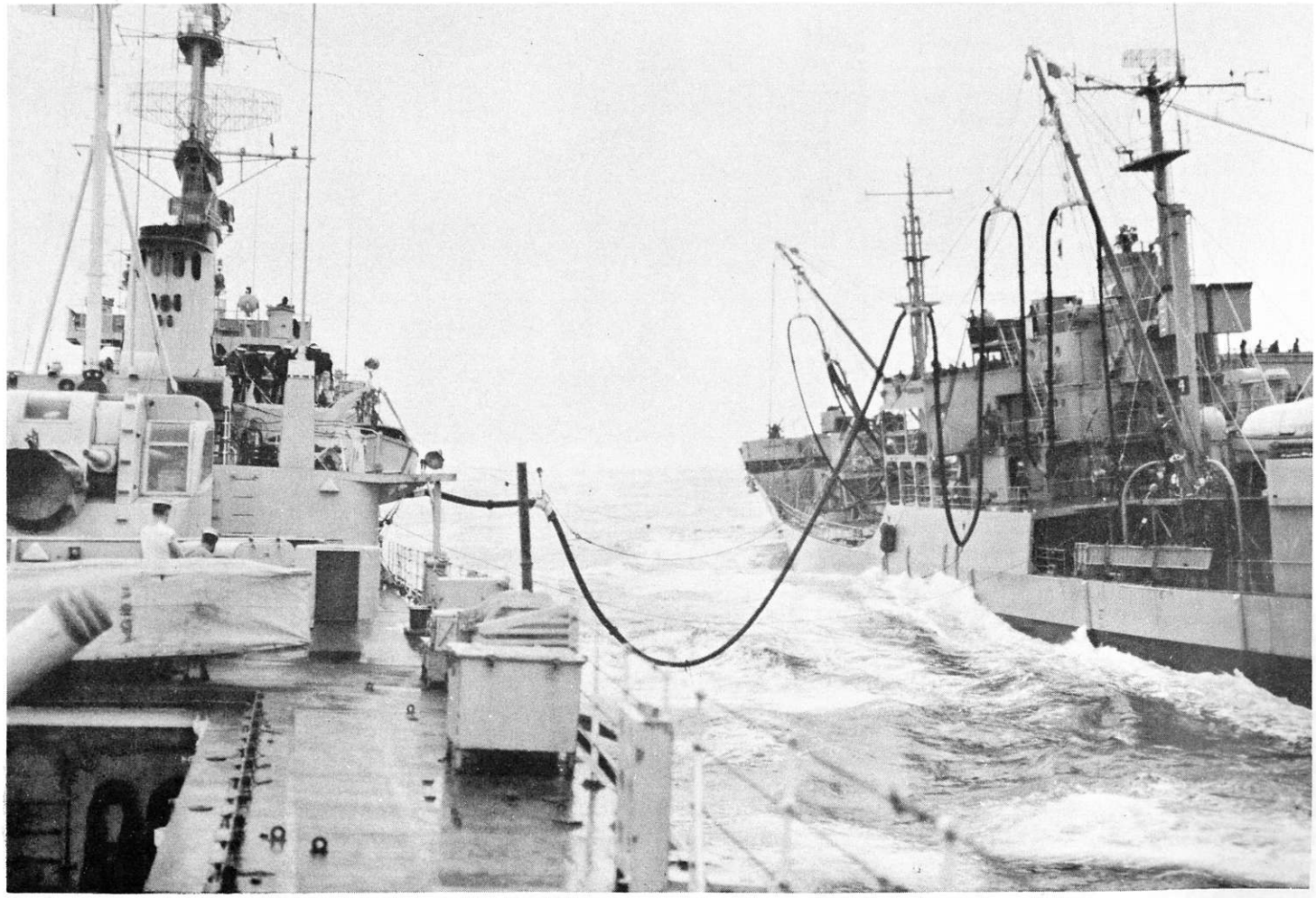
The receiving ship's arrangements must be compatible with the *Provider's* transfer arrangements if maximum potential is to be realized. St. Laurent class destroyer escorts and later classes will, in due course, have suitable receiving arrangements fitted. These fittings will include a fuelling span wire securing point amidships, approximately six feet above the main deck level on each side, and a telescopic quarterdeck storing post fitted with a travelling padeye. The storing post will be power operated for raising and lowering and for operation of the padeye.

The receiving ship's arrangements, to be effective, must include a means of quickly clearing the landing areas before the arrival of the next load. For this purpose, a combination of overhead hoists and conveyors, pallet lifters, and roller trays will be used. Pallets will be standardized to suit the particular items being handled.

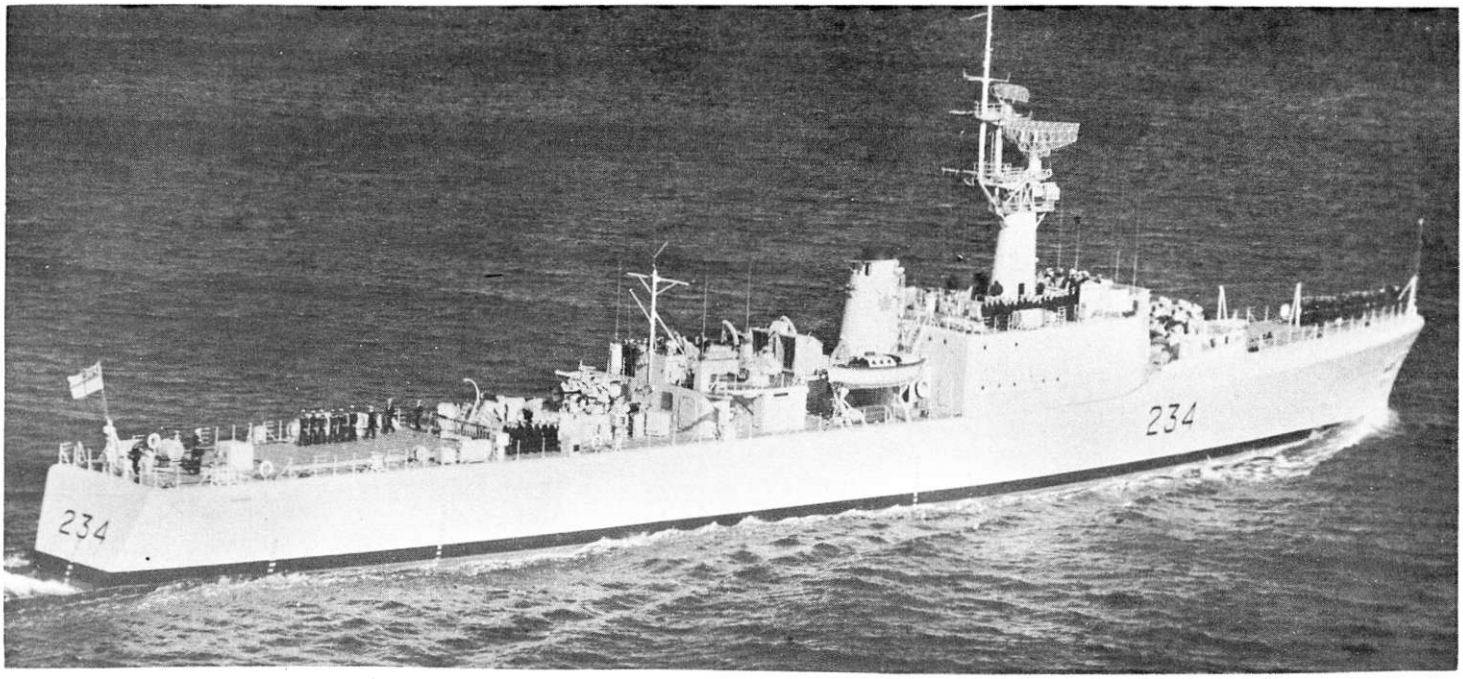
From the above description, it is apparent that expert seamanship will be vital to the efficient conduct of the replenishment operation. As people can not be designed and constructed like padeyes, an extensive training program will be carried out before the *Provider* takes over her duties with the fleet.

For the seaman who fancies himself as a "rigger", the replenishment rigs, which employ 23 winches, over two miles of wire larger than 2" circumference, and blocks and associated equipment to match, should give adequate scope to his talents.

The art of transfer at sea will have truly become a subtle blend of science and seamanship.



HMCS Restigouche fuels from a U.S. Navy tanker during NATO fleet manoeuvres in the Atlantic. Standard hose couplings are fitted in NATO ships. (HS-64756-70)



HMCS Assiniboine before the start of her conversion program. She will rejoin the fleet later in 1963. (DNS-16385)

THE CONVERSION PROGRAM

THERE IS more—much more—to the St. Laurent class conversion program than merely installing a helicopter landing platform on the quarterdeck and hooking variable depth sonar gear on the stern.

It is a job of major proportions.

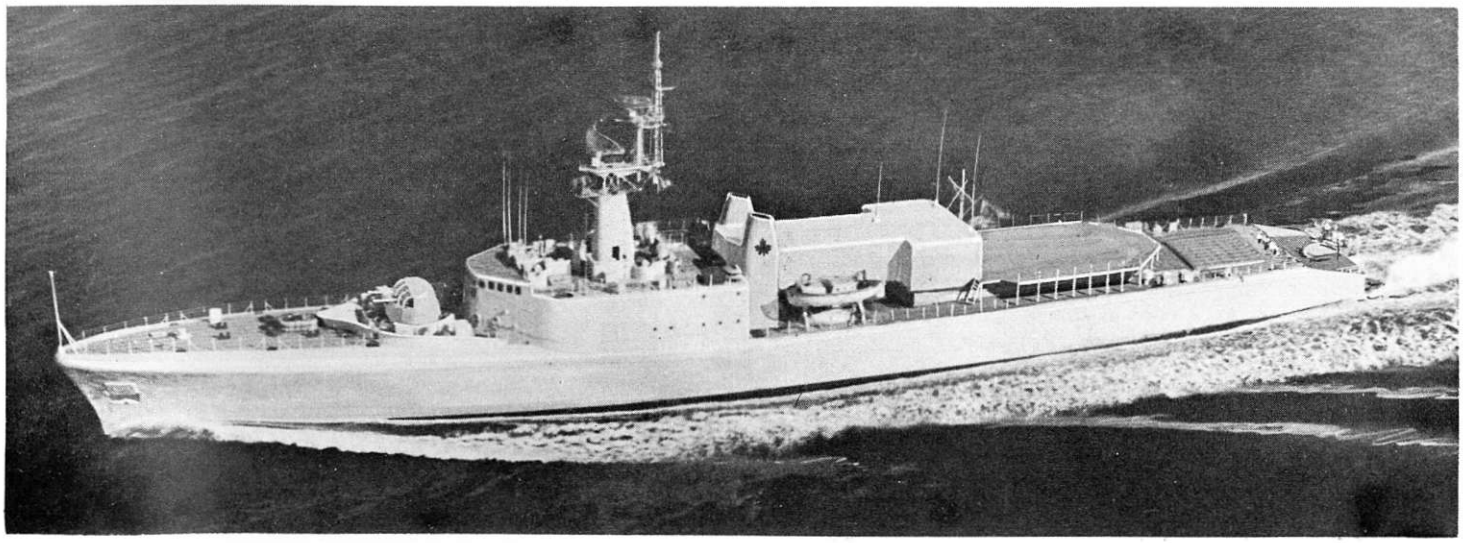
Except for the main machinery spaces and some of the forward sections, the two ships now being converted, the *Assiniboine* and *St. Laurent,* have required almost total redesign and reconstruction inside and out.

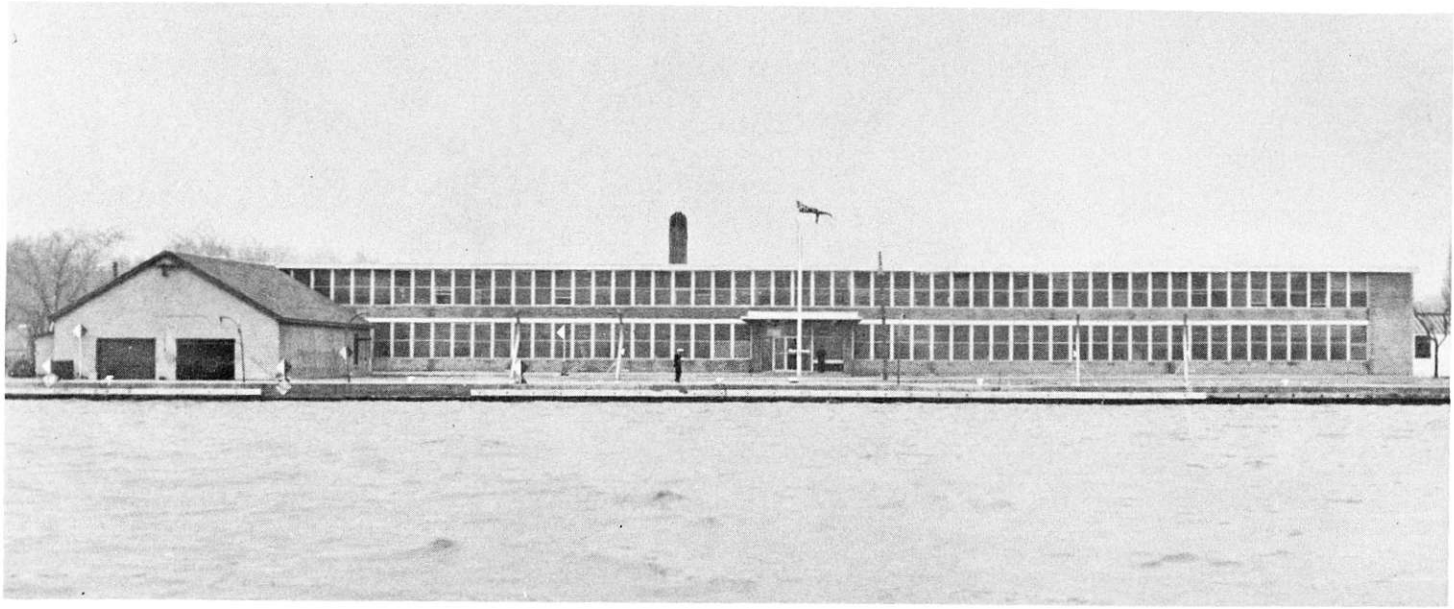
It is estimated the conversion entails some 2,400 man-months per ship, devoted mainly to strengthening the hull and providing hangar and fuelling facilities for heavy anti-submarine helicopters, altering the stern to accommodate variable depth sonar and its associated equipment, rearranging office and accommodation facilities, extensive re-wiring and adding activated fin stabilizers to the hull to reduce roll in rough weather as an aid to helicopter operations.

When completed, the St. Laurents will virtually be new ships, with a new look and new capabilities. The photo at the top shows the *Assiniboine* before being taken in hand for conversion, and below is an artist's conception of what she will look like when she returns to sea.

The *Assiniboine* is at Victoria Machinery Depot and the *St. Laurent* is being converted by Burrard Dry Dock Company, Ltd., North Vancouver. In addition, HMC Dockyard, Esquimalt, is engaged in refurbishing equipment not affected by the conversion. Two other ships of this class will be taken in hand this year, and similar programs for the remaining three ships will be undertaken in 1964-65.

This is an artist's sketch of what the seven St. Laurent class destroyer escorts will look like when their conversion program is completed. (CN-6407)





Exterior view of the headquarters building, Commanding Officer Naval Divisions (COND), on the waterfront at Hamilton. (COND-2550)

THE RCNR'S NEW OUTLOOK

A NEW personnel structure has been brought into the Royal Canadian Naval Reserve, designed to bring it generally into line with the Royal Canadian Navy personnel structure introduced in January 1960.

Under the new system, recognition has been given to the limited time available in any one year to train the naval reserves in the increasing complexities of naval warfare.

There is a considerable background to the development of Canada's naval reserve force. Temporary and volunteer naval personnel have had a comparatively long and varied history in this country, commencing with the Militia Act of 1846, which authorized a provincial naval corps. This naval corps was never formed but other quasi-naval units came into being and led up to the formation of the Royal Naval Canadian Volunteer Reserve (RNCVR) of the First World War.

The present naval reserve came into being in 1923 as the Royal Canadian Naval Volunteer Reserve and the Royal Canadian Naval Reserve. The RCNVR had a complement of 70 officers and 930 men, while the RCNR, which was drawn from the merchant service, had a complement of 70 officers and 430 men.

The worth of the reserve forces was proven during the Second World War when the naval reservists, who had numbered 2,000 at the outbreak, provided approximately 95 per cent of the Canadian naval service personnel at the peak active service strength of 95,705.

At the end of the war, the two components were combined to form the Royal Canadian Navy (Reserve). At the same time the name "reserve division" was changed to "naval division", to provide a more accurate description of the force which, in addition to the reserve operation, had a substantial commitment to the regular force.

It was intended that the structure for the officers and men of this re-organized reserve would fully parallel that for the ranks, trades training and promotion of the regular force personnel. A large

Ten years ago, Hamilton became the location of the headquarters of Commanding Officer Naval Divisions from which 21 divisions of the Royal Canadian Naval Reserve across Canada are administered. Previously the organization had been administered through Naval Headquarters at Ottawa by a Director of Naval Reserves.

On March 28, 1953, the new reserve headquarters came into operation. On April 27, Commodore K. F. Adams was appointed as the first Commanding Officer Naval Divisions. He was promoted to the rank of rear-admiral in May 1955 and his title was changed to Flag Officer Naval Divisions.

The staff of the newly-established headquarters was first located in buildings of HMCS Star, *Hamilton's naval division. In October 1954, the cornerstone of the present headquarters building was laid by Rear-Admiral Walter Hose, now retired and living near Windsor. In May 1955, the combined naval and civilian staff moved into its present quarters, commissioned as HMCS* Patriot.

In April 1958, Rear-Admiral Adams was relieved by Commodore E. W. Finch Noyes who served as Commanding Officer Naval Divisions until his appointment in June, 1960, as Flag Officer Pacific Coast, with the rank of Rear Admiral. He was succeeded in the Hamilton appointment by Commodore P. D. Taylor, who became Commanding Officer Naval Divisions on August 22, 1960, having previously served in London, England, from May 1957, as Naval Member Canadian Joint Staff.

Reserve Officer Structure Revised

A new RCNR officer structure, closely akin to that adopted for the RCN in recent years, was introduced on April 1, 1963.

On that date, all officers borne on the RCNR active list were entered on either the General List or Special List.

The two lists replace the former system of classifying officers according to branch, and a consequence is the abolition of all branch prefixes and suffixes except for those in the Special List designating medical personnel. A code system will indicate the qualifications of all officers.

The General List will include most officers of the active Reserve, while the Special List will include chaplains (CH), medical officers (SG), medical administrators (MAD), medical technicians (MT) and nursing sisters (N/S), who will retain rank prefixes and suffixes as appropriate, and certain other specialists. Since chaplains are without rank in the Navy, the "CH" is simply an official abbreviation for use in messages, etc. The rank of medical officers will continue to be prefaced by "Surgeon".

Promotion regulations for RCNR officers have been promulgated in General Orders 12.50/1 and 12.50/2. Revised wren officer promotion regulations are contained in General Order 2.03/7.

The changes will be reflected in the next issue of The Canadian Navy List.

program of installation of Second World War weapons and equipment, auxiliary craft and boats gave each division considerable potential as a working establishment, as well as a fairly substantial maintenance workload. An officer and a small staff of men from the RCN was provided for each naval division to maintain the equipment, instruct the reserve force and maintain the service for the regular force.

Following the end of the Second World War, and up to the end of the United Nations action in Korea, planning for the composition and training of the naval reserve was based on Second World War concepts. In 1950, naval divisions were allocated specialties in which to train, and equipment and instructors were provided to enable the reservists to meet these commitments.

The change in the political and economic climate which followed the Korean war brought with it a tightening economy which required heavy cutbacks in personnel and money for the reserve.

At about this same time, it became increasingly apparent that the degree of specialized training envisaged would require more time and also more instructors than could be made available. Concurrently, the concepts of future war were changing and new, expensive and more sophisticated equipment was being required for the regular force, outdating the equipment held by the naval divisions.

In the light of this, and later developments, it became apparent the naval reserve could not be provided with training facilities comparable to those of the regular force. It now was necessary to evaluate the reserve training structure in relation to the commitments it had to meet in support of the regular force.

The subsequent studies made it increasingly evident that a more realistic relationship was required between the regular force and its new requirements, and the naval reserve and its capability to meet these requirements.

The role and tasks of the RCNR were defined as:

(a) Provision of personnel readily available to activate or augment facilities in support of the RCN as required by defence planning, including:

(i) a Naval Officer-in-Charge organization, including harbour defences and logistic support bases;

The RCNR has on its strength many men with civilian skills useful to the Navy. A reserve petty officer checks electrical equipment while training at the RCN's Atlantic Command. (HS-69451)

(ii) Maritime Headquarters;

(iii) a naval control of shipping organization; and

(iv) communications centres.

(b) Maintenance of an organization capable of providing reserve personnel for increased support of the regular force ashore and afloat in time of emergency.

(c) Provision of personnel, not engaged in these previous tasks, for assistance in survival operations.

(d) Provision, in peace time, of naval facilities, naval representation and contact with the civilian population.

The prime consideration was to meet these requirements within the limited time and facilities available in the reserve training program which provided for once-a-week training in naval divisions and an annual two-week training period in regular force ships or establishments.

In the reserve officer structure, it was decided to parallel that of the regular force, but with modifications. With the exception of doctors, chaplains, female officers and certain others in special fields, reserve training would follow a modified pattern of that given the regular force General List officers.

As it was considered neither feasible nor desirable to train officers in specialized fields to parallel the subspecialities of the RCN general list or the intensive knowledge of the Restricted Duty section, provision was made to recognize the reserve officer's civilian specialization. For example, a reserve officer who is an electrical engineer in civilian life and has reached the rank of lieutenant-commander in the general list, might have this specialization used in the naval reserve if a requirement exists.

The medical, chaplain and certain other professoinal personnel enter the Special List of the RCNR where their civilian specialization is immediately recognized and used without the overall General List requirements having to be met.

Wren officers generally are required to specialize in communications, operations, administration and supply. Wrens have the same areas open to them for training and meet the same service commitments as the reserve men trained in their particular trades, except that wrens' service is confined to shore duty.

For naval reserve men, the considerations dictating the need for the new structure automatically limited the total adoption of RCN trade designations. Again, because of lack of time available for training, it was not possible for the RCNR man to acquire the same standard of naval knowledge as his regular force counterpart and still have an acceptable promotion program.

In certain trades it was feasible to scale down the regular force standards and still produce, in the time available, an acceptable and usable naval man. In trades where this scaling down was neither possible nor desirable, new trade designators were introduced.

It was not considered feasible to give any form of technical training to naval reserve men and, consequently, men in the technical fields are being drawn from among those who already possess usable skills in civilian life. However, as civilian technical trades do not necessarily completely match those of the regular force, naval reserve trade designators were introduced which more nearly reflect the actual civilian skills which the men possess.

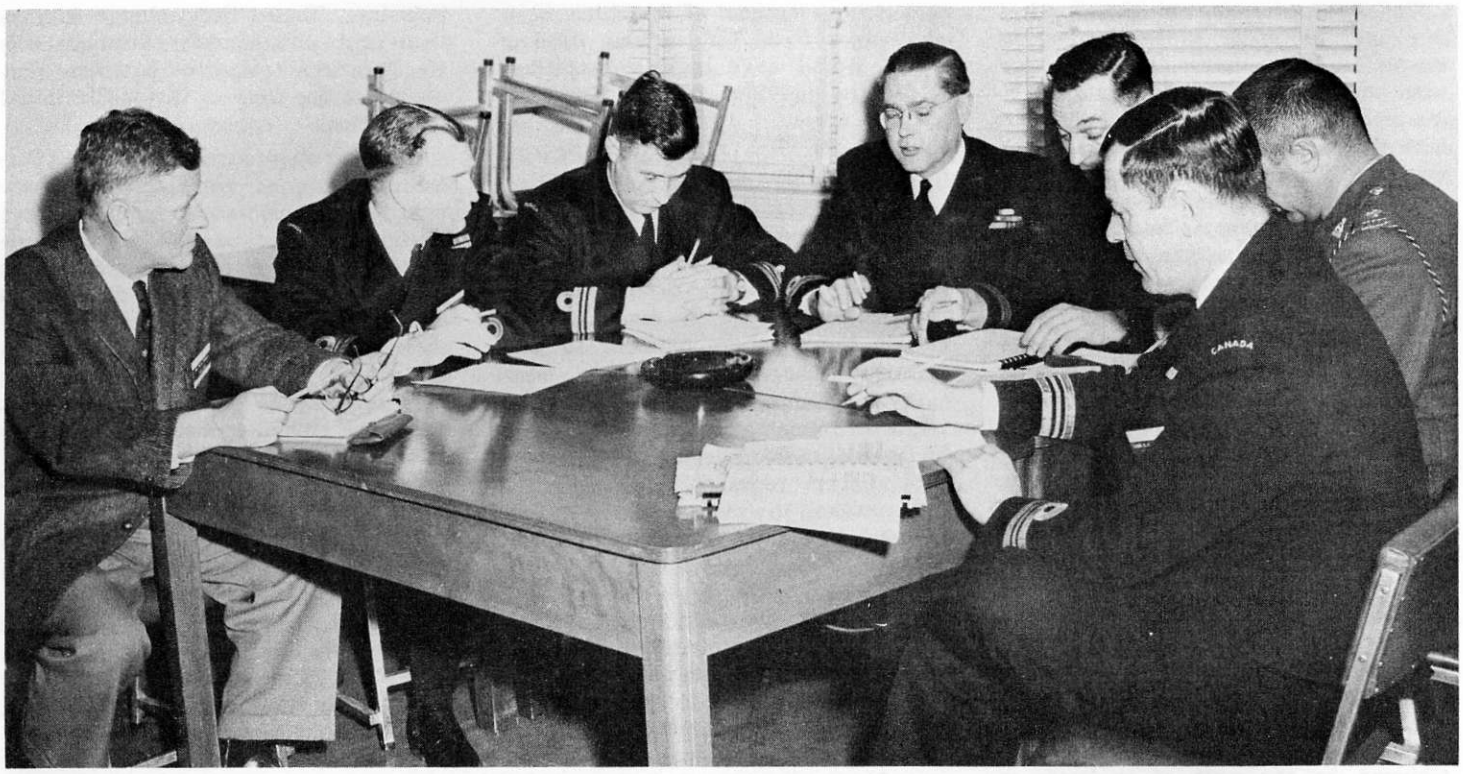
This adoption of a separate reserve trade designation has cut the reserve to 21 trades, or about 40 per cent of the trades established for the regular force.

The structure and form of the naval reserve has undergone many changes in its long life, but as in the past it will continue to be a strong force supporting the RCN.

The RCNR Trades

SM	— Seaman
CO	— Communicator Operator
CR	— Communicator Radio
CV	— Communicator Visual
NS	— Naval Storesman
VS	— Victualling Storesman
AW	— Administrative Writer
PW	— Pay Writer
WR	— Ship's Writer
ST	— Ship's Storesman
MA	— Medical Assistant
LA	— Laboratory Assistant
HA	— Hygienic Assistant
RR	— Radiographer
BD	— Bandsman
ET	— Technician, Electrical
ET (L)	— Technician Electronic
HT (W)	— Technician, Hull, Woodworking
HT (M)	— Technician, Hull, Metalworking
TM	— Technician, Mechanical
MC	— Mechanic
SS	— Wren Secretary
SA	— Wren Accounts
CO	— Wren Communicator
PL	— Wren Plotter
ME	— Wren Medical Aide

Three young naval reservists, wearing steel helmets and anti-flash gear, load a four-inch gun on board an RCN frigate during summer training on the Great Lakes. (COND-7306).



The RCN provides management courses which are also attended by members of the civil service and officers of the Army and Air Force. Above, a syndicate of the management course held at HMCS Hochelaga, the RCN's naval supply school near Montreal, discusses a case in personnel management. (ML-11779)

Management Engineering

By

Lt.-Cdr. V. C. Johnston, RCN

"Our minds are finite, and yet even in these circumstances of finitude we are surrounded by possibilities that are infinite, and the purpose of human life is to grasp as much as we can of the infinitude."

THOSE WORDS, written many years ago by Albert North Whitehead, sum up the basic philosophy that lies behind the analysis of management in the Royal Canadian Navy.

In January 1957 the Royal Canadian Navy began a program to help management find and install better and more economical ways of carrying out its mission. This new endeavour is called "Management Engineering" and to date is paying off in significant management improvements.

Management Engineering as employed in the RCN is essentially a means of analyzing work or work methods to find the best ways of doing work and thus promoting more effective use of manpower as well as material. In ships, the main purpose is to increase operational effectiveness. If more efficient methods of maintenance, upkeep and cleaning can be found, more time becomes available for training and the exercise of professional skills.

In shore establishments, the object of Management Engineering studies has been to lessen administrative and routine burdens, thus diverting more productive time to training and the other essential needs of the establishment. A further benefit is higher morale.

To carry out this work in the geographic expanse of the RCN, it was found that units had to be placed in the main areas of naval concentration. Consequently Management Engineering teams were established in Victoria, Hamilton, Ottawa and Halifax. In-house staffs have also been set up in each of the supply and ammunition depots.

The teams are composed of naval personnel and civil servants, all of whom have been trained in one or more facets of the work. Naval officers and chief petty officers receive an intensive six-week training period at the Royal Navy Study School, Portsmouth. This is followed by six to eight weeks of practical follow-up training in the team they are joining.

The team at Naval Headquarters in Ottawa plays a dual role in that it not only is responsible for setting the policy on how the techniques are to be used but is also required to conduct navy-wide studies and provide local service to the naval activities of the Ottawa and Montreal areas.

All projects originate as requests from a command, at any level. The requests must indicate a specific problem that the command wishes to have studied and specific tasks the teams are expected to accomplish.

Once a request for assistance has been approved, a team from one of the Management Engineering units is assigned to the command on temporary duty. This team is thus working directly and specifically for the person who has the immediate responsibility. This feature is important, for it clearly establishes the relationship as being part of the activity and not as an outside investigating team.

Under this arrangement, the report of the study is made to the person in charge of the activity. It is discussed with him and any amendments made to the recommendations must be consistent with the principles of good naval management. Management Engineering cannot operate without willing co-operation at all levels and every effort is put forth to ensure that the persons involved understand the reason for the study and do their part in making it successful.

Management Engineering teams are not executive. They are advisory only, and any changes recommended can only be made by management itself, with help, if necessary, from resources recommended by the team. Many of the recommendations have been adopted; but not all. The teams have had to contend with man's age-old inclination to resist change. Sometimes recommendations have to be cleared through a number of different command levels, and this has slowed implementation.

STUDIES conducted to date have been numerous and varied. A study focussed on the refit of a destroyer proved that considerable benefits would accrue to both the ship and the dockyard by making certain changes in the organization and administration of the ship's company when the ship was undergoing a refiit in the dockyard. The system recommended, and since adopted for all refits in this dockyard, is to restrict the number of sailors remaining on board during the refit. Also, by better planning and co-ordination between the ship's company and the dockyard staff, the length of time required to complete the refit was considerably reduced. Productivity of the dockyard labour force was increased by 24.4 per cent.

The total average population of ship's company and dockyard force in the ship throughout the refit on the trial installation was 155, as opposed to 276 previously employed. This, in terms of financial savings alone, amounts to approximately $56,000 a refit. A further advantage arising from this study was that many members of the ship's company were freed for training, little of which would have been accomplished under the previous system. The total savings achieved from this study are $134,000 for each refit while the cost of the study was $20,000.

Another example was a study of the regulating and manual function in a shore establishment. It was aimed at combining functions, to determine if any improvements could be made and ascertain the numbers required to perform the tasks assigned.

By combining offices, reducing forms required, reducing the use of motor vehicles and, most important, determining the numbers required to perform the new routines, the savings achieved were $160,000 annually. The study cost was $16,000.

SINCE 1960, the navy has been carrying out a large-scale program to set engineered work standards throughout the industrial shore establishments. The organization was designed to cover two major phases considered necessary for the program to be successful. Phase I involves the initial introduction to operating areas. Phase II covers the maintenance of the system once installed. This philosophy was intended to provide centralized policy direction with de-centralized operation and control.

Under this arrangement the Headquarters group is responsible for policy and for directing the initial studies during Phase I, and for policy and quality control during Phase II. The in-house or field groups form part of the operating staff of the depot. They are responsible for the initial installation, under Headquarters direction, during Phase I and will maintain the system during Phase II.

In the planning of this extensive program, it was decided that the most successful approach would be to use civilian technical personnel throughout, with management guidance from naval personnel. Bearing in mind the requirements of such a program, two experienced technical officers were hired from industry. These two, along with a lieutenant - commander, formed the Headquarters task group, which proceeded to the field to direct the initial installations.

In-house groups, selected after careful screening of volunteers from the field operations, were given a basic methods and standards course, conducted by the Royal Canadian Ordnance Corps School, and then further trained in methods time measurement, the predetermined technique adopted for use in the Navy. Armed with this training, they returned to their depots to work under the guidance of the Headquarters group and eventually become the key people in ensuring the standards remained valid and current.

Although only three years have elapsed since the first pilot study to set engineered standards was commenced, the program has progressed to the point where teams are established and working in the three supply depots and four ammunition depots. Later this year, studies will commence in the ship-repair activity and armament depots.

Results of the work measurement program show that both additions and deletions have been required if the units are to carry out their mission effectively. However, the overall picture shows a 15 per cent reduction of the operating force required. In some instances this has been much higher.

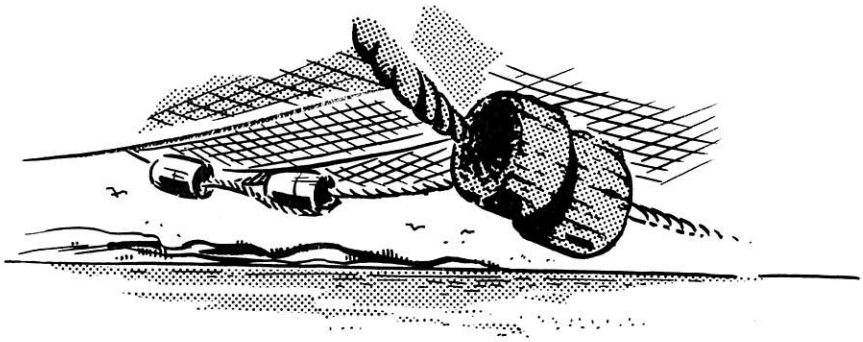
The introduction of a work measurement system based on engineered standards has provided a number of positive advantages in assessing the productivity of manpower. Some are:

(*a*) An effective and reliable manpower control system has been introduced which is sensitive to changes in the volume of work. Management at all levels can use this manpower tool;

(*b*) While the initial reaction seems to be lowered morale, particularly on the part of those who fear displacement, the longer term reaction has been one of higher morale when all concerned realize they are working in a highly productive operation;

(*c*) The manager of a unit is able at any time to assess the complement required for his unit and is in the best possible position to justify his requirements.

ANOTHER AREA of the Navy which has been receiving detailed study and analysis is the processing of the masses of paperwork involved on the administrative side. As with the work



measurement program, it was felt prudent to obtain civilians who were well qualified in the systems and procedures field to give guidance and direction in such studies.

While not as spectacular in dollar savings or as great a potential manpower saver as the other projects, data processing studies are being conducted on a Navy-wide basis. The aim is to decrease the paper war while providing faster information in order that management can make better decisions. Many times it has been found that in conducting a methods study in the field, major improvements with ultimate savings appear probable if the overall system were changed. If this is justified, a Systems and Procedures team will be assigned to study the system as a whole. This has led to adoption of automated equipment in certain instances.

Recently the cost accounting and labour analysis in the Halifax Dockyard was placed on punch cards. This resulted in an annual saving of $54,000, including reduction in staff of 12 clerical positions. The cost of the study was $12,000.

At present a study of all paperwork operations is underway to determine what, if any, can be converted to automatic data processing. This could lead to a recommendation that the Navy acquire one or more computers. But, until the entire paperwork function has been completely studied, acquisition of such expensive equipment for particular functions might prove inadequate for other applications, resulting in unwarranted expense.

ONE OF THE MOST recent applications of Management Engineering has been in the design of ships. Probably this will prove to be one of the most fruitful areas yet tackled.

Each generation of a type of ship gets bigger. A present day destroyer escort is larger than a Second World War destroyer, partly because of bigger and better weapons and weapons systems and partly because of growing complements to operate and maintain a more complex ship.

The aim of the program is "to design ships which need the minimum complement without reducing the ship's fighting effectiveness". To achieve this aim, everything that goes into the ship must be examined to ensure that it is the simplest system or equipment to do its intended job and that it requires a minimum of maintenance manhours and operator manhours. Automation will meet some of the requirements, but only if the added complexity does not necessitate increased maintenance.

To enable a warship to perform its mission a large number of interdependent systems are installed; in the case of a destroyer escort these number 800. When new construction is planned and reaches the design stage, the natural approach of the designer is to refer to past experience and design when considering these systems in the new ships. This is the point where Management Engineering, and more specifically Method Study, can be made truly effective. Each requirement for a system must be submitted to critical examination

If the product of the system is indeed required, then the system itself must be submitted to the same critical analysis to ensure that it represents the ultimate in hardware simplicity and manhour requirement to achieve its purpose.

In the spring of 1962, steps were taken to provide a Management Engineering capability within the Director General Ships' department. In the summer of 1962, a well qualified Management Engineering officer from the Atlantic Team was appointed to Naval Headquarters to undertake the co-ordination of the proposed program.

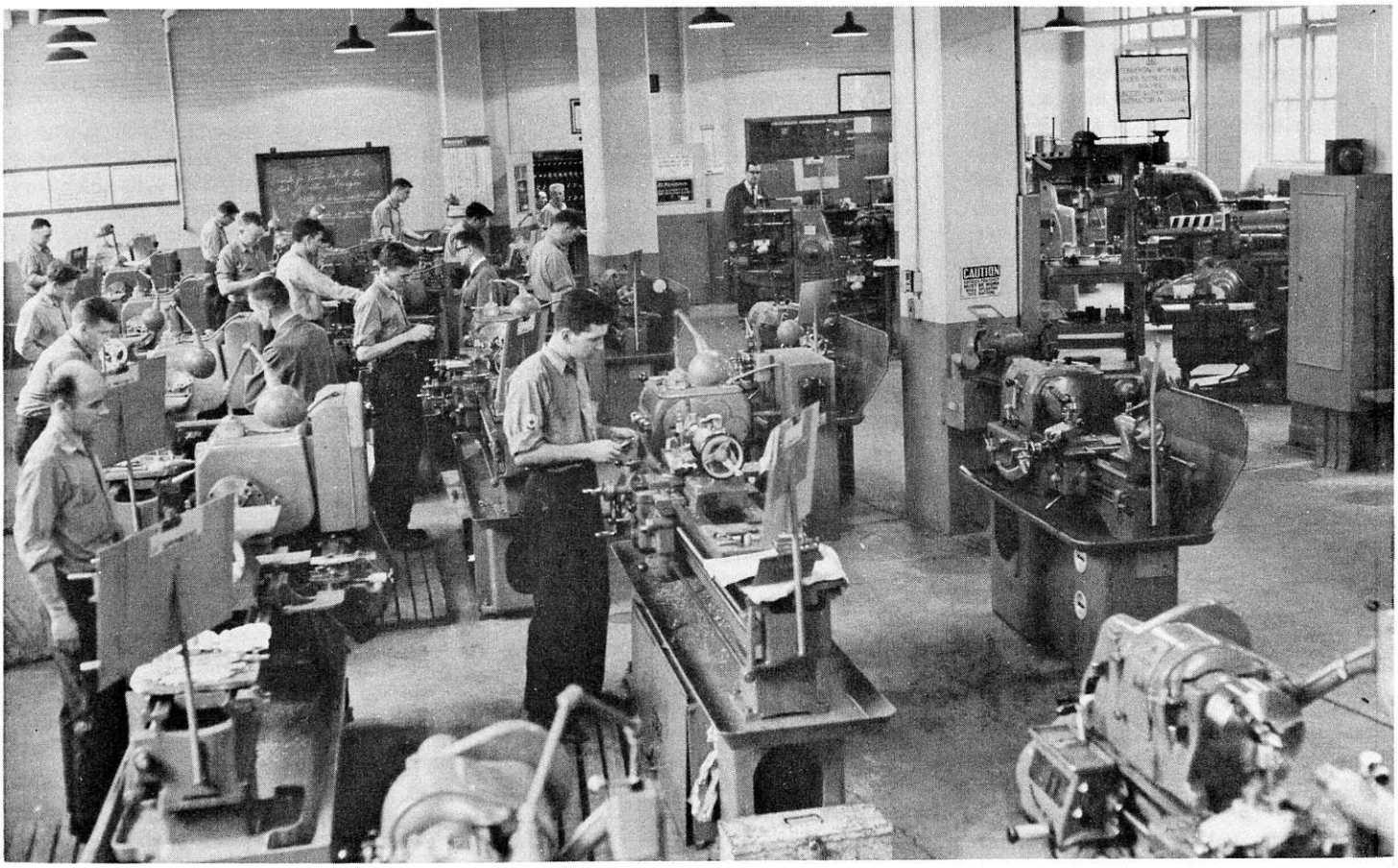
An example of the results achieved to date is a study of the telecommunication system of the new frigate at present being designed. The system which was to be installed showed 252 stations would be required. After a study was conducted, the new proposed system has only 123 stations, yet it provides broader communication coverage and has greater versatility of use. This saving of more than 50 per cent in the number of stations was achieved by integrating nine separate telephone systems, two inter-communication systems and two broadcast systems. The study took the Management Engineering Officer approximately two and a half months to complete, with assistance as required from the experts in the trades and backgrounds involved in the study.

Studies are under way in other aspects of this ship; but equally important is the program to train all design engineers, supervisory draughtsmen and other naval and civilian personnel who are involved in stating requirements for, or actually designing, new-construction ships or conversions. Again this training is being conducted for the Navy by the RCOC School.

The ever-present problem confronting the Navy is an increasing demand for more sailors to operate and maintain a modern warship. Management Engineering, the newest tool adopted by the design engineers, will help to solve this problem.

WHERE DOES the Navy's Management Engineering program go from here? The chances are it will grow. There has been an increased appreciation at all levels of management of the worth of this tool. Movements are underway to have Management Engineering applied to many other facets of the navy.

But this will not come overnight. In some areas the ground is just being broken and the seeds planted for the real harvest which will come later; in others the harvest is ripening. Wherever applied, it is proving to be a useful tool to those who learn how to use the tool because in the final analysis, the success of this program will rest with the support given it by all levels of command.



Men under training in one of the two machine shops in the Fleet School's engineering division at Esquimalt. (E-71245)

THE FLEET SCHOOLS

ANY LAYMAN who dares venture on board a modern fighting ship is at once confronted by a baffling array of mechanical ingenuities and electronic gadgets. It's all enough to make your non-practically minded gent—the average Joe who drives a car without knowing what's under the bonnet—throw up his arms and take to the hills with bow and arrow. On seeing these omni-directional, triple-barrelled, electronically controlled ways of coming out on top in a fight, you might well yearn for the days when international disputes were settled by good swift clonks on the head, administered by spiked clubs.

Today's warships are streamlined, floating boxes containing umpteen tons of electronic equipment. To man them the Navy needs an amazing number of technically competent and technically trained men. In 1957, in order to economize on the number of men aboard ship and also in the interest of individual efficiency, it was decided that users should become maintainers as well. It is no longer enough for a man to be able to use a weapon. He has to be able to maintain it, and carry out minor repairs at least. The majority of men in the RCN today must be technically trained. To see that they are, the RCN runs the biggest technical vocation training program of any institution in the country.

By
Ronald Brunskill

In recruiting men these days the Navy is highly selective. It must know as far as possible that a man has the willingness and aptitude to absorb years of technical training which will be lavished on him at the taxpayers' expense.

As he progresses from course to course, as he runs the gamut of his "on the job training", he is continually checked and tested. The Navy cannot afford to harbour deadwood, if it is to remain efficient. A young naval man today has to be intellectually alive; there is no backwater where he can comfortably stagnate, freed of the responsibilities of civilian life.

Navy training proceeds according to three principles: (a) indoctrination (b) formal technical training, and (c) experience on the job.

The indoctrination is performed by "new entry training". Once your young sailor is enrolled, he goes to HMCS *Cornwallis,* near Digby, Nova Scotia, for about 16 weeks of basic training. This gives him a grounding in naval knowledge and terminology, discipline and seamanship. At *Cornwallis* he is also interviewed and given a battery of tests to determine his desires and capabilities. On the basis of this he is assigned at the end of his 15 weeks to one of the many trades in the RCN.

It is at this stage of his career that Fleet schools—and the vital role they play in the modern Canadian navy—will make their presence felt on our new recruit. Fleet schools are places

where men get their trade training, their professional tutoring, their job instruction, acquire their specific skills and know-how. There are four of them across the country—HMCS *Naden* at Esquimalt, B.C.; HMCS *Hochelaga* at Montreal; HMCS *Shearwater* and HMCS *Stadacona*, Halifax area. The last is the biggest. *Hochelaga,* despite its importance, can be dismissed here—this is where the non-technical people are trained, cooks, stewards, and others on the supply side. *Stadacona* and *Naden* run analogous courses—with *Stadacona* the more important only because it is much the bigger.

WHEN a sailor graduates from *Cornwallis,* he will probably not immediately go to a fleet school. Most likely he will be drafted to a ship and there remain for a year or more. But some men assigned to certain trades—sonar (submarine detection), signals, radio—will have to acquire certain techniques before they can be useful on a ship. After acquiring these elementary techniques they too join the majority of their entrance group on board ship. Then follows a substantial period of "on the job training". This means trade training at sea, with practice, observation and experience combined with a little formal instruction.

After about a year afloat, our young sailor takes his exams for Trade Group I. He must get this proficiency rating before he can proceed further (before he can go to Fleet School).

Presuming he has passed Trade Group I exams with flying colours, our recruit is then eligible for a session at Fleet School, but he will probably have to stay afloat for four or five months before he finally goes.

It is the Fleet School at HMCS *Stadacona,* which is primarily responsible for the professional training for the deck, weapons, operations and engineering departments of HMC ships. At any one time there will be about 1,000 men there undergoing formal trades training. There will also be between 60 and 70 officers undergoing formal training, in their own groups.

The Fleet School at *Stadacona* has a fivefold task—(a) to train surface officers (surface as distinct from naval air officers); (b) to train sub-specialist officers; (c) to train limited-duty officers, i.e., men from the lower deck who have gained commissions; (d) men in trade groups, that is, lower-deck men proceeding through the various trade groups, and (e) to provide training facilities for ships' teams and weapons teams, attack teams, operation teams etc. In a setting similar to that aboard ship—except for the heave and roll of the ship—they go through various exercises, which enable them to function better as a team.

But about 80 per cent of the training that goes on at Fleet School, *Stadacona,* is for category (d)—men in trade groups. So let us pursue our young sailor along to his career.

First of all he enters the Academic Division. Here is provided academic training for officers and men prior to their proceeding to the communications, engineering, operations and weapons divisions. Instead of having the men taught the principles of maths, physics, electrical and electronic theory, in their own trade division, it has been found more efficient for them to go into the Academic Division together for this general, theoretical training.

Academic Division instructors include trained teachers who hold educational qualifications in the various provinces. After the men complete the academic course, they branch off into their own particular division, that is to whatever trade they have been assigned.

The Fleet School, *Stadacona,* comprises five divisions, in addition to the Academic Division. Two of these divisions are physically located outside *Stadacona.*

First there is the Communications Division, located at HMCS *Cornwallis.* Here is provided training in the operation of ships' communications systems to officers and men of the radioman and signalman trades.

A seaman, under instruction in the welding shop of the Fleet School, Naden, practises a modern art. (E-66970)

General view of the parade ground at HMCS Stadacona during divisions. Stadacona is the home of the RCN's largest fleet school. (HS-49875)

The Engineering Division is at *Stadacona,* and gives training in the operation and maintenance of marine engineeering and power systems, and naval construction. Officers and men of the following trades receive instruction in this division: engineering technician, engineering mechanic, electrical technician, electrician's mate, hull technician and hull mechanic.

The Weapons Division located at *Stadacona* with a gunnery range at Osborne Head, Halifax County, trains in the operation and maintenance of ship's weapons systems officers and men of the following trades: sonarmen, weapons underwater, fire-controlmen, weapons surface, and electronic technician.

Operations Division at *Stadacona* provides training in navigation, parade ceremonial, regulating duties and the use and maintenance of operations systems as required, to officers and men of the radar plotter and boatswain trades.

Finally there is the Nuclear, Biological, Chemical and Damage Control Division, which provides training in these various types of warfare and ship's damage control to officers and men of all trades.

MEN SELECTED for the Fleet Air Service also attend the Academic Division's courses at *Stadacona.* But then they proceed across Halifax harbor to the Fleet School (Air), RCN Air Station, *Shearwater.*

The Fleet School (Air) was established in September 1960. The school administers all training courses for ground crews, air crews and meteorological personnel. The organization of the Fleet School (Air) closely follows that of other RCN schools.

Heading the training department is a training officer, and a combined administrative and instructional staff of 115. There are three divisions to the school —ground crew, air crew and meteorological. The Ground Crew Division is the largest of the three, conducts all air trades training, which includes air fitters and riggers, aircraft techicians, weaponmen air, air electrical and electronic technicians and naval airmen Phases of training include basic mechanical theory, aircraft engines, air frames and fuel systems, practical workshop training and practice on actual aircraft maintained by this division as training devices. Other aspects of the training given include search and rescue survival, bush training, and aircraft fire-fighting techniques.

In all an average of 700 personnel are trained annually by this division. With the introduction of more helicopters into the fleet—to eventually operate from platforms on destroyer escorts—air trades training will increase as years go by.

The ground training portion for all air crews (pilots and naval crewmen) is provided by the Aircrew Division, with practical flying provided by the two fixed and rotary wing utility squadrons

based at the *Shearwater* naval air station. Advanced flying training integrates pilots who have been trained by the RCAF in RCN methods and practices.

Phases of training include instruction in air navigation, electronic detection equipment and anti-submarine warfare procedures. A flight simulator and tactical trainer plays a very important part in the aircrew training program.

The third and smallest division, the Meteorological, provides formal training for meteorological mates and observers in all aspects of weather reporting, including ice observing and reporting techniques. Combined, the Aircrew and Meteorological divisions train about 200 men annually.

AFTER THIS digression in the air, let us return to ground level. The trades courses at *Stadacona* and all the Fleet Schools are completely job oriented. Instruction is directed to the use and maintenance of actual, operational equipment. Men picked for instructors, by the way, are of classification Trades Group III and upwards.

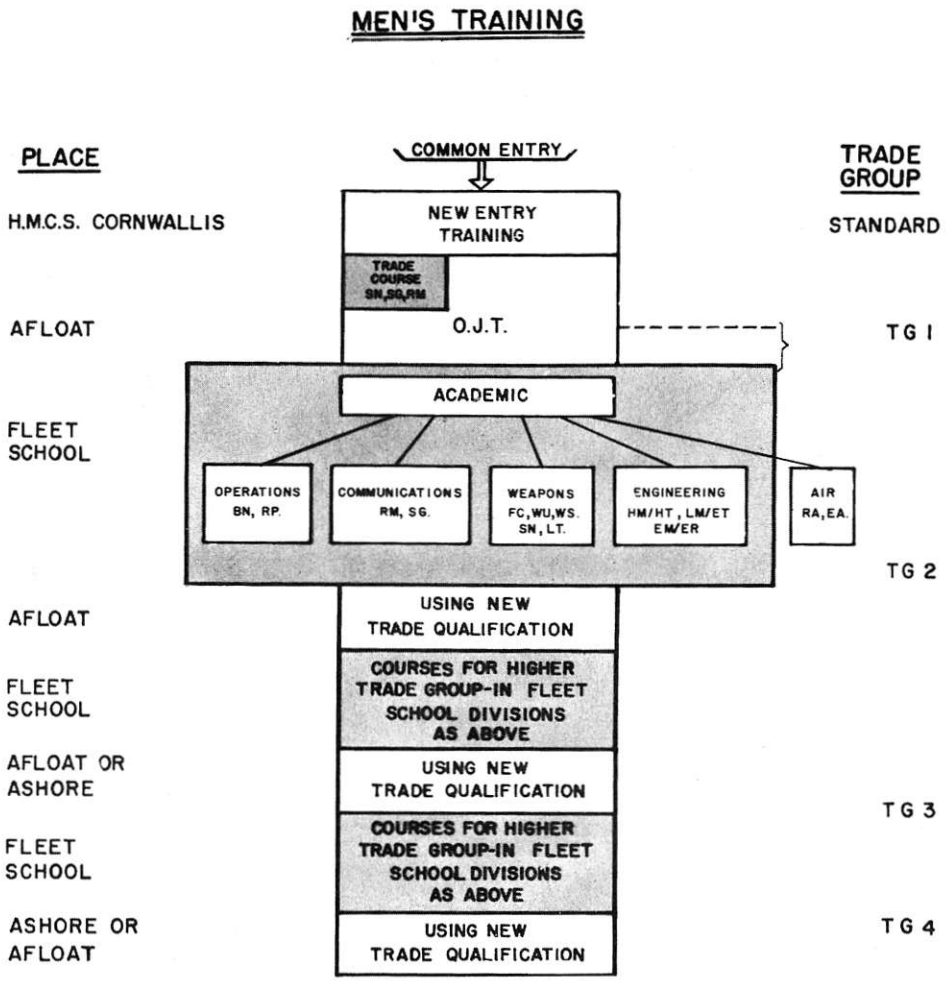
Time taken by a man at the Fleet School, varies with his trade. Some take three months, others six, some almost a year. At the end of this phase, the seaman sits for his Trade Group II examinations. These successfully passed, it's off to sea again.

After a further period of time "on the job", during which our seaman has consolidated the skills and techniques acquired at Fleet School, he will be considered for further trade training. In due course, all being well, he will return to the Fleet School and study for his Trade Group III classification. This acquired, he is off to sea again, but eventually with the hope of returning to the Fleet School, to take the highest trade category of all—Trade Group IV.

The various trade groups—I, II, III and IV—may be regarded as corresponding to a tradesman in civilian life being I, of limited skill; II—semi-skilled; III — skilled, and IV — highly skilled, capable of performing the most complicated tasks with the highest degree of accuracy, dexterity and co-ordination.

Above all, the Navy wants people to progress. Pay and promotion are closely related to progress through the trades groups. But it is not merely keen on men advancing to the limit of their capacities in their trades, but also in their non-specialist, general education as well. If a man is willing to expend the time and the effort, he can attend courses leading to his junior matriculation. At *Stadacona* there are abundant general and reference library facilities.

The Royal Canadian Navy prides itself on being the world's most effective and advanced anti-submarine force. To retain that position requires that every individual officer and man reach the highest pinnacle of efficiency possible. There is no room for the sluggard—*Canadian Shipping and Marine Engineering News.*



This chart shows how training progresses in stages from new entry status to the highest trade group.

A squadron of Bay class minesweepers leaving Esquimalt harbour. (E-60989)

Old Menace — New Tricks

WHILE mine warfare in the space age may appear something of an anachronism, this, in fact, is not the case. Nuclear parity and the threat of mass annihilation posed by a push-button war have increased rather than diminished the possibility of limited and conventional warfare.

What is so special about the mine that it has survived as a major weapon in the naval arsenal for nearly four hundred years? The simplicity and clandestine nature of the mine have made it a weapon which can give nations with minor naval forces at least momentary parity with countries possessing greater naval strength. For example, 3,000 simple mines, some more than 40 years old when they were laid, delayed the United Nations landings at Wonsan in Korea for six days. These mines were laid by North Koreans from junks and sampans.

Why is mine warfare a threat? Mines are cheap, nasty, invisible and highly effective weapons. They are tenacious and, unlike a bomb shell, their usefulness is not expended the moment they are delivered. Mines laid in the Second World War still persist and large areas of navigable water in Europe and Asia remain dangerous to maritime traffic to this day.

The object of mine warfare is to deny the enemy access to the mined area and to sink his ships should they trespass its boundaries. Whether these boundaries be defensive or offensive, the objective remains the same. The Communist alliance has a vast stockpile of mines, the technology and resources to produce new mines, and most important, vehicles with the capability to lay mines in Canadian waters.

It is not necessary for a mine to sink or damage a ship to create a threat, disrupt shipping and cause expenditure of manpower and material. The announcement of a mined area, even though no mines have been laid, creates a strategic and tactical threat which cannot be ignored until such time as it is proven non-existent. A

paper minefield can, in fact, be almost as effective and disruptive as the real thing.

Many maritime nations, because of the very nature of the mine and the fact that it is difficult to simulate realism in peacetime exercises, underrate its potential. "What the eye cannot see, the heart cannot grieve" is an apt phrase to describe the peacetime attitude towards the mine warfare.

Canada is fortunate in having assimilated the lessons of the Second World War and Korea. Despite the demands for larger and more sophisticated units of the fleet, the RCN has maintained two squadrons of coastal minesweepers in service. One squadron of six ships is based at Halifax and a four-ship squadron at Esquimalt.

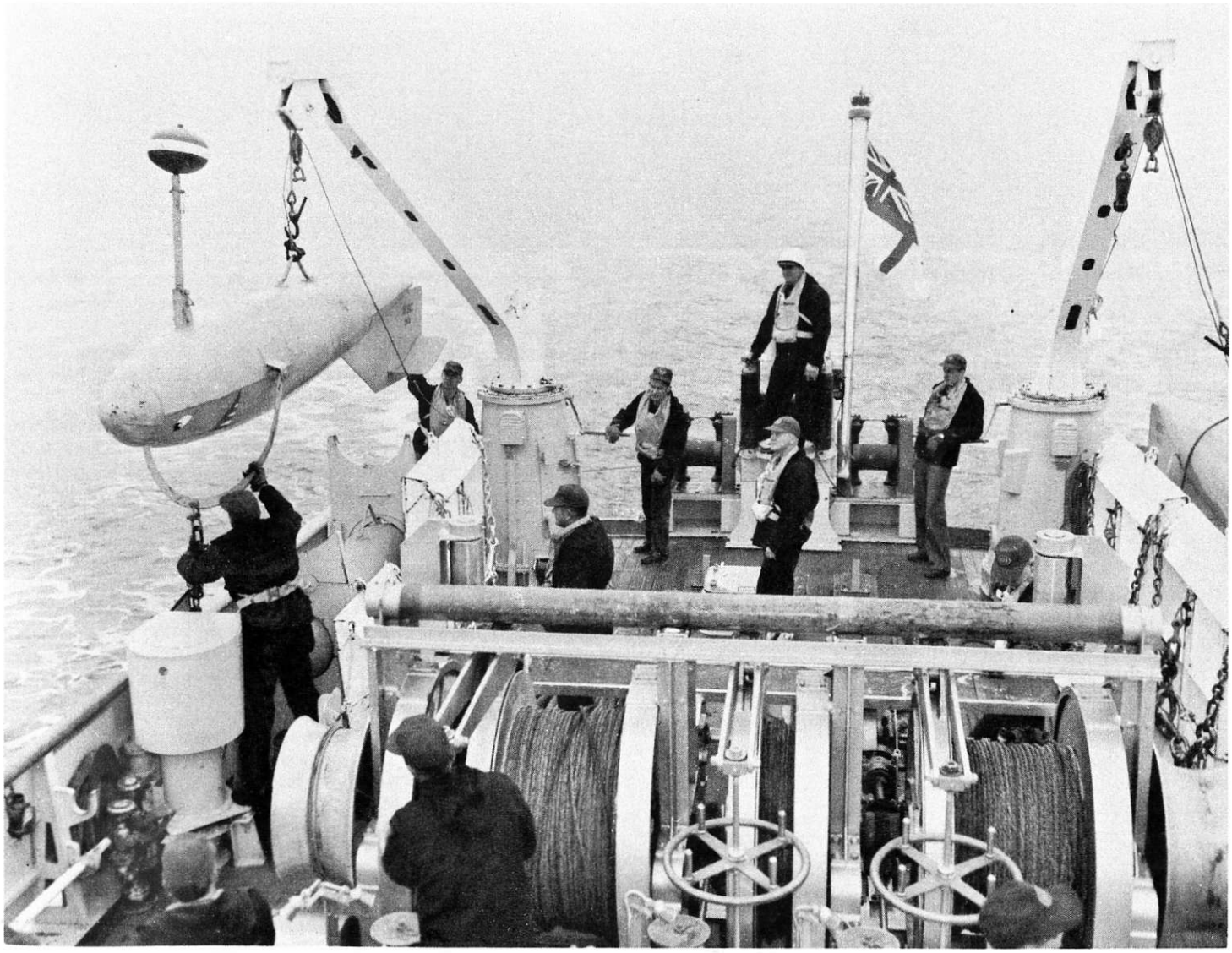
These ships, manned by hard-working and dedicated personnel, go about their unglamourous tasks with a minimum of fuss and publicity. Their standard of training and efficiency, in comparison with other NATO minesweepers, is second to none.

The year 1962 was a typical training year for the Minesweeping Squadrons. The First Canadian Minesweeping Squadron based at Halifax, commenced the year with an exercise in the Bermuda area. On return to Halifax, half the squadron went in for their annual docking while the other half carried out local exercises. Then the entire squadron sailed to the Great Lakes for a six-week training cruise. On return to home port, the minesweepers exercised locally in preparation for the annual RCN/USN minesweeping exercise "Sweepclear 7".

"Sweepclear 7" held in Canadian waters in 1962, was conducted by Rear-Admiral K. L. Dyer, the NATO Commander of the Canadian Atlantic Sub-Area and Flag Officer Atlantic Coast. A total of 20 Canadian and United States ships, a patrol squadron of P2V Neptune aircraft and a mine countermeasures diving team from each country participated. During the 13-day exercise, air dropped and surface-laid minefields were sown, swept and the mines recoved by the combined task force. The exercise was a fine example of RCN and USN co-operation and, despite adverse weather conditions, was considered a great success.

The East Coast Squadron concluded the training year with further local exercises and a training cruise of the southern Maritimes.

The training schedule of the Pacific Coast Squadron, in 1962, was equally demanding. Coming out of annual refit in January, the squadron started an intense period of work-ups followed by a local minesweeping exercise.



Preparing to stream minesweeping gear on board one of the RCN's modern Bay class minesweepers. (E-65917)

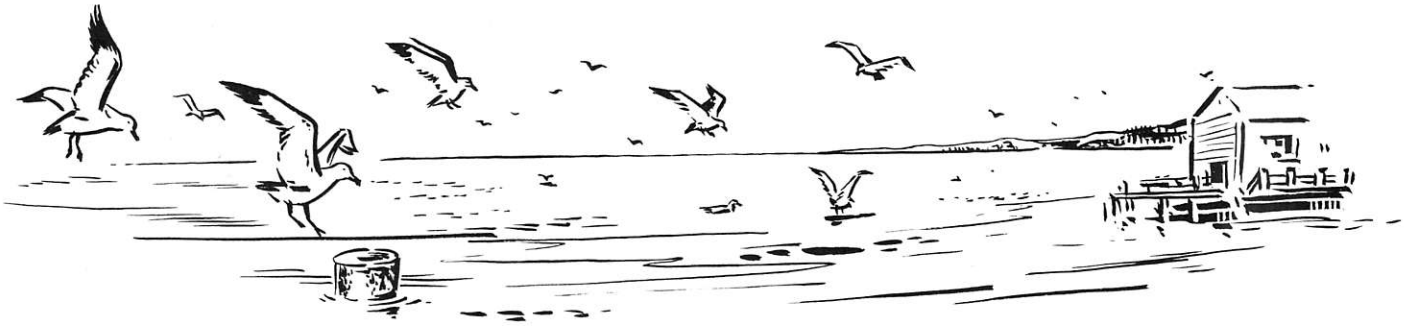
HMCS Miramichi, is one of the RCN's postwar Bay class minesweepers. These wooden sweepers are equipped to deal with a variety of mines. (E-43508)

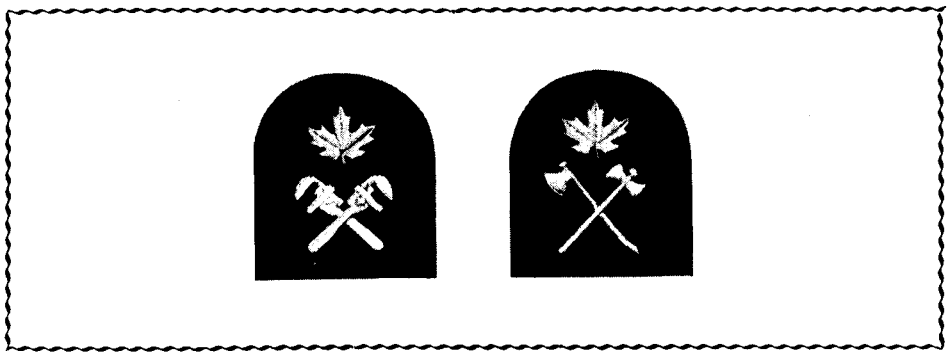
March and April saw the squadron engaged in two further exercises and preparations for participation in a U.S. amphibious and mine warfare exercise in May. Exercising with the USN has always been a challenge and this occasion proved no exception. The squadron returned to Esquimalt secure in the knowledge that they had held up their end and helped to demonstrate that mine countermeasures are an essential prerequisite to an amphibious assault operation.

The squadron's busy schedule continued throughout the summer months. Then, in the autumn, the USN squadron which has been host to the Canadians in California, arrived for training in minesweeping in Canadian waters. A 10-day minesweeping operation in the Prince Rupert area under adverse weather and operating conditions more than convinced our U.S. neighbours that minesweeping is not all sunny skies and calm seas!

Still more exercises and a cruise of B.C. waters completed what was, without a doubt, one of the most successful training years the Squadron has experienced.

The RCN minesweeping squadrons are composed of tough, well equipped, little ships manned by equally tough and well trained officers and men. What they may lack in quantity, is made-up for in quality. So long as the Canadian shipbuilding industry produce minesweepers capable of meeting the high standards demanded in mine countermeasures operations, Canada may relay on the "wooden ships and iron men" to keep her sea-lanes open to maritime traffic.





THE MYSTERY OF THE BRANCH BADGES

CONFUSION about branch badges on the East Coast led to investigations and the unearthing of historical tidbits perhaps of interest beyond the pale of the engineering fraternity.

Hull Technicians (HT) and Hull Mechanics (HM) on the East Coast have been wearing the old shipwright badge. It was learned unofficially that the West Coast HTs wear shipwright badges, too, but that their HMs wear the old plumber badge.

Who was right? Would new badges someday be forthcoming? What significance was there in the shipwright badge, which appears to be a something-or-other and guess-what crossed? These questions were put to the experts at Naval Headquarters in Ottawa.

In the course of the correspondence docket's Headquarters wanderings, three versions identifying the shipwright devices came to light, and at the same time disclosed the confusion caused by artistic licence through the years for lack of the printed word. The only printed description was "Crossed Axe and Hammer" (Appendix to the *Navy List*, June 1953, page 128, and also the *Navy List*, January 1899, page 677).

"In this original badge," noted the Naval Historian, "the head of the axe is in the dexter position, the head of the hammer in the sinister. When this badge was devised late in the 19th Century it was used to identify all artificers or artisans other than engine room and included blacksmiths, plumbers, painters, carpenter's mates and shipwrights.

"The axe was intended to be the shipbuilder's broadaxe and the hammer probably the caulking hammer. Through the years the badge has been copied by artists with ever increasing licence, to such an extent that the axe (in the dexter) looks like an adze with the head in the wrong plane or a battle axe, while the hammer (in the sinister) has evolved into something approaching a woodsman's double-bladed axe."

Further investigation by Headquarters authorities revealed that the Royal Navy Seamanship Manuals, Vol. 1, 1915 and 1937, indicated little change in the design over that 22-year period. And, since there was very little difference between the badge now worn by the RCN and that worn by the RN, no change would be made to the existing badge and, further, that "axe and hammer" would be its worded description.

So the upshot of the original queries from the East Coast was:

(1) Badges now used will not be changed.

(2) The Hull Technician wears the old shipwright badge. This branch combines the old plumber and shipwright trades for group three and four levels only.

(3) The Hull Mechanic wears the old plumber's badge (crossed Stillsons), which applies to trade groups one and two only.

Local investigations in Halifax produced a further snag, suspiciously akin to the root of the whole trouble. Stores didn't have the proper badges on hand for HMs and somehow shipwright badges were issued in lieu!—H.C.W.

Note: In Latin, "dexter" means "right" and "sinister" "left". In heraldry, dexter and sinister referred to the right and left portions of the coat of arms as it appeared on the manly breast of the mediaeval knight. Accordingly, to interpret the above historical comments in relation to the pictures of the badges, for "dexter", read "left" and for "sinister", read "right".—Ed.

PRIZES AWARDED IN ESSAY CONTEST

Rear-Admiral R. E. S. Bidwell, RCN (Ret), vice-president, Nova Scotia Mainland Division of the Navy League of Canada, presented Naval Cadet Essay Contest prizes to three sub-lieutenants at ceremonial divisions in *Stadacona* on March 15.

Other Navy League officials present for the ceremony were Rear-Admiral P. D. Budge, RCN (Ret), new national secretary of the Navy League of Canada; H. R. Gillard, national general manager, and John Gurholt, president, Nova Scotia Mainland Division.

An essay entitled "The Convoy System", submitted by Acting Sub-Lt. Peter James Baldwin, of Kitchener, Ont., was judged best for 1962. He received as first prize a selection of books on naval matters. In third place was Acting Sub-Lt. Douglas S. Mitchell, Pembroke, Ont., and Sidney, B.C., for his essay, "The *Admiral Graf Spee*". Fifth prize was awarded to Acting Sub-Lt. Keith G. Nesbit, Victoria, for "A Naval Tragedy—The Battle of Java Sea". Both received books. The sub-lieutenants are at *Stadacona* on pre-fleet training.

The essays of winners were read by representatives of two of Canada's largest advertising agencies, who were reported to have found each to be of outstanding quality and worthy of publication.

The annual essay contest dates back some years. The Director of Naval Education and Captain A. W. Baker, chairman of the Navy League scholarship and prizes committee, concluded that great benefits would accrue to the Royal Canadian Navy and Canada if ways could be found to excite the imagination of midshipmen and naval cadets in maritime matters. From their discussions and subsequent study, the Navy League undertook to conduct, with the co-operation of the Royal Canadian Navy, an annual essay contest for RCN midshipmen and officer cadets giving prizes consisting of books on naval subjects. To date great success has attended the annual essay contest.

Since its inception at least 35 naval cadets have submitted essays each year. The judging is conducted by the RCN and subsequently by the Navy League of Canada and then the final winners are determined jointly.

ADMIRALTY HOUSE

THE ATLANTIC COMMAND Reference Library, the Command Textbook Pool, the Ships' Recreational Library, the *Stadacona* Reference Library and the *Stadacona* Reading Room have moved into Admiralty House, which has recently been renovated for its use as a library building. All rooms in the lower level are bookrooms.

Together the Atlantic Command and *Stadacona* reference libraries comprise approximately 3,600 books dealing with subjects such as history, philosophy, international affairs, political economy and biography, with the emphasis placed on information of particular concern to the Navy.

The Command textbook pool consists of educational books used in the academic courses provided by the Navy.

The ships' recreational library contains about 32,000 volumes of which the majority is fiction. It is maintained solely for the use of personnel serving in ships, and the majority of books are carried in the libraries of the individual ships.

The *Stadacona* reading room recreational library is supported largely by the personnel of HMCS *Stadacona* and possesses about 10,000 books, mainly fiction, and a wide variety of periodicals.

The facilities of the Command libraries are available to all naval personnel within the Atlantic Command, whereas those of the *Stadacona* libraries are primarily for the use of personnel serving in *Stadacona*.

ADMIRALTY HOUSE was built as the residence of the British Admiral in command of the North American Station, which was the name of the naval base at Halifax even before the time of Confederation.

Today, Admiralty House, an imposing three-storey Georgian structure of grey stone, stands within the grounds of *Stadacona*, the Royal Canadian Navy Barracks, where it faces west onto Gottingen Street. At the time it was built, although it is surrounded by the many fine modern buildings today, its site was the centre of several acres of open ground, up hill from the Naval Cemetery on Lockman Street.

In the spring of 1814 the British Parliament decided to erect a fitting residence for the Admiral of the Station, and the sum of £3,000 was granted for this purpose. Construction, lacking today's modern facilities, progressed slowly, and it became apparent that more money would be needed if the building was to be completed. The matter was brought to the attention of the House of Assembly of the Province, which provided a further £1,500 from the Nova Scotia treasury to make possible the completion of the building. Rear-Admiral Edward Griffith was in

command of the North American Station in 1814, although it is doubted he was the first resident of Admiralty House, since several years elapsed before the building was ready for occupancy.

During the 145 years or so of its existence, Admiralty House has seen many changes in its immediate surrounding and in its own *raison d'être*. Until shortly after the turn of the present century, Admiralty House was exactly what the name implied— the permanent residence of the successive Commanders-in-Chief of the Royal Navy's North American Station, some of whom were men of world-wide fame. Admiralty House was also the scene of many brilliant social affairs.

September 19, 1848, is the earliest recorded date of one of the many social events that took place at Admiralty House, when the Earl of Dundonald gave a memorable ball for six hundred guests. In 1861 another notable ball was given in honour of a visitor of royal blood. Prince Albert. On August 28, 1869, Prince Arthur brother of Prince Albert and third son of Queen Victoria, who later became Duke of Connaught and eventually Governor-General of Canada from 1911 to 1916, was entertained by Admiral Mundy, during the Prince's visit to the city. The flagship, the *Royal Alfred*, was illuminated in his honour. Four years later, it is recorded that Lord Dufferin, Governor-General, and Lady Dufferin, dined at Admiralty House as guests of Admiral and Mrs. Fanshawe, while in November, 1878, the Marquis of Lorne, another Governor-General, and the Princess Louise, were guests for several weeks, making Admiralty House their temporary home while in the city.

An interesting but unsubstantiated story often told about Admiralty House concerns the period around 1819. It was said the resident British Admiral, as a hobby, kept prize Berkshire boars in a specially constructed sty to the rear of Admiralty House. Violent objections were raised by the Admiral's neighbours and local Health authorities demanded that he dispose of his "hobby", but the good Admiral was not giving up without a fight, and made it plain that if the pigs went so would he. Apparently, no great alarm followed his threat, and so the Admiral brought pressure to bear to have his squadron headquarters moved permanently to Bermuda.

THE YEAR 1904 marked the end of the "golden" period in the history of Admiralty House. Two years later the last of the Imperial troops, garrisoned at Halifax for more than 150 years, were withdrawn, and in their wake followed the men and ships of the North American Station. The Royal Navy handed over the Dockyard to the Canadian government and Admiralty House was closed, its furnishings sold at auction to the highest bidder.

The next chapter in the life of Admiralty House was written during the First World War, when it was re-opened to serve as a naval hospital. The kitchen, with its tiled floor and high ceiling, became the surgical operating room. Such was the former residence of famous British Admirals until December, 1917 and the Halifax Explosion.

Along with so much else of Halifax, Admiralty House was badly damaged in the explosion of 1917. Only one ceiling, that in the smoking room, remained intact, and all windows were blown out. The patients of the hospital, as it was then, were removed to the Camp Hill Military Hospital, and once again Admiralty House was deserted.

The following year, the Public Works Department undertook the renovation of the building, and in May 1920 Admiralty House entered the third phase of its history as Health Clinic No. 1 of the Massachusetts-Halifax Health Commission, set up to rehabilitate the city's population following the explosion and to provide essential health services previously lacking. Health Clinic No. 1 at Admiralty House operated continuously until 1924, when its services were incorporated into other sections and the facilities were removed to another part of the city.

This time, Admiralty House was not to remain unoccupied very long, for

R N Commanders-in-Chief at Halifax

North America Station

1814 — Rear-Admiral Edward Griffith
1816 — Rear-Admiral Sir D. Milne, KCB

North America and Lakes of Canada Station

1818 — Rear-Admiral Edward Griffith
1821 — Rear-Admiral W. C. Fahie, CB

North America and Newfoundland Station

1824 — Rear-Admiral W. T. Lake, CB
1827 — Rear-Admiral Sir Charles Ogle, Bt.
1830 — Rear-Admiral Sir E. G. Colpoys, KCB
1832 — Vice-Admiral Rt. Hon. Sir. G. Cockburn, GCB
1836 — Vice-Admiral Sir. P. Halkett, Bt., KCH
1837 — Vice-Admiral Hon. Sir C. Paget, GCH
1839 — Vice-Admiral Sir Thomas Harvey, KCB
1841 — Vice-Admiral Sir Charles Adam, KCB
1844 — Vice-Admiral Sir Francis Austin, KCB

North America and West Indies Station

1848 — Vice-Admiral Rt. Hon. the Earl of Dundonald, GCB
1851 — Vice-Admiral Sir G. F. Seymour, BCH
1853 — Vice-Admiral Arthur Fanchawe, CB
1856 — Vice-Admiral Sir Houston Stewart, GCB
1860 — Vice-Admiral Sir Alexander Milne, KCB
1864 — Vice-Admiral Sir James Hope, KCB
1867 — Vice-Admiral Sir Rodney Mundy, KCB, DCL
1869 — Vice-Admiral George G. Wellesley, CB
1870 — Vice-Admiral E. G. Fanchawe, CB
1873 — Vice-Admiral George G. Wellesley, CB
1876 — Vice-Admiral Sir A. Cooper Key, KCB, FRS
1878 — Vice-Admiral Sir E. A. Inglefield, Kt., CB, FRS, DCL
1879 — Vice-Admiral Sir F. L. M'Clintock, Kt., FRS
1882 — Vice-Admiral Sir John E. Commerell, VC, KCB
1885 — Vice-Admiral Rt. Hon. the Earl of Clan-William, KCB, KCMG
1886 — Vice-Admiral Sir Algernon McL. Lyons, KCB
1889 — Vice-Admiral Sir George Wiilis Watson, KCB
1892 — Vice-Admiral Sir John O. Hopkins, KCB
1895 — Vice-Admiral Sir James E. Erskine, KCB
1897 — Vice-Admiral Sir John A. Fisher, KCB
1899 — Vice-Admiral Sir Fred G. D. Bedford, KCB
1901 — Vice-Admiral Sir Archibald R. Douglas, KCB
1904 — Admiral Sir Day H. Bosanquet, KCB

early in 1925, the Royal Canadian Navy took over the premises for the Wardroom Officers' Mess, the beginning of a period that was to last until 1954, a period during which most of today's officers had occasion to make use of the facilities and, above all, to breathe the atmosphere of charm and dignity that pervades this venerable naval building.

BEFORE the Second World War, Admiralty House was in every way an ideal officers' mess, but with the coming of war, and the consequent increase of naval personnel, the facilities of Admiralty House were stretched to the limit. The provision of meals alone, for example, was a really tremendous task. Great credit goes to the cooks and stewards who, working from a kitchen not much larger in size than those found in some private residences, served as much as an average total of 600 meals a day. Lunch offered the biggest problem, when as many as 300 people awaited a meal, which meant six or seven separate sittings because of the limited seating capacity.

With the continued growth of Canada's post-war navy, it became obvious that something would have to be done to provide a larger officers' mess. The year 1954 saw the opening of the new Wardroom Officers' Mess on Lorne Terrace, a huge building with permanent accommodation for 350 officers, fine large dining hall and other spacious public rooms.

Once again, Admiralty House was empty, save for its ghosts.

Such a building gets filled, sooner or later, by some useful enterprise. As the new ships of today's fleet were prepared for service, their pre-commissioning crews used Admiralty House space for offices, as did the sailor-administrators temporarily ashore from ships in major refits. In 1961, a general face-lifting was accorded the grand old structure, during which various war-time wooden additions were removed. Finally, approval was given for its conversion to a Command Library of considerable scope.

"Ad House", as it is called by officers and men of the service, and every Haligonian, is described by William C. Borrett, in his book series, *Down East*, as follows:

"A house with so much personality is bound to be spoken of across Canada. It has dignity. It is made of stone but its walls are not cold looking. It seems to breathe hospitality. Its high walls seem to shut out the world. Even new construction close at hand cannot rob it of its charm."

Inside its book-lined walls today, library-quiet, the ghosts remain. Thomas H. Raddall, Bluenose author, has reflected: "But they're part of it. No one can take them away. And when you sit here alone, and the house is quiet, and the lights are out, you can almost hear them whispering."

The first Atlantic Regional Civil Service Commission Course in administrative services began in HMCS Shearwater on March 4. A group of 31 students, two course directors and seven course leaders used the facilities of the naval air station until March 16. Before beginning the course, members toured Shearwater, where Lt. L. A. Ashley, above, during the visit to HS 50, lectured to one group of students on the capabilities of the Sikorsky HO4S-3 helicopter. The civil servants' course held classes in the Groundcrew Division Building of the Fleet School. Accommodation and meals were provided by Shearwater and the recreation facilities of the air station were made available to all the members of the course. (DNS-30448)

GERMAN FRIGATES VISIT ESQUIMALT

A wide variety of entertainment and special events were arranged for officers, cadets and men of the German training frigates *Graf Spee* and *Hipper* following their arrival at Esquimalt on April 1 for a two-day visit.

Between them, the two ships carried 415 personnel, including 80 naval cadets in each ship.

The ships reached Esquimalt on the morning of April 1 and secured at the government jetty adjacent to HMCS *Naden*. The ships held "open house" for citizens of Greater Victoria the following afternoon.

Commanding officers of both visiting ships paid official calls to Government House, the Premier's office, the Flag Officer Pacific Coast, the Mayor of Victoria and Reeve of Esquimalt. A civic luncheon for the visiting German commanders was held at the Union Club.

All 160 of the German naval cadets on the first day visited the Canadian Services College, Royal Roads, and that evening 50 of the visiting cadets attended a dance there.

Smokers for the visitors were held in the chief petty officers', and petty officers' messes and the Fleet Club of HMCS *Naden*.

A Pacific Command reception for officers of both German ships was held at the *Naden* wardroom. Commanding officers of the ships dined later the same evening at the residence of Rear-Admiral W. M. Landymore, Flag Officer Pacific Coast.

Tours of points of interest and sports events were on the program arranged for the visiting sailors.

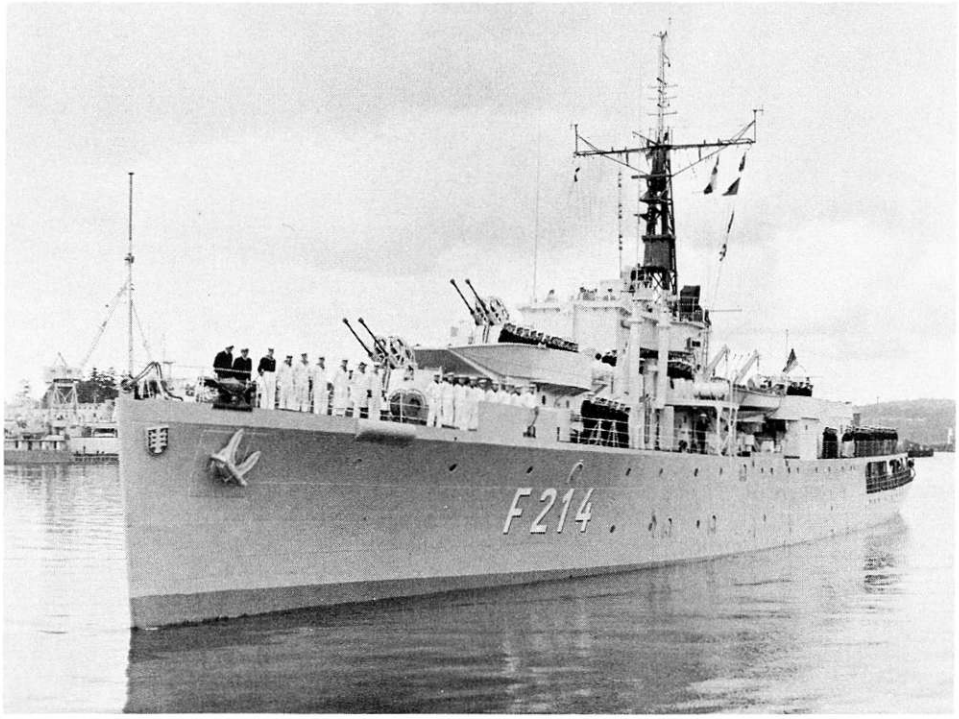
A reception on board the German ships was held Tuesday evening, April 2, starting at 6, with invitations extended by the German Consulate, Vancouver.

The *Hipper* and *Graf Spee* left Esquimalt on the morning of April 3 and proceeded to Vancouver for a three-day visit, followed by calls at Seattle and San Diego.

The 1,470-ton sister ships *Graf Spee* and *Hipper* were both built in Scotland and were formerly HMS *Flamingo* and HMS *Actaeon*, respectively.

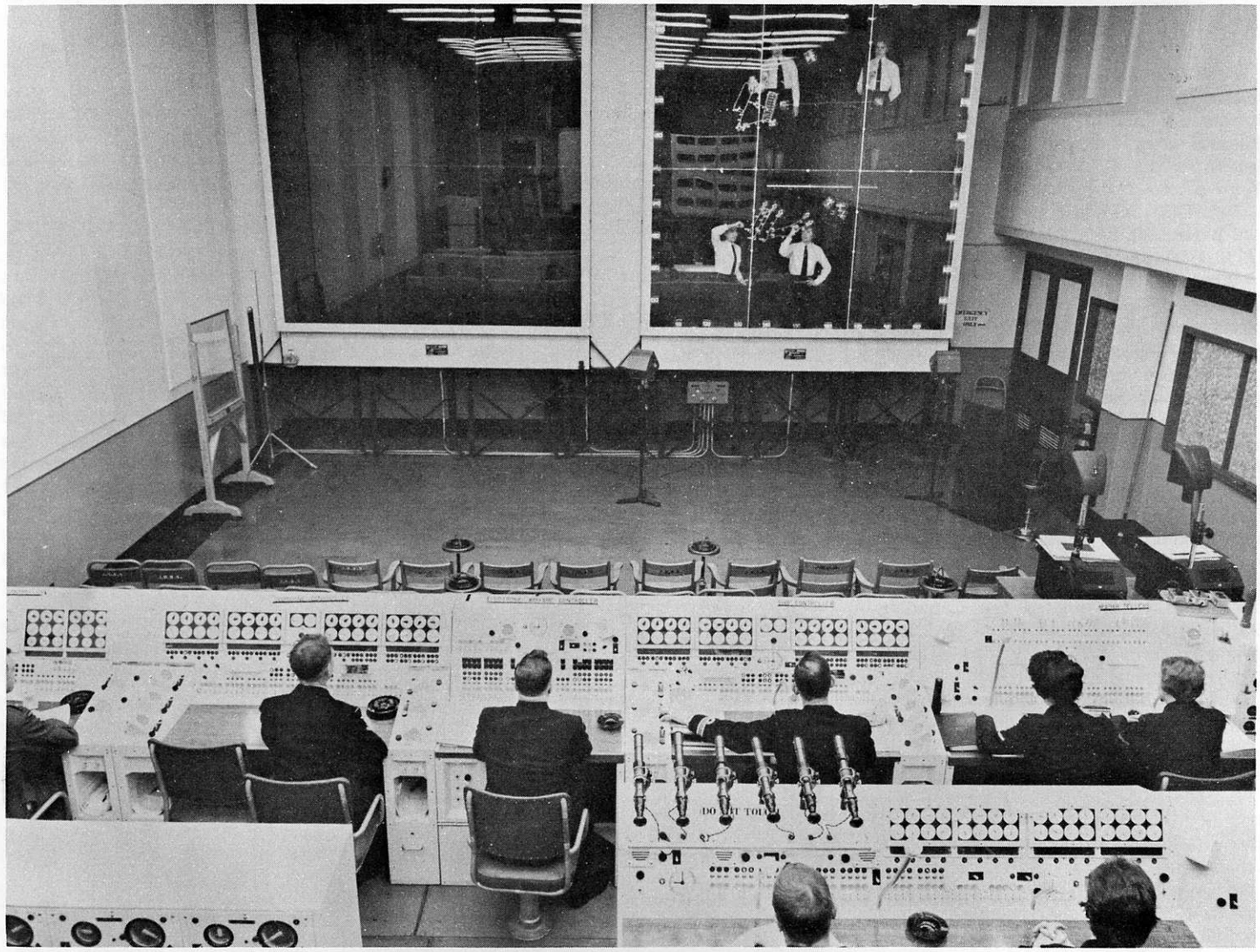
The *Hipper* was transferred from the Royal Navy to Germany in December 1958; while the *Graf Spee* was transferred in January 1959.

The *Graf Spee* is commanded by Cdr. Klaus Juergen Rohwer, and carries 11 officers, 152 enlisted personnel, and 80 naval cadets. The *Hipper* is under the command of Cdr. Ulrich Rehder, and has 10 officers, 148 enlisted men, and 80 cadets.



The German training frigates Hipper and Graf Spee visited Esquimalt at the beginning of April in the course of a 22,000-mile cruise, which began January 22 and will end June 22. Each ship carries 80 cadets. The ship pictured, the Hipper, is senior of the two. (E-71419)

Lt. Cynthia Dunne, a U.S. Navy exchange officer serving at Naval Headquarters, with the assistance of the Naval Art Section, takes a look at her "other self" that emerged when she invaded the usually male world of hockey. Lt. Dunne's venture occurred during an annual game between two officers' teams at Headquarters. The challengers, from Naval Air, eked out a team, while the "Others" had difficulty in obtaining a goalie. Lt. Dunne volunteered, turning in a creditable performance, stopping nine shots on goal and helping her team to stave off the aerial onslaught with a 4-4 tie.



An overall view of the RCN tactical trainer in the Joint Maritime Warfare School in Halifax during a post-exercise analysis. (HS-71111)

The Tactical Trainer

THE ROYAL CANADIAN NAVY, in common with other NATO navies, is continually seeking and devising new methods and tactics to improve its anti-submarine capability.

There is little glamour and a lot of hard work connected with this task, and keeping abreast of the latest developments in anti-submarine warfare at sea taxes a heavily-burdened fleet.

One of the more significant steps that has been taken to overcome this problem has been the placing in service ashore of a "tactical trainer".

This is a device to provide facilities for solving tactical problems associated with ships, submarines and aircraft, and to develop a high level of professional skill and teamwork among the anti-submarine units, RCN and RCAF, of Canada's Maritime Command Atlantic. Of necessity elaborate, it embodies several complex electronic and mechanical components on two floors of the RCN-RCAF Joint Maritime Warfare School at HMCS *Stadacona* in Halifax. It has miles of wiring and a myriad tubes.

The RCN tactical trainer is one of a long line of training devices used ashore to augment training at sea. It cannot replace training afloat, but its use greatly enhances the benefits obtained from subsequent exercises at sea.

In other words, the Navy can develop tactics on the trainer before going to sea to test them in actual practice. The results obtained can be analyzed, further developed and perfected on the trainer.

The trainer has an ability to simulate various tactical situations encountered at sea and allows the study and practice of procedures to be used in circumstances that ships and aircraft are liable to encounter. Basically, it is geared for anti-submarine warfare, but is not entirely restricted to this.

The trainer consists of a huge control room and a number of cubicles. The control room is manned by the exercise

control officers, and the cubicles by the various teams taking the tactical training.

Up to 16 independent ships, of which six may be submarines, are simulated by an operations room manned by a commanding officer and his team. All information that would be available to the ship at sea, is continuously supplied, including navigational plot, radar display, sonar and radio information and communications.

The commanding officer controls the course and speed of his own ship and can order the firing of weapons. In the case of aircraft carriers, he can control and direct associated aircraft.

Twelve independent aircraft are simulated. The aircraft captain controls his course, speed and height and is provided with similar information to that supplied to the ship's captain. The flying characteristics of all types of aircraft can be simulated.

In a destroyer escort cubicle, members of the RCN tactical trainer staff simulate an operations team in action during a tactical training exercise. (HS-71115)

Behind the scenes, Wrens Marguerite H. Eccles and Edith V. McDonald operate the projectors of the tactical trainer. (HS-71110)

Ships, submarines and aircraft can be grouped into friendly or enemy forces in any proportions for particular exercises. A convoy of any size may also be represented.

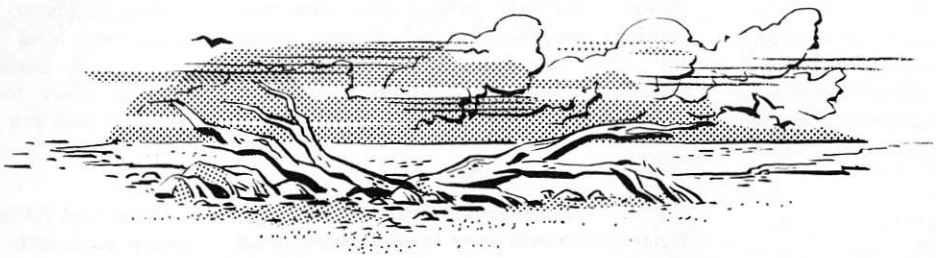
During the past year, a broader type of tactical/strategical game has been tried. Units have been disposed in selected positions in the overall Canadian sub-area and all movements controlled by and incidents reported to the Maritime Commander Atlantic, thus simulating a defence situation in a large area.

Such exercises unfold on a huge screen on the control room wall, initially as a 1,600-mile grid of the North Atlantic. The exercise area on the screen can localize to 25 square miles. Units involved in any particular game are simulated by symbols of light projected on the cloth display screen and cunningly geared to the direction and speed called for in the exercise.

Meanwhile, in their various cubicles, the individual ships and aircraft are aware only of the local situations about them. However, the complete geographical location of all units, including submerged submarines, is available to the exercise control officers at a glance. They not only get information on courses and speeds of ships, submarines and aircraft, but also have facilities for monitoring all communications and can exercise control of the game at all times.

Throughout an exercise, the positions of all units are plotted in crayon by wrens on a plastic screen. At the end of an exercise, the screen can be hoisted and the tracks displayed. The lessons learned can then be discussed on the spot between the controlling officers and the personnel who operated the units in the game.

Similar trainers exist in England, Malta, Pakistan and Spain.



ISOMETRICS

Isometric exercises, in which muscles are built simply by pitting them against each other, are being studied by the U.S. Navy, with the thought that they may be particularly useful for desk-bound personnel.

The exercises are described in the article reprinted here from the Navy Times, *published in Washington, D.C.*

Isometrics came into prominence in Canada last year, when adopted by the Winnipeg Blue Bombers as part of their pre-season conditioning program. And who won the Grey Cup?

WASHINGTON—There may be a new physical exercise program in your future—especially if you are a desk-sitter or are over 40 years of age.

The U.S. Navy Department has just released a "trial balloon" printing of 4,400 copies of a booklet on "isometrics". These are described as "the science of physical exercise without movement". It could have added "or equipment".

There are nine exercises — which accompany this article — that require 54 seconds a day to do. Five others—the same as the present "conditioning exercises"—are used for building endurance.

Basically "isometrics" is a space age term for the old Charles Atlas "dynamic tension" exercises in which one muscle is tested against another. For example, you put your fist in the palm of your other hand in front of your chest and push as hard as you can in both directions. Builds arms, chest and shoulders. Some have doubled their strength in 20 weeks, the illustrated booklet claims.

Under Secretary of the Navy Paul B. Fay Jr., who has been ramrodding the entire sea service fitness program, said he will send out a questionnaire to see what the field thinks of the new plan. If it's "generally acceptable" by the 4,400 addressees in the Washington area, the pamphlet— entitled *Shape Up* —will "go into general distribution" in the fleet, Fay said.

A Fay aide, Cdr. M. D. Turley, indicated the Navy would be happy to supply people outside the sea services with the program if they want it. He cautioned that the new isometric exercises are to be used in conjunction with the program ailready in being; they are to be used mostly by the desk bound who have trouble making time to tone up the body for the periodic fitness tests and for the over 40.

Shape Up recommends, if you use the exercises, you should exert only about 50 per cent of your strength the first week. Hold your breath and do each exercises for six seconds. Take about 15 seconds between positions.

"For maximum benefit, the pamphlet says "these exercises must be performed every day. Although a single repetition in each position will result in a significant increase in strength for most individuals, several repetitions will improve muscular endurance and provide an even greater strength increase."

Why are only six seconds devoted to each position? *Shape Up* asks. "Because in only six seconds most individuals can gain a significant amount of strength and muscle tone. (Science has shown that a muscle can grow in strength only at a certain rate. This rate can't be speeded up, no matter how much you exercise beyond a certain point.")

But, it points out, along with strength you must have endurance. And five exercises, same as the ones now used for conditioning, are provided for this. The pamphlet also urges other exercising (don't accept a ride when you can walk) and weight-watching for progress in fitness.—*Navy Times.*

54-SECOND WORKOUT FOR THE SEDENTARY

Here is the set of isometric exercises which has been distributed to U.S. naval personnel in the Washington, D.C., area. Each exercise takes just six seconds, so that the day's stint can be completed in less than a minute.

One

The pull-up for arms and shoulders. Sit straight, grasp sides of chair with hands and pull up hard as possible.

Two

Hand press for arms, chest and shoulders. Sit straight with chest out and arms held across chest. Place one fist inside the other and press together using all strength of arms and shoulders.

Three

Back pull for back. Keep back straight, lean forward until you can grasp legs or braces of chair. Pull straight up, using back muscles only.

Four

Neck presser for neck. Sitting straight, clasp hands behind neck, holding elbows forward. Pull forward with hands and at same time press head backwards.

Five

Tummy tightener for waist and abdomen. Sitting with legs together straight out, bend forward and grasp the legs just below the knees. Press down with the hands at the same time you press up with the legs.

Six

The criss-cross for chest and legs. Place feet about four inches apart, bend forward and place hands against inside of opposite knees. Attempt to press knees together at the same time you hold them apart with hands.

Seven

Body lift for shoulders, arms and abdomen. Keep the back straight, lean forward and place hands palm down at side of the chair. Hold legs straight out and raise body about one inch off chair.

Eight

Leg squeezer. Sit forward on chair, lean back and hold legs straight out. Hook one foot over other and hold tightly. Rest feet on floor, keep legs straight and try to pull feet apart.

Nine

Arm curl for upper arms. Sit straight, grasp underside of desk or table with palms up and forearms parallel to floor. Push up hard as possible.

Boatswain's Call

A RECENT press report said that the Royal Navy had decided to abolish the boatswain's call because modern public address systems had made it obsolete. Even if it should prove true, the story would remain incredible.

The use of the boatswain's call at sea is an institution that pre-dates the Royal Navy itself by hundreds of years. It is pure navy and its use as a mark of respect has been jealously guarded. No one, with the exception of Her Majesty the Queen, is entitled to a "pipe" unless he is in naval uniform.

This inviolable mark of respect, known as "piping the side", has its ancient origin in the call used for hoisting a person in or out of the ship, by means of a yard-arm whip and boatswain's chair, when the ship was at sea.

Although it is probably the simplest musical instrument ever invented, with only two notes, the Royal Navy's *Manual of Seamanship* (1937) lists 22 separate calls, some of which are used for several purposes, depending on the time of day or what is being done. Thus, it was formerly possible to convey about three dozen separate "messages", the one that brought the most prompt response being the merry shrilling that proclaimed "Up spirits".

By the time the next edition of the *Manual of Seamanship* appeared in 1951, the rot had set in and only 15 pipes were listed.

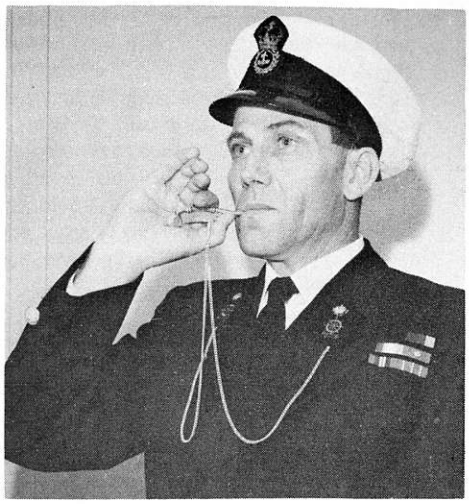
This decline has been wistfully noted by CPO William H. Lloyd, of *Stadacona,* who in 1938 as an ordinary seaman won his first competition for piping the best of all with the call. Recently he was heard nationally on the CBC network program, "On the Move".

And Chief Lloyd further observes that, of the 15 remaining pipes, only six are still in common use today. They are the "Still", "Carry On", "General Call", "Pipe the Side", "Dinner" and "Pipe Down". The archaic pipes dealt with heaving and hoisting and the like.

There are two main notes, the "low" and the "high", and three tones: "plain", "warble" and "trill" in the service call. Opening and cupping of fingers on the call and varying breath blown into the mouthpiece, "mouth of the gun", produce the required sounds . . . with much discreet practice, of course.

Every seaman must know how to use the call and how to pipe the orders, many routine in nature, which are known as "pipes".

The Seamanship Manual elaborates: "The use of the boatswain's call in English ships can be traced back with certainty to the days of the Crusades, AD 1248. In former days it was worn in English ships and fleets as an honoured badge of rank, probably because it had always been used for passing orders. As long ago as 1485 it was worn as the badge of office of the Lord High Admiral of England, and by his successors of office up to 1562. Thereafter it was used throughout the English fleets for passing all orders, and since about 1671 it has always been known as the boatswain's call. Nowadays the boatswain's call and chain are the badge of office of the Chief Boatswain's Mate, quartermasters and boatswain's mates."



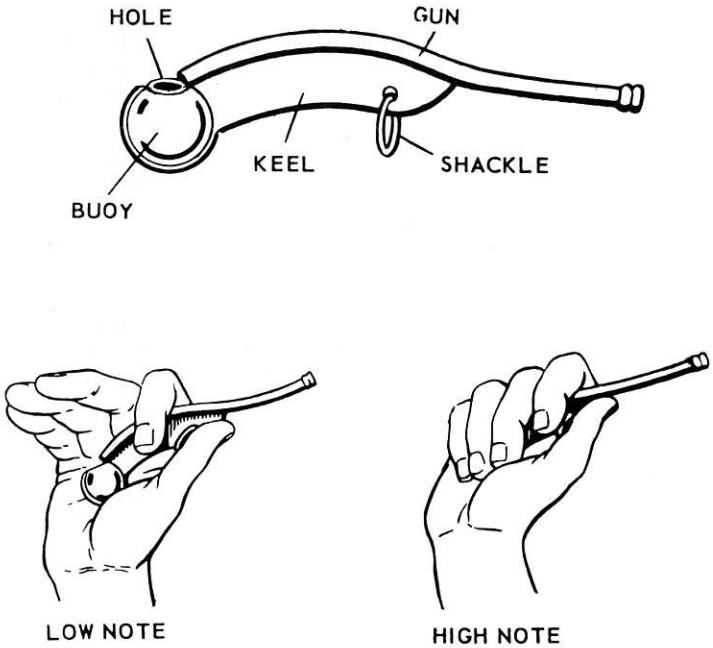
CPO WILLIAM H. LLOYD

A naval tradition resulting from piping of orders is that whistling is forbidden in ships, lest the sound be confused with that of the call. In olden days, when the only dessert was "plum duff" at Sunday dinner, the ship's cook was compelled to whistle all the time he was preparing the treat, to prove he wasn't stowing the raisins in his own hold.

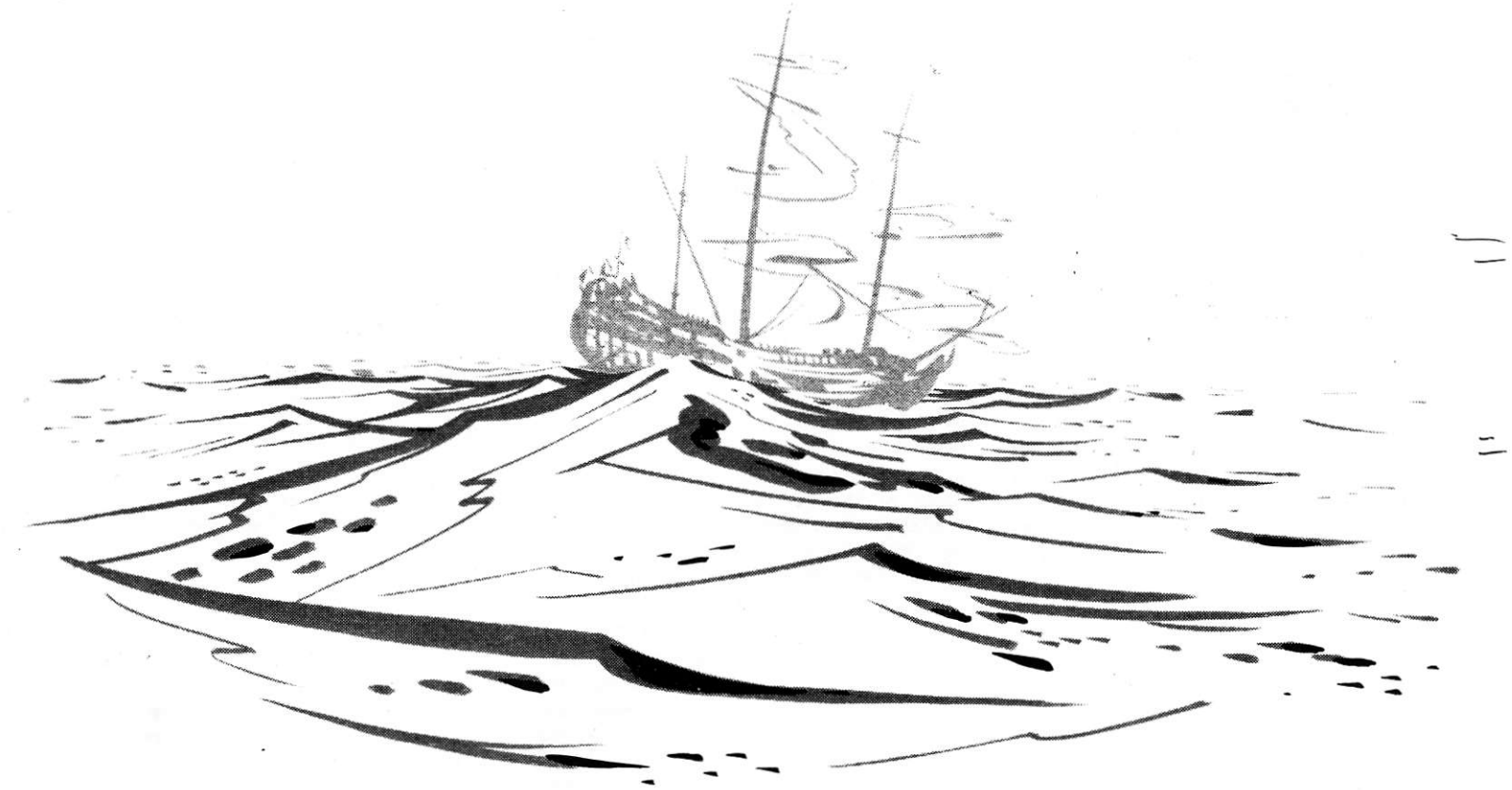
CPO Lloyd, one of the senior men of the boatswain trade of the RCN today, was born in Winnipeg on March 28, 1920. He attended Bannatyne School and Linwood Collegiate in St. James, Man., before joining the Navy in June, 1938, as an ordinary seaman. During the war he served on the North Atlantic in the destroyer *Fraser,* the British cruiser *York,* the first HMCS *Ottawa* (destroyer), the corvette *Sorel,* minesweeper *Trois Rivieres* and the second destroyer *Ottawa.*

Since the war he has served in the Algerine escort *New Liskeard,* aircraft carrier *Magnificent,* the New Liskeard again and the destroyer escorts *Haida* and *Huron.*

He is currently in the Operations Division, Fleet School, ashore in Halifax. His home is in Dartmouth.



The boatswain's call, and the method of making the only two notes it can produce.



GHOST SHIPS

FLYING SAUCERS disappeared from the skies once the U.S. Air Force had established by long and careful study that they existed only in the minds of the observers. It is reasonably certain that no such fate will befall the ghost ships that sail the Seven Seas. They are too much a part of marine folk-lore and traditions.

The most famous of the phantom ships is the *Flying Dutchman,* forever striving to beat her way around the Cape of Good Hope and find a safe haven—and forever doomed to fail.

However, ghost ships can be found much closer to home than the southernmost tip of Africa. Stories of such vessels abound in the folklore of the Maritimes and such supernatural vessels are said also to sail the waters of the Great Lakes.

Ghost ships, generally speaking, come in two varieties. Some are actual vessels, such as the famed *Mary Celeste,* which appear to have been subjected to some supernatural disaster. (The *Mary Celeste,* it will be recalled, was found far at sea in good sailing condition without a living soul on board). Others are what can only be described as ghosts of ships, sometimes accompanied by weird manifestations such as flames or flitting lights. The *Flying Dutchman* is of this class.

A ghost ship story was current in Newfoundland during the latter part of the Second World War. The tale was of the *Mary Celeste* variety and underwent many improvements in the telling.

A trawler was sighted drifting in the North Atlantic (so the story went) and failed to answer the challenge of a U.S. Coast Guard cutter. A boarding party searched the ship and found no crew. But the little ship was in perfect condition and there was an ample supply of food on board. No conjecture to account for the disappearance of the crew was too far-fetched.

The true story was every bit as dramatic and almost equally distressing.

The real ship was the anti-submarine trawler *Strathella.* During heavy weather on the night of January 12-13, 1944, she lost touch with Convoy UR-105, bound from Britain for Iceland. An RAF aircraft that flew over the route of the convoy saw nothing of her. No further news arrived during the following week and, on January 22, the Admiral Commanding in Iceland presumed her lost.

On February 14, a U.S. aircraft, flying from Greenland to Newfoundland, sighted the *Strathella* drifting off the Greenland coast. Help was sent. The little ship was towed into Greenland and the crew, weak from starvation, was removed to hospital. They had been adrift for nearly five weeks before their rescue.

The most famous ghost ship of Canadian waters is the one that sails the Baie de Chaleur and she attained her notoriety because so many school children of a generation or more ago had to learn by memory the poem about her that began:

"Have you ever heard of the phantom light
That over the moaning waves by night..."

Sometimes this phantom light was said to take the form of a burning sailing ship. Tastes in poetry have changed since then and today's child is unlikely to have heard of the strange phenomenon.

TALES of ghost ships are greatly subject to sea change. This may be because they originate in the dimly lit subjective world of illusion and hallucination and because it is so easy to improve on the first awe-stricken version.

This is illustrated by the *Flying Dutchman* stories. The common version is that the captain's blasphemous outburst, when foul weather frustrated his efforts to round the Cape, condemned him to an unending voyage.

A German version places the ship in the North Sea, where she sails aimlessly forever, without helmsman or lookout, while the captain plays at dice with the devil—the stakes, the captain's soul.

Sir Walter Scott tried to bring the story part way down to earth. His version was that the *Flying Dutchman* was a vessel laden with bullion, sailing homeward from the Indies. There was a murder on board and the crew was stricken with the plague. Henceforth, all ports were closed to the ship.

The first of these three versions is the one that forms the theme of Richard Wagner's grand opera, *The Flying Dutchman.*

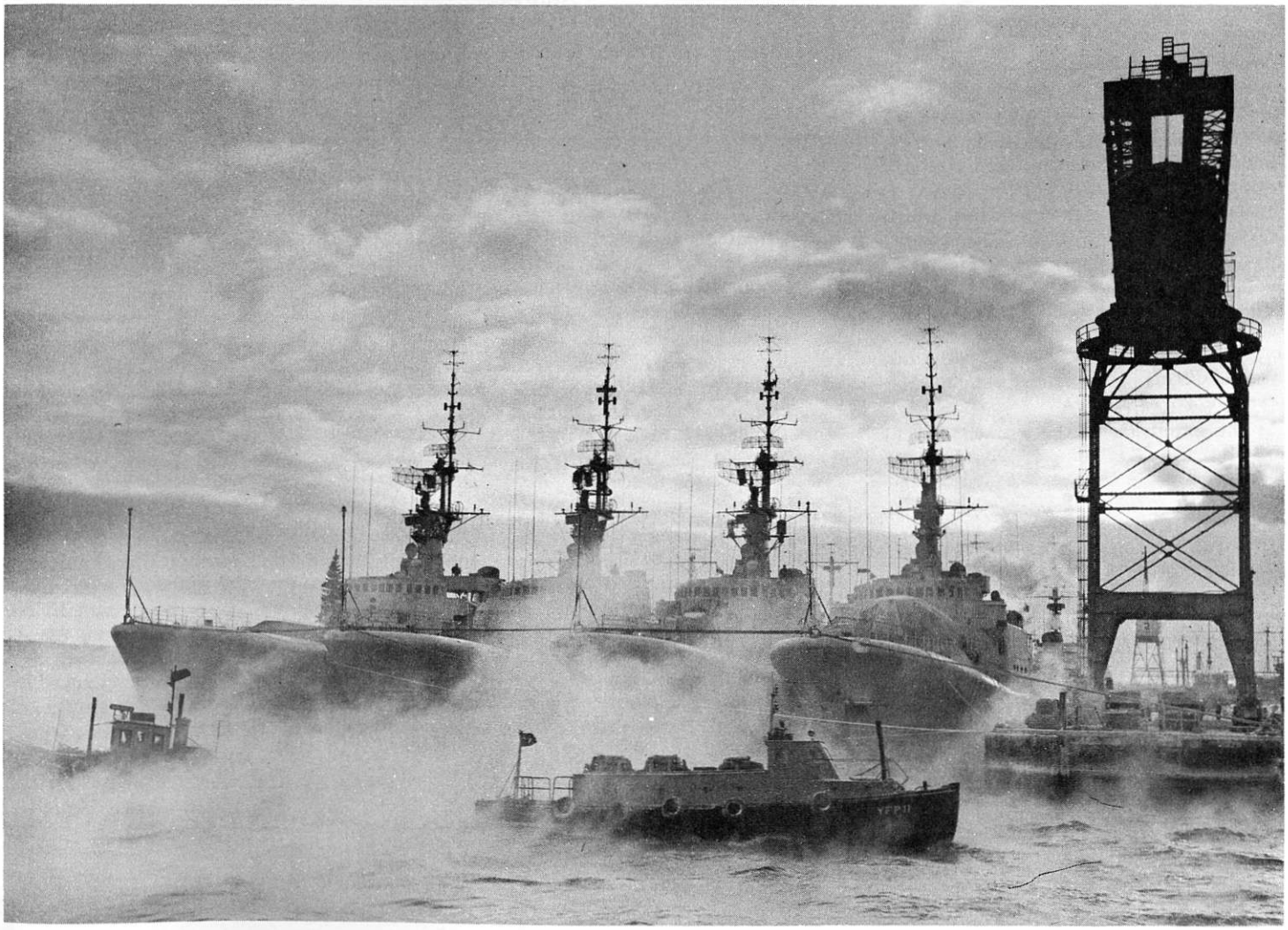
Tales of ghost ships and other strange manifestations in Canadian waters are being gathered by the Archives de Folklore of Laval University in Quebec City. Many interesting tales of the sea have already been collected, and Sister Marie-Ste.-Helene, who is directing the search, has suggested that naval personnel should be in a position to add to the store.

In a letter to *The Crowsnest,* Sister Marie-Ste.-Helene says there are stories current in the Great Lakes area that the ghost of Chevalier de la Salle's *Griffon* is still to be seen sailing the inland waters and that observers claim also to have seen the ghosts of two steamers, the *Chicora* and the *Bannockburn.* She asks if anyone can add further particulars.

Another phenomenon of interest to the Folklore archives is St. Elmo's fire, although it has long been known that this is merely a brush discharge of static electricity, often seen ashore as well as at sea.

The name "St. Elmo" is derived from St. Erasmus, an Italian bishop who was martyred in 304 A.D. He became the patron saint of Mediterranean sailors, who believed St. Elmo's fire indicated that the saint was watching over them.

Before the Christian era, the phenomenon was regarded by Greek sailors as



Ghost ships may or may not exist, but sometimes visual evidence that they do is strong. This picture of four Restigouche class destroyer escorts wreathed in Arctic sea smoke in Halifax harbour was taken on the first day of winter when the sea temperature was 34 degrees and the air temperature 1.2 degrees F, with the wind gusting to 30 knots. (HS-70838)

indicating the presence of the gods Castor and Pollux (or Polydeuces), who appeared as fire at the masthead.

In his detailed study, *The Greek Myths,* Robert Graves says:

"Poseidon made Castor and Polydeuces the saviours of shipwrecked sailors, and granted them the power to send favourable winds; in response to a sacrifice of white lambs, offered on the prow of any ship, they will come hastening through the sky, followed by a train of sparrows."

A sampling of some of the information received by the archives in response to a questionnaire was enclosed with Sister Marie-Ste.-Helene's letter:

The Questionnaire

Pirate Ship *Fire-Ship* *Phantom-Ship*

Flying Dutchman *St. Elmo's Fire*

1. Have you already seen any of these ? Where? Under what name?
2. In what form does it appear?
3. When was it last seen?
4. When does it appear? At a certain time of the year? Of the day?
5. What is its origin? Its significance?
6. Will you please mention other details you know and also the names of persons who have seen these phenomena.

Date: Name

Address:

Please return to: Sr. Marie-Ste.-Helene, f.m.a., Archives de Folklore, Laval University, Quebec 4, P.Q.

"THOUGH ONE finds the story of the ghost ship in Greek literature (the Argonauts), as well as in German (Wagner's *Der Fliegende Hollander*), and English (Scott, Irving, Poe, Coleridge and others), the legend carries carries over into our day.

"One of the most intriguing incidents was relayed to me in writing by a gentleman who presently resides in Nova Scotia. When only a boy, Mr. J. E. Hushard traded a three-foot long sailing sloop for an old watch with a double case. Between the two cases was hidden an old map which aroused a curiosity that did not abate until years later. While doing duty in CGS *Arleux,* Mr. Hushard studied every chart available to find the locale indicated by the drawing. Not until 1930 did he find the shore line similar to that of the old map. It was Shediac in New Brunswick which during the French occupation was known as Acadia.

"The expulsion of the French Acadians by the English is, according to legend, closely connected with the Ghost Ship. Before leaving this territory, the French buried gold—$45 million in bars—belonging to their government. While trying to escape, the ships was burnt at sea by the English and all hands were lost. The common belief is that this is the ship seen every seven years.

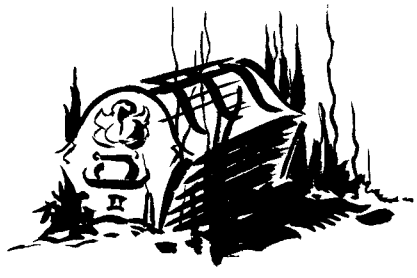
"Various attempts on the part of Mr. Hushard to retrieve the gold have ended in failure due mainly to the fears and superstitions of those assisting him. I quote from his letter: 'I still have the map and maybe some day, when I can find 12 men who will stay and dig, we might be able to get the gold.'

"Over 40 varied versions of this same theme were collected by school children of Richibucto and Caraquet in New Brunswick and the Magdalen Islands, who questioned their parents and the fishermen in the vicinity. Here are a few:

"The ghost ship seen along the Richibucto coast (along Northumberland Strait) appears before a storm and burns for an hour. Sails, masts, cables are visible in a blaze, and at one such time, in 1940, somebody looked through spyglasses and saw men running to and fro in the flames. Efforts to reach her were in vain. Here again one finds the necessity of expiation for sin because it is believed that this is a pirate ship burnt in punishment for the numerous crimes committed by the crew.

"In the Magdalen Islands, this extraordinary phenomenon appears, either in the form of a fire-bird, a ball of fire, or a burning ship. The last recorded materialization was in 1940, after a storm. The islanders relate the story of a young man who after going aboard the ship, never returned. Is this ghost ship the fatal ship whose captain is the devil himself?

"A 14-year-old boy from Caraquet got his information from the oldest resident in the village, Patrick Blanchard, age 101, who saw the burning ship many times. According to his account, the crew were formerly irreligious fishermen who went fishing on Sunday and were punished. The last apparition was in 1960, just a few days before the questionnaire was received."



ABOUT THE ROYAL CANADIAN NAVY

FROM TIME TO TIME the editor is asked to recommend books concerning the Royal Canadian Navy. Some of the titles in the following list are no longer available from the publishers but may be found in public libraries or in second-hand book stores. The main sources of official information concerning the Royal Canadian Navy are *The Naval Service of Canada,* by the late Dr. Gilbert Tucker, in two volumes, and *The Far Distant Ships,* by Joseph Schull, an operational history of the RCN in the Second War. Taken together, these three volumes cover in some detail the first 35 years of the Royal Canadian Navy. For the most part, the rest of the books listed here are concerned directly with the RCN or with its predecessor in Canadian waters, the Royal Navy. Some of them present life in the Navy in pictures or verse.

BOOKS *for the* SAILOR

Bidwell, Rear-Admiral R. E. S., *Random Memories,* Booklet published by the author 6231 Watt St., Halifax (1961).

Borrett, Major W. C., *Tales Told Under the Old Town Clock,* (Halifax, 1942).
More Tales Told Under the Old Town Clock, (Halifax, 1943).
East Coast Port, (Halifax, 1944).
Down East, (Halifax, 1945).
Down to the Sea Again, (Halifax, 1947).
Historic Halifax, (Halifax, 1948).
Tales Retold Under the Old Town Clock, (Halifax, 1958).
All of Major Borrett's books contain articles about, or references to, the RCN and are published by the Halifax Chronicle Publishing Company.

Catley, Harry, *Gate and Gaiters.* An account of life on the lower deck during the Second World War. Privately published by the author in 1949.

Chambers, Captain E. J., *A History of the Department of Marine and Fisheries.* (Ottawa, King's Printer, 1905). Contains a chapter on "Canadian Naval Militia".

Easton, Lt.-Cdr. Alan, RCNR, *50 North.* Atlantic convoy experiences. (Toronto, Ryerson, 1963).

Garner, Hugh, *Storm Below,* (Toronto, Collins, 1949). Fiction. The tale of an imaginary Flower Class corvette. HMCS *Riverford.*

Irvine, Lt.-Cdr. T. A., RCN, *The Ice Was All Between.* (Longmans, Green and Co., Toronto, 1959). The story of HMCS *Labrador's* navigation of the Northwest Passage in 1954.

Leacock, Stephen, and Roberts, Leslie, *Canada's War at Sea.* (Montreal, A. M. Beatty Publications Ltd., 1944).

Longstaff, Major, F. V., *Esquimalt Naval Base: A History of Its Work and Its Defences,* (Victoria, the author, 1941).
HMCS Naden Naval Barracks: A History of Its Work, Senior Officers and Ships, (2nd ed., Victoria, the author, 1952). Re-issued in 1957.
The Uganda in Action. (Victoria, the author, 1952).

Macdonald, Grant, *Sailors.* (Toronto, Macmillan, 1945). RCN war art.

Milne, Gilbert A., et al, *H.M.C.S.,* (Toronto, Thomas Allen, Ltd., 1960). War-time photographs taken by the author, with accompanying text by Scott Young and Joseph Schull; layout by Max Newton.

Pratt, E. J. *Dunkirk,* (Toronto, Macmillan, 1941). Poetry.
They are Returning. (Toronto, Macmillan, 1945). Poetry.
Behind the Log, (Toronto, Macmillan, 1947). Poetry.

Pugsley, Lt. W. H. RCNVR, *Saints, Devils and Ordinary Seamen.* (Toronto, Collins, 1945). Life on the lower deck in war-time RCN.
Sailor Remember, (Toronto, Collins, 1948).
Return to Sea, (Toronto, Collins, 1960).

Schull, Joseph, *The Far Distant Ships: An Official Account of Canadian Naval Operations in the Second World War,* (2nd. rev. ed., Ottawa, Queen's Printer, 1962).
Ships of the Great Days. Condensation of foregoing for young readers. (Toronto, Macmillan, 1962).

Sclater, W., *Haida,* (Oxford University Press, no date, about 1946).

Strange, Captain (SB) William, RCN, *Into the Blitz,* (Toronto, Macmillan, 1941). Contains a fine description of a war-time, transatlantic convoy crossing.
The Power that is Sea Power, (Vol. 9, No. 4 of the series *Current Affairs for the Canadian Forces,* August, 1955).

Tucker, Dr. Gilbert N., *The Naval Service of Canada: Its Official History,* (2 vols., Ottawa, King's Printer, 1952). The first volume carries the history to 1939 and the second deals with naval activities ashore during the Second World War.
A History of the Royal Canadian Navy, (Ottawa, Queen's Printer, 1952). A very brief, digest history.

Watt, Lt.-Cdr. F. B., *Who Dare to Live,* (Toronto, Macmillan, 1943). Poetry.
Landfall, (Toronto, Macmillan, 1946). Poetry.

West, Christopher, *Canada and Sea Power,* (Toronto, McCelland & Goodchild, 1913).

Anonymous, *Seaman's Handbook,* (Ottawa, Queen's Printer, 1962).

Various authors, *Occasional Papers,* (Maritime Museum of Canada, Halifax. Titles to date include:
The Influence of Sea Power on the Conquest of Canada, by Cdr. C. H. Little; *Despatches of Rear-Admiral Sir Charles Hardy, 1757-1758, and Vice-Admiral Francis Holburne, 1757; Despatches of Vice-Admiral Charles Saunders 1759-1760; The Naval Side of the Capture of Quebec; Despatches of Rear-Admiral Philip Durell, 1758-1759, and Rear-Admiral Lord Colville, 1761-1762; The Two Hundredth Anniversary of the Halifax Dockyard,* by Lt. P. H. Watson, and (same booklet) *The Dory,* by Lt.-Cdr. F. W. Nicholson; *The March of the Seamen* by Rear-Admiral H. F. Pullen, and *The Story of HM Armed Schooner Tecumseh,* John R. Stevens; *The Battle of the Restigouche,* edited by Cdr. C. H. Little, who also edited the despatches listed above.

COMPOSITION OF THE FLEET

The Royal Canadian Navy maintains a fleet of approximately 60 warships, two-thirds of which are based at Halifax, and the remainder at Esquimalt. Ships and aircraft of the RCN have been designed and equipped in accordance with their role which is primarily anti-submarine warfare.

Under construction in Canadian shipyards are three destroyer escorts of the Mackenzie class and a 22,000-ton fleet replenishment ship, the *Provider*. This ship, the largest to be built in Canada for the RCN, will join the fleet later this year.

Two St. Laurent class destroyer escorts are being fitted with helicopter platforms and variable depth sonar (VDS). Eventually all destroyer escorts of this class will be equipped with helicopter handling facilities and the Canadian designed VDS.

The CHSS-2 anti-submarine helicopter has been selected to replace the HO4S-3. Delivery of the first new machine is scheduled for mid-May. The CHSS-2 will operate from the aircraft carrier and destroyer escorts.

On January 1, 1963, the authorized manpower of the RCN was 21,720. At that time, the strength of the RCN was 21,541.

The recruiting and training of the Royal Canadian Naval Reserve is conducted mainly through 21 Naval Divisions across Canada, under the over-all command of the Commanding Officer Naval Divisions with Headquarters at Hamilton, Ont. The strength of the RCNR as of January, 1963, was 3,635 officers, men and wrens. In addition more than 400 UNTD Cadets, attending universities across Canada were on the strength of the naval reserve.

Atlantic Command - Ships Based at Halifax

HMCS *Bonaventure*, aircraft carrier

First Canadian Escort Squadron
(destroyer escorts)

HMCS *Algonquin*	Algonquin class
HMCS *Micmac*	Tribal class
HMCS *Cayuga*	" "
HMCS *Crescent*	Algonquin class
HMCS *Athabaskan*	Tribal class
HMCS *Saskatchewan*	Mackenzie class
HMCS *Yukon*	" "

Third Canadian Escort Squadron
(destroyer escorts)

HMCS *Haida*	Tribal class
HMCS *Sioux*	" "
HMCS *Nootka*	" "

Fifth Canadian Escort Squadron
(destroyer escorts)

HMCS *Gatineau*	Restigouche class
HMCS *Chaudiere*	" "
HMCS *St. Croix*	" "
HMCS *Columbia*	" "
HMCS *Restigouche*	" "
HMCS *Terra Nova*	" "
HMCS *Kootenay*	" "

Seventh Canadian Escort Squadron
(frigates)

HMCS *Fort Erie*	Prestonian class
HMCS *Lanark*	" "
HMCS *Inch Arran*	" "
HMCS *New Waterford*	" "
HMCS *Outremont*	" "
HMCS *Victoriaville*	" "

Ninth Canadian Escort Squadron
(frigates)

HMCS *Cap De La Madelaine*	Prestonian class
HMCS *La Hulloise*	" "
HMCS *Lauzon*	" "
HMCS *Swansea*	" "
HMCS *Buckingham*	" "

First Canadian Minesweeping Squadron
(coastal minesweepers)

HMCS *Chaleur*	Bay class
HMCS *Thunder*	" "
HMCS *Quinte*	" "
HMCS *Chignecto*	" "
HMCS *Resolute*	" "
HMCS *Fundy*	" "

Special Duties

HMCS *Cape Scott*	Cape class escort maintenance ship
HMCS *Cormorant*	Bird class harbour craft
HMCS *Loon*	" " " "
HMCS *Mallard*	" " " "
HMCS *Granby*	Diving depot ship (converted Bangor class minesweeper

Operational Reserve

HMCS *Iroquois*	Tribal class destroyer escort
HMCS *Huron*	" " " "

Sixth Submarine Squadron (RN under RCN operational control)
One or two "A" class submarines

RCN Air Squadron, based at HMCS *Shearwater*

VS-880	CS2F-2 Tracker anti-submarine aircraft
VU-32	CS2F-1, CS2F-2 Tracker A/S aircraft T-33 jet trainers
HS-50	Sikorsky A/S helicopters
HU-21	HTL Bell helicopters HO4S Sikorsky helicopters
VX-10	Various aircraft for experimental purposes

Pacific Command - Ships Based at Esquimalt

Second Canadian Escort Squadron
(destroyer escorts)

HMCS *Fraser*	St. Laurent class
HMCS *Margaree*	" " "
HMCS *Skeena*	" " "
HMCS *Ottawa*	" " "
HMCS *Saguenay*	" " "
HMCS *Mackenzie*	Mackenzie class

Fourth Canadian Escort Squadron
(frigates)

HMCS *Sussexvale*	Prestonian class
HMCS *Beacon Hill*	" "
HMCS *Antigonish*	" "
HMCS *Ste. Therese*	" "
HMCS *Stettler*	" "
HMCS *New Glasgow*	" "
HMCS *Jonquiere*	" "

Second Canadian Minesweeping Squadron
(coastal minesweepers)

HMCS *Fortune*	Bay class
HMCS *James Bay*	" "
HMCS *Cowichan*	" "
HMCS *Miramichi*	" "

Special Duties

HMCS *Cape Breton*	Cape class escort maintenance ship
HMCS *Grilse*	Balao class submarine
HMCS *Oriole*	Training yacht attached to HMCS *Venture*
HMCS *St. Laurent* HMCS *Assiniboine*	To rejoin fleet after conversion, involving addition of helicopter platform and hangar, and variable depth sonar.

RCN Air Squadron (Patricia Bay Airfield, Sidney, B.C.)

VU-33	CS2F-1 Tracker anti-submarine aircraft T-33 jet trainers HUP helicopters

Commanding Officer Naval Divisions - Hamilton

Two or three ships of the Atlantic Command are normally placed under the operational control of the Commanding Officer Naval Divisions, Hamilton, for summer training of RCNR personnel. In addition, a cargo supply vessel, HMCS *Scatari*, and one or two Gate vessels, based at Hamilton, are commissioned each summer for training duties.

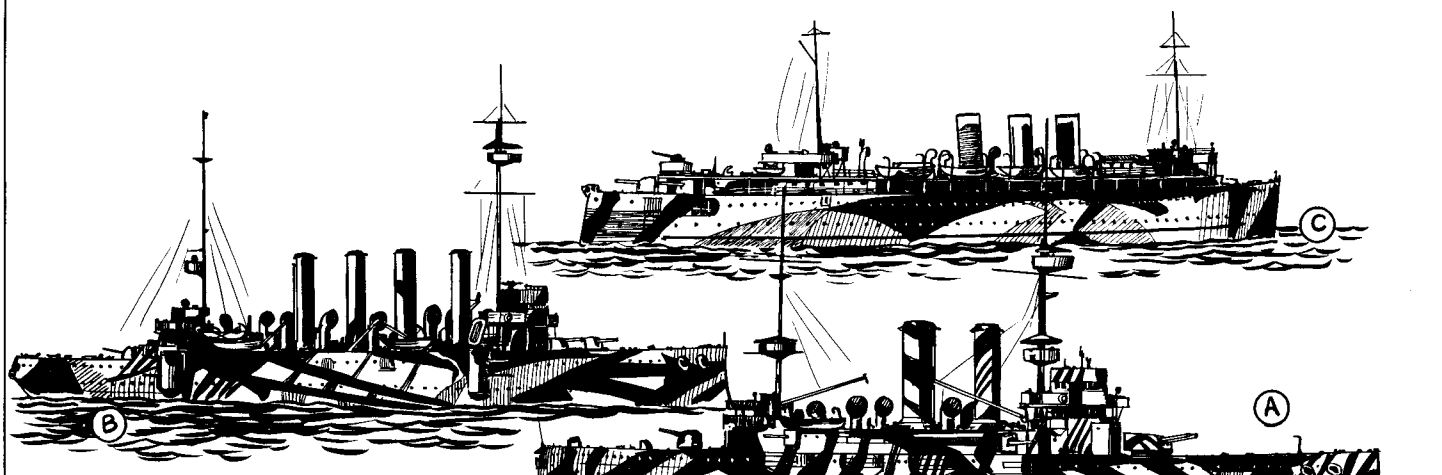
There are two RCNR air squadrons, VC 922, attached to HMCS *Malahat*, Victoria naval division and VC920, attached to HMCS *York*, Toronto. Both are equipped with C-45 Expeditor aircraft for training.

Naval Lore Corner

Number 115

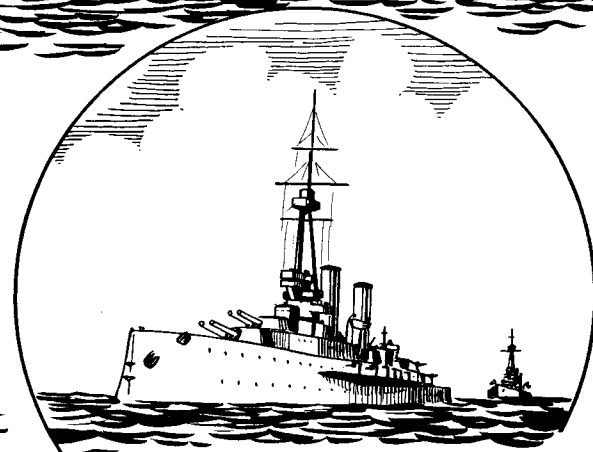
"EXTRAORDINARY SQUADRONS"

THE NAVIES OF THE WORLD ARE ORGANIZED INTO FLEETS, SQUADRONS AND FLOTILLAS. MOST OF THESE DIVISIONS CONSIST OF HOMOGENEOUS UNITS OR CLASSES. SOME OF THE EXCEPTIONS WERE QUITE ASTONISHING!

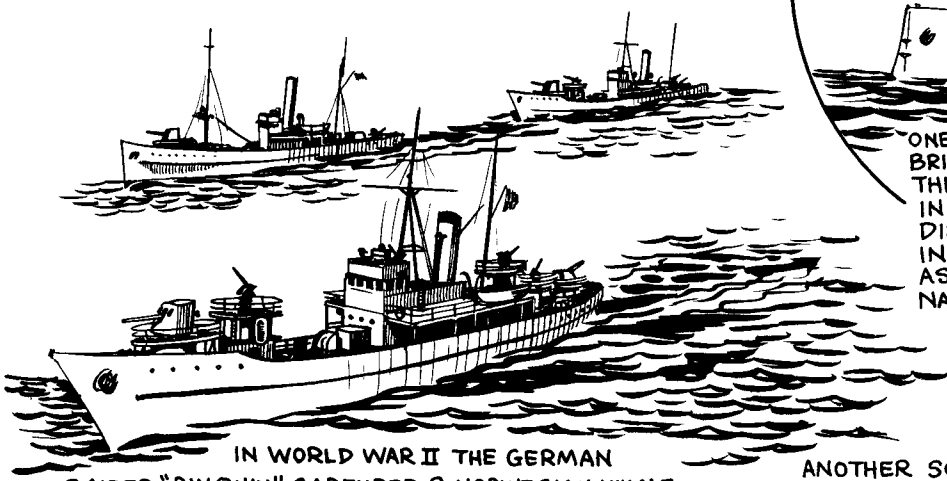


THE 1ST. MINELAYING SQUADRON (1918) COMBINED THREE OF THE ODDEST SQUADRON MATES IN THE ROYAL NAVY.

THE LARGEST UNIT WAS THE EX-PRE DREADNOUGHT BATTLESHIP "LONDON" (A) BEREFT OF MOST OF HER GUNS. HER CONSORTS WERE THE OLD PROTECTED CRUISER "AMPHITRITE" (B) (SISTERSHIP OF H.M.C.S. NIOBE) AND THE EX-C.P.R. PASSENGER LINER "PRINCESS MARGARET" (C) ALL OF WHICH WERE FITTED TO LAY MINES.



ONE OF THE STRANGEST UNITS OF THE BRITISH GRAND FLEET IN 1914 WAS THE 10TH BATTLE SQUADRON. ITS SHIPS, IN REALITY, WERE OLD MERCHANTMEN DISGUISED TO LOOK LIKE DREADNOUGHTS IN ORDER TO DECEIVE THE ENEMY AS TO THE DISPOSITION OF THE ROYAL NAVY'S CAPITAL SHIPS...



IN WORLD WAR II THE GERMAN RAIDER "PINQUIN" CAPTURED 3 NORWEGIAN WHALE FACTORY SHIPS AND 11 WHALECATCHERS IN THE ANTARCTIC. 10 OF THE LATTER WERE SENT HOME TO GERMANY IN PAIRS UNDER PRIZE CREWS AND 8 OF THEM REACHED THEIR DESTINATION. THEY WERE ARMED AND FORMED INTO AN ANTI-SUBMARINE FLOTILLA...

ANOTHER SQUADRON OF THE GRAND FLEET WHICH WAS UNIQUE WAS THE 6TH BATTLE SQUADRON... WHICH WAS NOT BRITISH AT ALL, BUT A U.S. SQUADRON LED BY THE U.S.S. NEW YORK IN 1918 TO REINFORCE THE BRITISH FLEET...

J.M. THORNTON

ROGER DUHAMEL, F.R.S.C,
Queen's Printer and Controller of Stationery
Ottawa, 1963