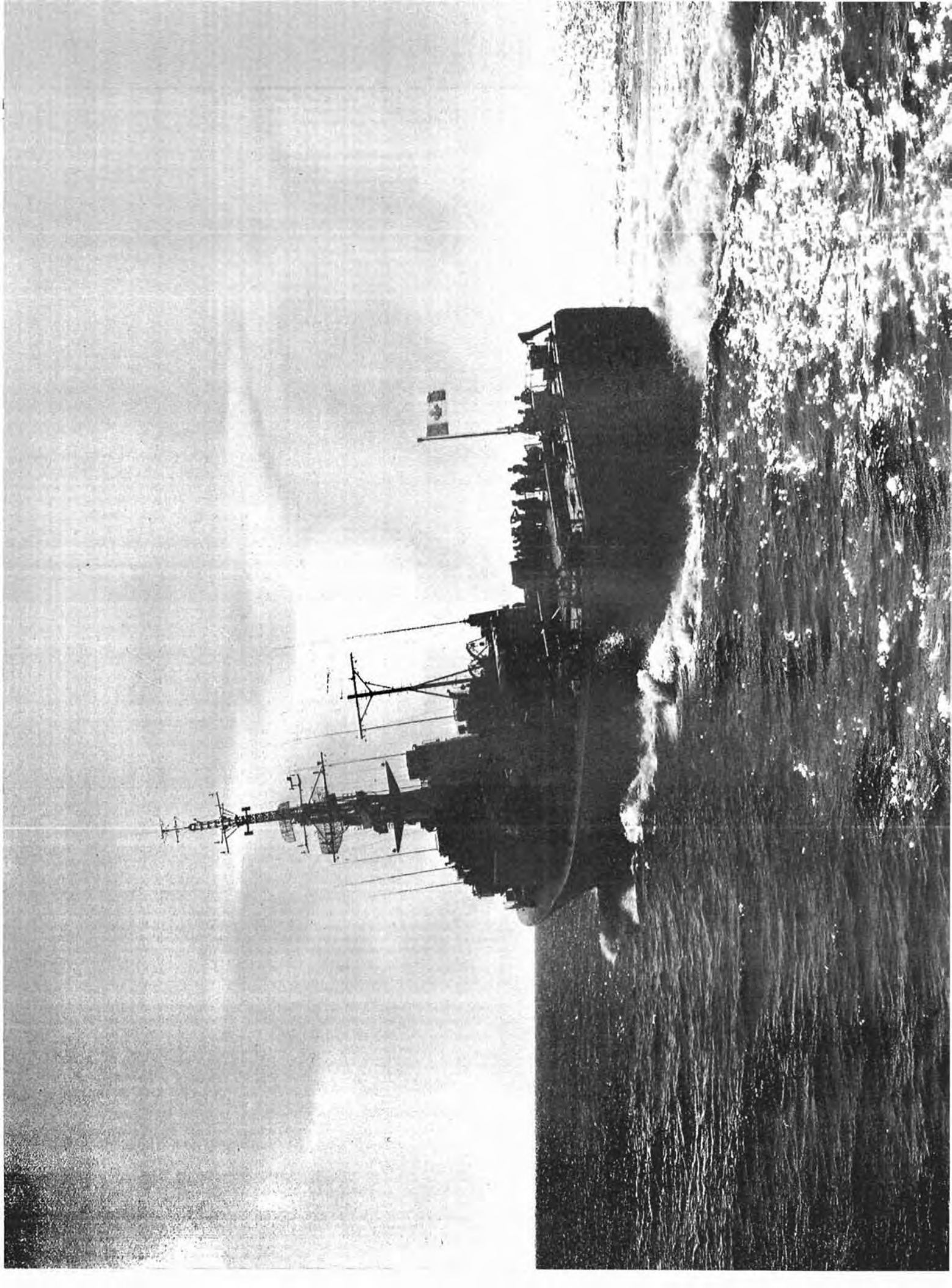


The CROWSNEST





The CROWSNEST

Vol. 17 Nos. 3 and 4

THE ROYAL CANADIAN NAVY'S MAGAZINE

MARCH - APRIL 1965

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The Cover—A new flag was proclaimed for Canada on Feb. 15 of this year. Ships of the Royal Canadian Navy lowered the White Ensign for the last time and raised the new banner whose central emblem is the maple leaf.

OUR NAVY

Since 1959 *Our Navy*, a roundup of information of general interest about the Royal Canadian Navy, has appeared as a special, enlarged issue of *The Crownsnest*. In this issue, as in the previous six, the practice has been followed of reprinting certain articles from the RCN issue of *Canadian Shipping and Marine Engineering News*, Toronto, published each March. Regular departments omitted from this issue of *The Crownsnest* will be resumed with the May issue.

On the opposite Page: The Yukon, recent arrival in the Pacific Command from the East Coast, displays a fine turn of speed and also the new Canadian flag during exercises in the Pacific. (CCC4-1406)

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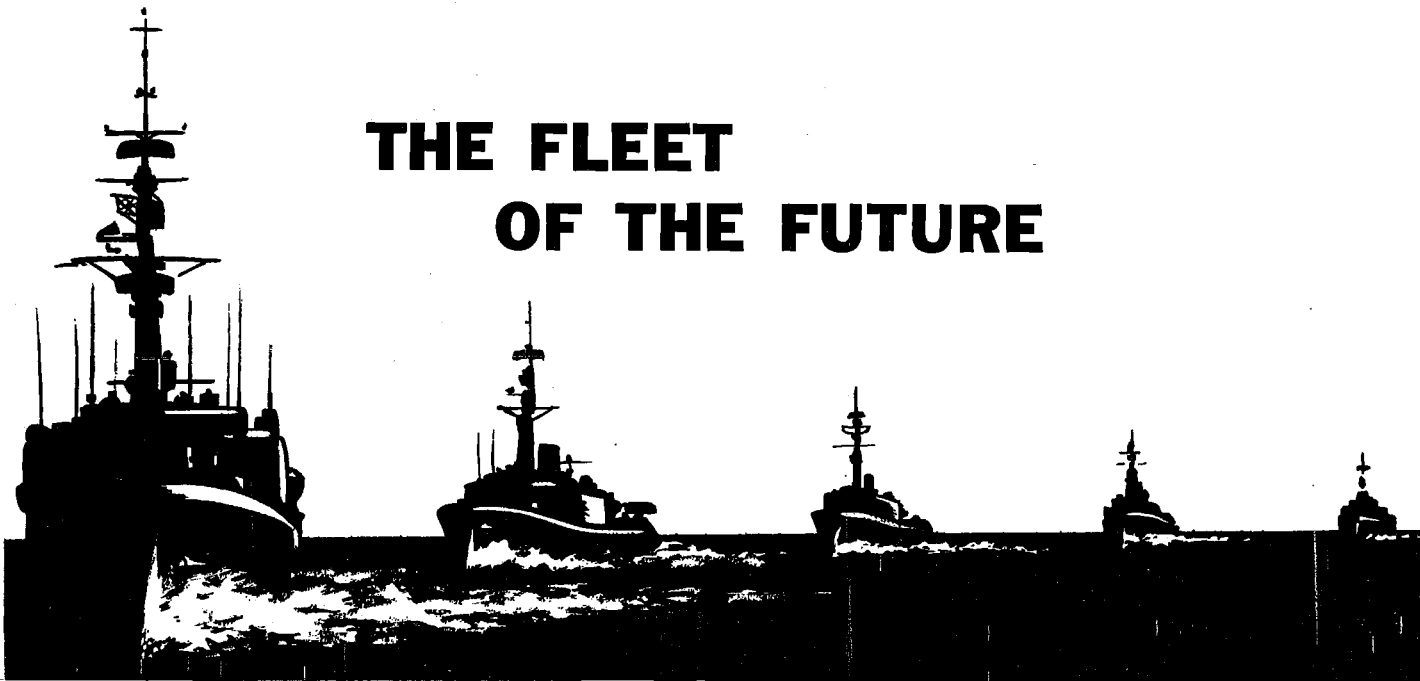
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THE FLEET OF THE FUTURE



THE SHAPE AND SIZE of the fleet with which the Royal Canadian Navy will enter the 1970s emerged in sharpened focus with last December's announcement of the \$1.5 million, five-year equipment program for the armed forces.

The major naval items of the program are:

- Construction of four helicopter-destroyers (DDH);
- Construction of two operational support ships;
- Conversion of the seven Restigouche class destroyer escorts;
- Major mid-life refit and renovation of HMCS *Bonaventure*;
- An additional order for 12 CHSS-2 Sea King helicopters;
- Procurement of a conventional submarine to replace HMCS *Grilse*.

In addition there are some important naval projects which, because they had been approved and announced earlier, were not included in the list.

One is the submarine building program. This is well under way, with the first of three submarines on order in Britain due to commission this autumn at Chatham, England. The other two are scheduled to complete in 1967 and '68.

Then there is the experimental hydrofoil ship, now under construction in Toronto and Sorel, Que. It will be delivered in 1966, then for the better part of two years will be put through extensive trials. On the results of these tests will depend whether production models are ordered for the fleet.

Another item is improvement of the existing Tracker aircraft, to extend their range and fit them with new ASW and navigational equipment.

Also on the future books is a research ship broadly similar to CNAV *Endeavour*, to be based at Halifax for use by the Naval Research Establishment of the Defence Research Board. While it cannot be regarded as a unit of the fleet—it will be civilian-manned, staffed by scientists and unarmed—this ship is expected, through its oceanographic research, to make an important contribution to maritime operations.

To predict precisely the composition of the fleet five or six years hence is impossible. For one thing, as stated in the announcement of the five-year program, changes in the international situation, either for the better or the worse, inevitably would have an effect on Canada's defence planning.

However, assuming there is no dramatic change in the state of world or national affairs, it would appear, from an examination of the present naval lineup and of the current and future programs, that in the early 1970s the Navy will field a team consisting of the *Bonaventure*, with her Trackers and Sea Kings; 24 first-rate anti-submarine destroyers; 13 of them with helicopters; three operational support ships; four submarines, and a few older escorts and other ships for training and support duties. And it may be that hydrofoils will be coming into service or in production.

Numerically the fleet of 1970-71 will be smaller than that of 1964-65. In quality and capability it will be superior.

In its primary role, anti-submarine warfare, the advances will be particularly marked. New detection devices and new weapons systems will extend significantly the distances at which submarines can be found, followed and sunk; the use of operational support ships, to refuel, re-ammunition and re-provision, will increase several times over the number of ships the fleet will be able to maintain on station at sea, and therefore the amount of sea it can cover continuously.

By reducing dependence on shore bases, the operational support ships not only will increase the on-station availability of the fleet but will also make it more mobile, able to travel further and faster without having to put into port.

The fleet will possess also a great flexibility and versatility. The capacity to provide sealift for the Army, a requirement set forth in last year's White Paper on Defence, will be considerably augmented with the addition of the two operational support ships. Together with the *Bona-venture* and *Provider*, they will enable the mustering of a fairly substantial sealift, should the need arise. Another welcome addition will be the five-inch gun to be installed in the helicopter-destroyers. This will restore a shore bombardment and surface action capability that has been lacking in recent years.

Organizationally, there will be changes as well. Up to now, integration of the armed forces has been confined to Canadian Forces Headquarters in Ottawa. However, integration of the field commands is scheduled to start within the year. How they will be organized has yet to be an-

nounced, but if the functional principle is followed, it is conceivable that one of the groupings will be known as Maritime Command. There are already integrated Maritime Commands, consisting of operational RCN and RCAF forces, on each coast. These could be expanded to include all elements concerned with maritime defence, bringing them at the same time even more closely together than they are at present.

Thus in Halifax, where there now are four commands—Maritime Command Atlantic, Atlantic Command of the RCN, Eastern Army Command and Maritime Air Command—there could

The question has been raised as to why the navy has chosen to equip some ASW ships to carry helicopters and fit Asroc in others.

The answer, briefly, is that the one complements the other; combined, they give the navy an excellent mixture of A/S weaponry. The helicopter is primarily for surveillance, search, and tracking and attack. Asroc is an instant-response weapon, one that can be triggered into action in seconds.

The helicopter can emulate the Asroc only if it is airborne and near the target, but there are many things the helicopter can do that the Asroc cannot.

be one command. It would be an operational command and the present support elements would be absorbed by the other newly-formed commands.

This is speculation, but it does appear highly probable that in future defence planning and terminology those forces that serve on, over and under the sea will be known and operated as one.



With a total of 176 years of accident-free driving, 11 civilian drivers of the Motor Transport Section HMC Dockyard, have received safe driving awards and certificates. Commodore E. N. Clarke, Commodore Superintendent Atlantic Coast, (centre) made the presentation, assisted by John Breen, Administrative Officer Atlantic Coast, (fourth from left); and Harold Grant, Supervisor Motor Transport Atlantic Coast, (sixth from left). Shown are: (left to right) Clarence Melvin, Gordon MacDonald, Albert Wheeler, Mr. Breen, Commodore Clarke, Mr. Grant, Herbert Doubleday, Cyril Fraser, Stephen Studley, Earl Kline, Hardy Gates, Roy Bissett and Thomas Low. Each of these drivers has 15, 16 or 17 years of accident free driving. (HS-77408)



TO BE A WREN

CRISPLY PRESSED uniforms of navy blue replaced civilian attire for 26 wrens recruits at *Cornwallis* last autumn.

From all parts of Canada 26 girls entered the beige gates of HMCS *Cornwallis* to begin a nine-week training program which would turn them out as wrens in the Royal Canadian Navy.

Transported from Montreal to Digby, N.S., by train and ferry, then to *Cornwallis* by service bus, the 26 girls entered their new world when they stepped into the Conestoga Block living quarters which would be their new home for the nine-week training period. CPO Phyllis Bayley, a soft-spoken woman who would be their instructor, counsellor and mother for the nine weeks ahead, greeted them at the door.

Their first week is the most hectic of their entire stay at *Cornwallis*, for they must learn a new language and new customs and acquire a speed in doing things which would make any working girl's head spin. Speed is the most difficult thing to develop, according to most of the girls.

In the first week and a half they took numerous tests and examinations. They hurried through a schedule which left most of them gasping for breath. They received preliminary kit issue, medical and dental checks, inoculations and three days of personal selective tests to help them choose the job best suited for them.

During this period they were given indoctrination lectures, initial parade training and had their identity photos

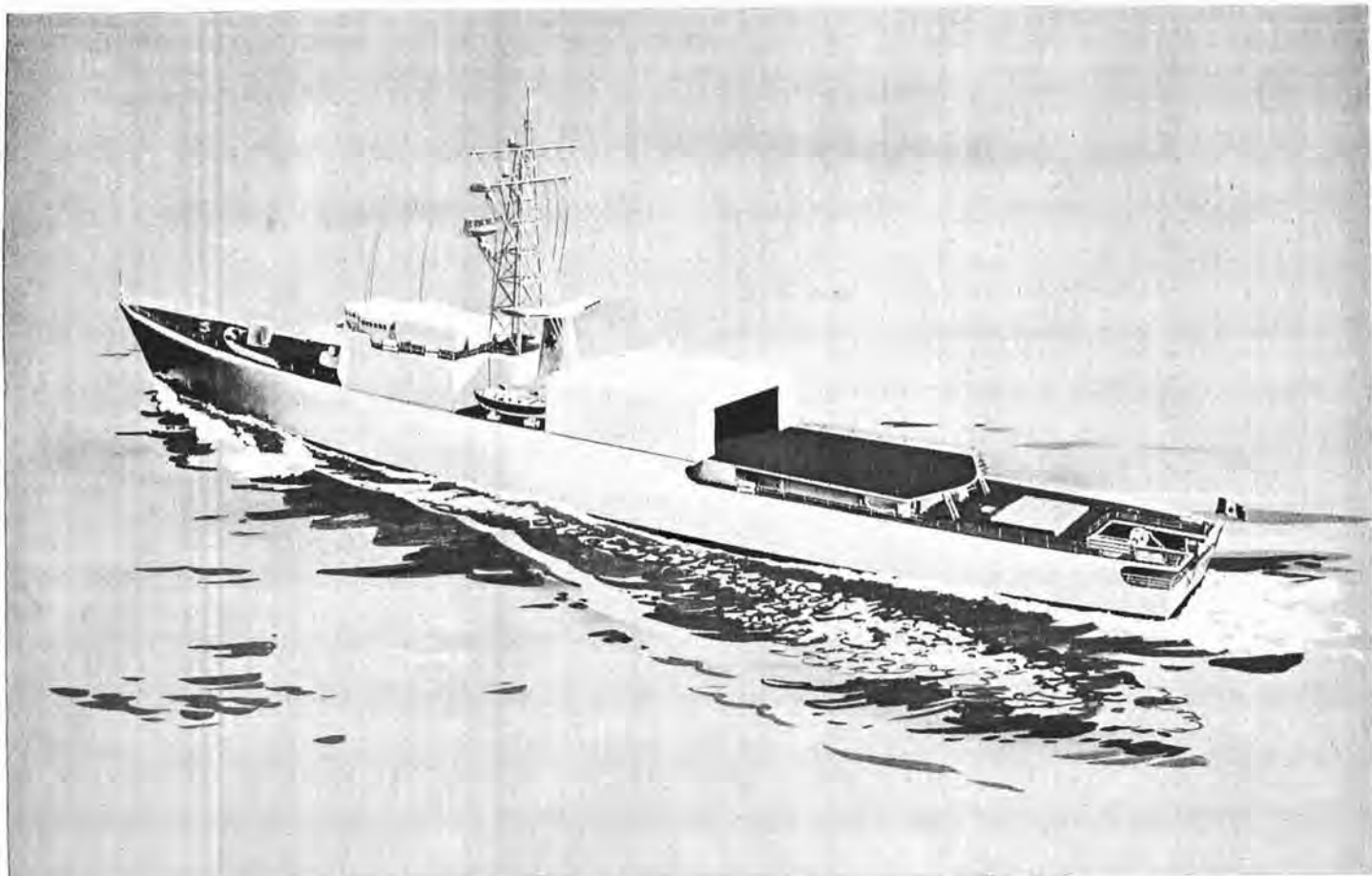
taken. Their evenings were taken up with preparing their uniform clothing for wear and the marking of kit items. During the first few weeks, spare time was non-existent and sound sleep at night was usually assured, for the work load initially is heavy.

Up at 6:30 every morning, they had 20 minutes to wash, get dressed, make their beds and clean their quarters before going down to the galley where the morning meal was served. After breakfast, they attended morning divisions—the daily parade for all new entries at *Cornwallis*, then it was off to classes for the rest of the day, where the new wrens were taught seamanship, naval traditions and customs, naval language and terminology.

The new wrens followed a rough daily schedule of training, lectures, tests and drills until 4 pm and then came sports until 4.45, when they had their supper, after which continued the never-ending task of washing, pressing and shining.

When the wren becomes accustomed to the pace of life at *Cornwallis*, a limited amount of free time becomes available. When such time can be found, *Cornwallis* has a recreation centre, library, movie theatre, snack bar and lounge where all new entries, both men and women, can relax.

New training, new language, new customs all fall into place under the eyes of the *Cornwallis* instructors. The girls have nine weeks to learn—nine weeks to become wrens of the Royal Canadian Navy.



This is an artist's idea of what the new helicopter-carrying destroyers (DDH), four of which will be built for the Royal Canadian Navy, will look like. Particulars of the ship are given in the accompanying article. (CN-6875)

THE NEW SHIPS

Why won't the new helicopter-destroyers planned for the Royal Canadian Navy be made to go as fast as nuclear submarines?

How much will the new operational support ships add to the efficiency of the fleet?

Now that "teething troubles" have been taken care of, how is HMCS Provider working out operationally?

THESE AND OTHER questions were anticipated and answered in a presentation to the Parliamentary Special Committee on Defence by Commodore J. A. Charles, Director General of Force Development, and Commodore S. M. Davis, Director General Ships, on March 25. The presentation dealt with the program for the construction and conversion of ships for Canada's maritime forces.

"Taking into account a normal ship life of 20 to 25 years, it is clear that of our present force only the carrier, 20 destroyer escorts and three submarines will be in operational service in the early 1970s," said Commodore

Charles. "During the life span of these ships there will be continuous technological advances in the weapons of war of all nations. To maintain our present effectiveness against submarines of the future and provide defence against surface and air attacks which can be expected during this period our ships will have to be kept up to date with the most effective fighting equipment that is available."

Included in the five-year equipment program of the Canadian Forces is the plan to build four helicopter carrying destroyers (DDH), a conversion program to improve the ASW capability of the seven Restigouche class destroyer

escorts, which are to be fitted with the long-range, quick reaction anti-submarine rocket weapon known as "Asroc" and a major refit for the aircraft carrier *Bonaventure*.

The primary tasks of the DDH type ship will be hunting submarines and the class will be equipped with the most up-to-date active sonar detection equipment available. This will include the RCN's newly designed integrated variable depth sonar (VDS) and the hull-mounted 505 sonar, plus equipment which will give greatly improved underwater listening capability by monitoring sonobuoys dropped from the ship, helicopter or aircraft. Following are the proposed characteristics of the ship:

| | |
|---------------|--|
| Displacement: | 3,800 tons, full load |
| Dimensions: | 398' x 48' x 14' |
| Guns: | Single 5" gun, LA (provision is being made for future fitting of a short-range anti-aircraft missile). |

A/S Weapons: 1 triple-barrelled mortar Mark X VDS and conventional sonar 2 twin tubes for homing torpedoes.

Machinery: Geared turbines, two shafts; SHP—30,000 = 27 knots.

Range: 4,500 miles at economical speed.

Helicopters: 1 CHSS-2; landing deck equipped with double hauldown and beartrap.

Stabilizers: Flume type anti-rolling tanks to stabilize ship at low speed.

NBCD: Pre-wetting system to counter radio-active fallout; enclosed citadel; bridge control of machinery; automatic combustion control in boilers.

"The question may be asked why we do not make our ASW destroyers go as fast as nuclear submarines," Commodore Charles said in his presentation. "Nuclear submarines are capable of running up to 35 knots. You will appreciate the problem of doing this in a destroyer in the North Atlantic in the winter.

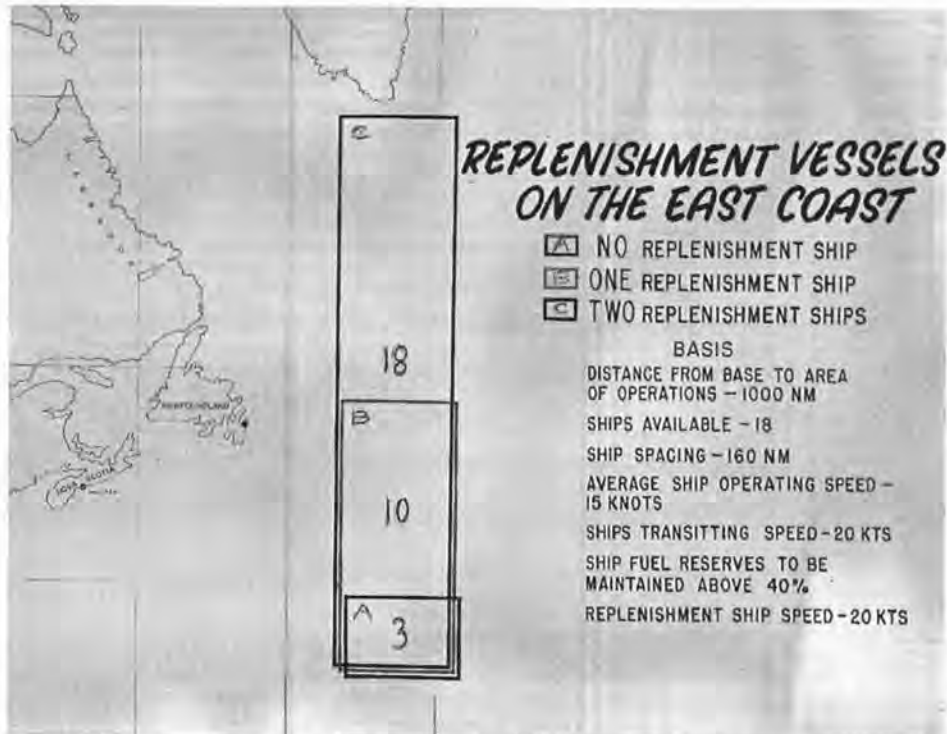
"With a helicopter in a 27-knot ship, we are satisfied that it will be possible for the destroyer to maintain contact with a 25-knot submarine which continues to move at high speed for a period of up to 10 hours, unassisted by outside forces. This would give plenty of time to call in additional assistance if the tasks are simply to track the submarine, or to carry out effective attacks in event of hostilities.

"It may be worth mentioning here that the last thing nuclear-submarine commanders are likely to do is rush along at 35 knots in a tactical situation for any extended period. At any speed over 20 knots they are detectable at extremely long ranges, and, moreover, are blinded by the noise they generate into their own detection equipment. A blind and noisy submarine is a very vulnerable target to any type of ASW force."

How do support ships improve operational ASW ability? Commodore Charles dealt with this in his discussion of the two operational support ships to be built for the RCN.

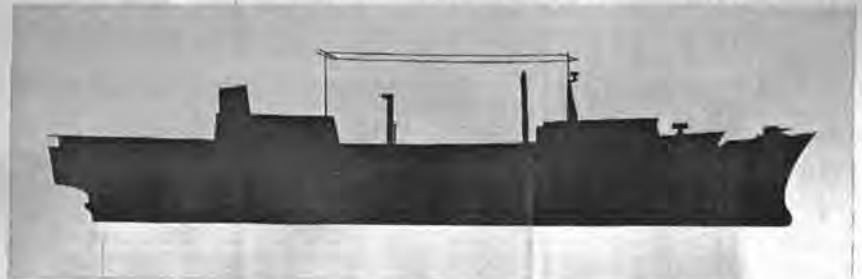
The limiting factor in the time anti-submarine forces can maintain patrol in a surveillance area is the fuel available. Taking the hypothetical case shown in the accompanying chart of 18 ships on patrol 1,000 miles from Halifax, it will be seen that, because of transit time involved and with no on-station refuelling capability available, only three ships can be maintained constantly on patrol and these would give ASW surveillance of the area enclosed in rectangle "A".

If one operational support ship is available for sea refuelling, the number



The effectiveness of operational support ships in keeping warships at sea is illustrated in this chart. See accompanying text for fuller explanation.

OPERATIONAL SUPPORT SHIP



| REPLENISHMENT ROLE | | MILITARY SEA-LIFT ROLE (TYPICAL) | |
|--------------------------------|---------------|----------------------------------|------|
| PETROLEUM PRODUCTS | | ARMY HELICOPTERS | - 2 |
| FURNACE FUEL OIL | - 11,000 TONS | ARMED PERS CARRIERS | - 12 |
| DIESEL OIL | - 450 TONS | SCOUT CARS | - 23 |
| AVIATION FUEL | - 760 TONS | TRUCKS 2½ TON | - 8 |
| LUBRICATING OILS | - 30 TONS | " ¾ " | - 7 |
| AMMUNITION | - 315 TONS | " ¼ " | - 36 |
| REPLACEMENT HELICOPTERS | - 3 CHSS 2 | TRAILERS 1½ " | - 1 |
| STORES | 537 TONS | " ¾ " | - 4 |
| PROVISIONS | 403 TONS | " ¼ " | - 82 |

As will be evident from the silhouette above, the proposed operational support ships have a superstructure considerably modified from that of the Provider, although below decks the type of construction will be much the same.

of ships on station would increase to 10 and the area covered would be that enclosed in rectangle "B".

If two operational support ships are available, 18 ships can be maintained constantly and cover the area within rectangle "C" since one of the support

ships can leave station for new supplies of fuel and food.

One operational support ship based in Esquimalt could maintain the ASW ships at present allocated to the Pacific Command constantly on anti-submarine patrol in Canada's area of responsibility.

To make the maximum use of operational ASW forces, the Royal Canadian Navy requires three operational support ships, of which one is already in existence in HMCS *Provider*.

Included in the design of the new operational support ships are arrangements to embark, transport and unload military equipment and stores needed by a Canadian military force such as the Special Service Force.

This class of ship could carry up to 200 vehicles, depending on the type to be transported, in addition to a considerable tonnage of fuel, ammunition and stores. Such a ship would also provide a self-contained Canadian supply base and medical facility for troops ashore in areas where such services are not available.

So that the ships will have self-protection against small surface craft and air attack, it is intended to fit a 3" gun and to provide for the eventual fitting of the same type of missile system that will be fitted in the new DDHs.

How such a supply ship functions was observed first-hand by Commodore Davis, who described his experience to the committee.

"We have indeed had technical difficulties with the *Provider*," he said, "but these were, in large measure, a reflection of the demanding tasks we have set ourselves. There are very few fleet replenishment vessels in any navy which attempt the demanding and varied replenishment tasks of the *Provider* in such a relatively small vessel. It was, therefore, by no means surprising that we should have a number of technical problems to resolve in ensuring that the equipment, and the men who operate it, meet the exacting standards we are seeking . . .

"I was fortunate to be at sea in the *Provider* during early December in one of the worst Atlantic storms of this century. She behaved splendidly and, shortly after this, still in adverse conditions, refuelled two DDEs simultaneously while proceeding at 18 knots in pouring rain and, ultimately, in darkness. This brings an encouraging sense of achievement."

(The storm to which Commodore Davis referred was encountered by the *Provider* after she had put to sea on Dec. 1, 1964, from Saint John, N.B., where she had undergone alterations to her stern to reduce vibration. As she proceeded out of the Bay of Fundy to the open Atlantic, the barometer reading plunged downward and the weather rapidly deteriorated, with rising winds and seas.

(The wind veered from southwest to west. There was a brief calm and then



Hurricane-force winds buffeted HMCS *Provider* last December but the big operational support ship "behaved" splendidly, in the words of Commodore S. M. Davis, Director General Ships, who was on board and whose picture was taken by Captain T. C. Pullen, then commanding officer of the ship, at the height of the storm.



The *Provider* "hit a milestone" during last December's storm. A few hours later, when the storm had not fully abated, she was steaming along at 18 knots refuelling two destroyer escorts in pouring rain and for part of the time in darkness.



HMCS Provider fuels the aircraft carrier Bonaventure and the ocean escort Cap de la Madeleine. (BN-5523)

the wind struck with a roar, reaching 70 to 80 knots, with gusts to 90.

(Captain T. C. Pullen, then commanding officer of the *Provider*, reported that the ship, running before the storm, rode comfortably, although steering was a challenge. The storm did not abate until the next day.)

Commodore Davis said the operational support ships would be generally similar to the *Provider* below the main deck, but with appreciable changes to

the superstructure, particularly in regard to the provision of additional accommodation and space for army vehicles and equipment.

"We feel that we can cope adequately with the replenishment activities by using four stations in the new ships, instead of the six in the *Provider* and, as you have heard, this will enable us to fit some armament forward in recognition of the Army support role," Commodore Davis said.

The cost of the five-year program was broken down as follows: :

| | |
|--|---------------|
| DDH program (four ships) | \$142,000,000 |
| Restigouche conversion (seven ships) | 65,000,000 |
| Operation Support Ships (two ships) | 36,000,000 |
| <i>Bonaventure</i> improvement and refit | 8,000,000 |

It was pointed out that the overall value of Canadian content in this total program would be about 85 per cent.



SHIPBUILDERS BRIEFED

INTEGRATION has attracted most of the headlines and attention, but changes in the Department of National Defence have extended in other directions as well.

There is, for example, the five-year equipment program for the armed forces announced last December by the Minister and Associate Minister. This was the first time a government had committed itself to such a comprehensive, long-range defence program. It was the first time such a program had been so finely tailored to declared defence policy.

Another significant innovation was the briefing given a month later to members of the Canadian Shipbuilding and Ship Repairing Association on the Navy's new construction, conversion and refit programs.

The briefing panel consisted of Defence Minister Paul Hellyer; Rear-Admiral R. P. Welland, Deputy Chief of Operational Readiness; Commodore S. M. Davis, Director General Ships, and J. C. Rutledge, Director Shipbuilding and Heavy Equipment Branch, Departments of Defence Production and Industry.

The presentation was attended by 15 members of the association, from the west coast, the east coast, the St. Lawrence and the Great Lakes.

The purpose of the briefing, as stated in Mr. Hellyer's letter of invitation, was to flesh out the bare details of the naval portion of the new procurement program and give the shipbuilders a clear picture of what was entailed.

The session included a question period that lasted almost as long as the formal presentation. The question period proved valuable, in that it enabled the shipbuilders to clarify a number of points and elicit additional information

of particular and general interest.

The briefing consisted, in summary, of:

- a listing of the ships planned for construction and conversion and the capabilities it is planned to build into them.
- construction and conversion schedules.
- planned expenditures on new construction and conversions.
- refit schedules for existing ships, east and west.

Out of the briefing came these points (not necessarily in the order of their importance):

- The five-year construction and conversion program will involve an estimated expenditure of \$258 million.
- This is \$8.6 million, or 4 per cent, more than was spent in the past five years.
- Of the total amount, less than half probably will be for building contracts with the shipyards. The rest will go to other industries for machinery, gearing, weapons, radars, sonars and the hundreds of other items it takes to turn out a finished ship.
- The introduction of new and improved weapons systems (including sonars, helicopters, Asroc, torpedoes and other equipment) will increase very substantially the RCN's anti-submarine capability.
- It is estimated 80 per cent of the \$258 million will be spent in Canada.
- Work studies are being carried out in ships now in service, to determine where and how general arrangements and accommodation can be improved.

- Automation will be introduced to a marked degree in new ships. Benefits will include direct bridge control of machinery and a reduction in engineroom staffs.
- The generation of ships succeeding this program is likely to be vastly different in design, machinery and other respects from those ships now in existence or in the advanced design stage.
- Between 1957 and 1965 Canadian shipyards did an average of \$42 million in government business a year. Of this, about 60 per cent was on defence contracts.
- In the six years 1965-70, government business in shipyards for all departments is expected to be at the rate of \$65 million a year. Defence contracts will absorb about 40 per cent of this total.

As was made clear, this was a technical briefing only and there was no discussion of methods of tendering for and awarding of contracts. This will be dealt with by Defence Production Minister C. M. Drury at a briefing planned for later this year.

Speaking for the builders, J. W. Hudson, president of the association, thanked Mr. Hellyer for calling the briefing and expressed appreciation to the minister and other members of the panel for the valuable information provided.

Mr. Hudson termed the briefing an unqualified success. It had given the shipbuilders for the first time a clear picture of what was planned, and why. The department had taken the builders into its confidence as never before. They in turn would be better prepared to do their part when the time came.

MILITARY TATTOO FOR CENTENNIAL

The Canadian Government has approved a joint submission by Secretary of State Maurice Lamontagne and Associate Minister of National Defence Léo Cadieux stating that a large scale military tattoo will be the major contribution by the Armed Forces in Canada's Centennial Celebrations in 1967.

Starting in April 1967 and touring for five months, the Canadian Armed

Forces Tattoo will play to Canadians from coast to coast. The military spectacle will vary in size from 150 to 1,400 officers and men. It will perform both indoors and outdoors and will be one of the feature attractions at EXPO 67 in Montreal and the Canadian National Exhibition in Toronto. Specific playing dates for the tour will be announced as soon as possible.

The Department of National Defence and the Centennial Commission will work in close association on the tattoo

project which will depict by pageantry and music the development of Canada's Armed Forces from the earliest times to the present day.

Although the tattoo will be the major undertaking by the Armed Forces, the department will also make its personnel, equipment, administrative and logistic experience available to assist centennial organizations in 1967. Parades, band concerts, displays and ceremonials are some of the contributions which will be made in addition to the tattoo.

TRAGEDY IN LASALLE - -



Sailors from HMCS Hochelaga, naval firefighters and civilian employees from the Navy Supply Depot worked amid scenes of horror after an explosion destroyed an apartment block in LaSalle, Que., where the naval establishment is located. In the top scene sailors are shown combing the rubble for possible survivors and, below, bodies are being handed up from the basement into which the building collapsed. (ML-15278; ML-15266)

HOW THE NAVY LENT A HAND

NAVAL and civilian personnel from HMCS *Hochelaga* were swiftly on hand to lend every possible assistance when an explosion destroyed a three-storey apartment block in LaSalle, Que., on March 15, with the loss of 28 lives, among them 15 children. Thirty other persons were hospitalized.

"It is felt that the early arrival of the RCN was of immeasurable value," said Commodore M. J. A. T. Jette, Senior Naval Officer, River St. Lawrence Area, in a preliminary report. "They rescued 20 to 25 people, mostly children, from the wreckage at a time when delay could have been fatal."

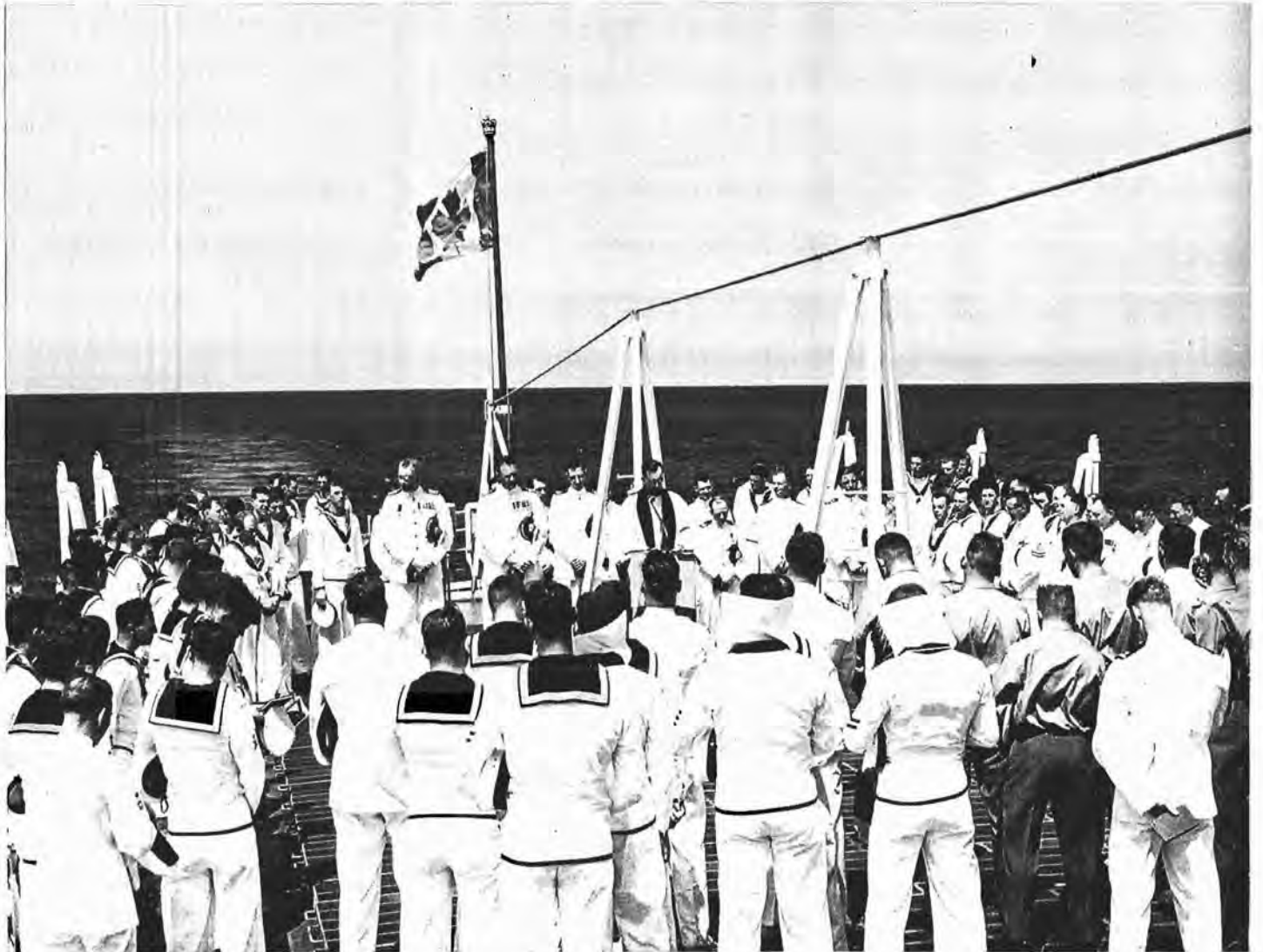
The explosion occurred at 8.12 am and was heard throughout the LaSalle area, where *Hochelaga* is located. The naval fire engine was dispatched almost immediately in answer to a call from the LaSalle fire department.

Minutes later the naval fire chief appealed for help and before 8.30 am a bus left for the scene with 22 seamen. Not many more minutes had passed before *Hochelaga* and the Naval Supply Depot had sent other contingents, composed of more than 200 sailors and 15 civilian employees, who worked under the control of naval officers side by side with civil defence workers and other volunteer helpers.

As time passed, the duties of naval helpers broadened to include crowd and vehicular traffic control and the security of adjoining buildings to prevent looting. By 3 pm large civil defence groups were on the scene and most naval personnel withdrew.

However, an officer and 30 men remained on duty, relieved at two-hour intervals, until the day following the explosion.

The sailors had to work in a jumbled mass of debris, the apartment block having simply collapsed into the basement following the explosion. It was not certain that further explosions might not occur.



With caps off and heads bowed, officers and men of HMCS Yukon participate in prayers during the ceremony which saw lowering of White Ensign and hoisting of Canada's new maple leaf flag on Feb. 15. The destroyer escort and the ocean escorts *Sussexvale* and *New Glasgow* were in California waters at the time, in the early stages of a 10-week training cruise to Central America. (E-79657)

INTEGRATION AT THE TOP

The accompanying article on integration of defence functions at Canadian Forces Headquarters was prepared by Squadron Leader A. T. Paton, until recently editor of Roundel, the RCAF's magazine, for publication in Roundel, The Crowsnest and The Canadian Army Journal.

elimination of duplication, a reduction in manpower of approximately 30 per cent (all ranks) is being achieved.

Over and above the organization depicted in the chart, is the Cabinet Committee on External Affairs and Defence, of which the Prime Minister is chairman. This is the senior civilian policy-making group that gives direction to Canada's defence department. Its vice-chairmen are the Secretary of State for External Affairs and the Minister of National Defence, and its members are all of cabinet rank. Within the Department of National Defence itself the

"IF THE BOSS phones while I'm gone, be sure to get his name," is just one of several quips originated by officers and men in the throes of integration at Canadian Forces Headquarters.

Both organizationally and physically, CFHQ has undergone a series of changes in recent months. Now there is beginning to settle in the conglomeration of buildings at Cartier Square, Dow's Lake, Victoria Island and other national defence locations in Ottawa. Nine months after the reorganization was authorized by the passage of Bill C-90 in Parliament, integration at the top is well underway and should be virtually completed by this summer. Navy, army and air force personnel work together on common problems—not the least of which is making the new machinery run effectively.

Meantime, plans are being drawn up for the integration of commands, which will permit considerable additional financial savings while improving the efficiency of field units. The proposed welding of command structures is designed to thin out non-operational or support elements—not the operational forces themselves.

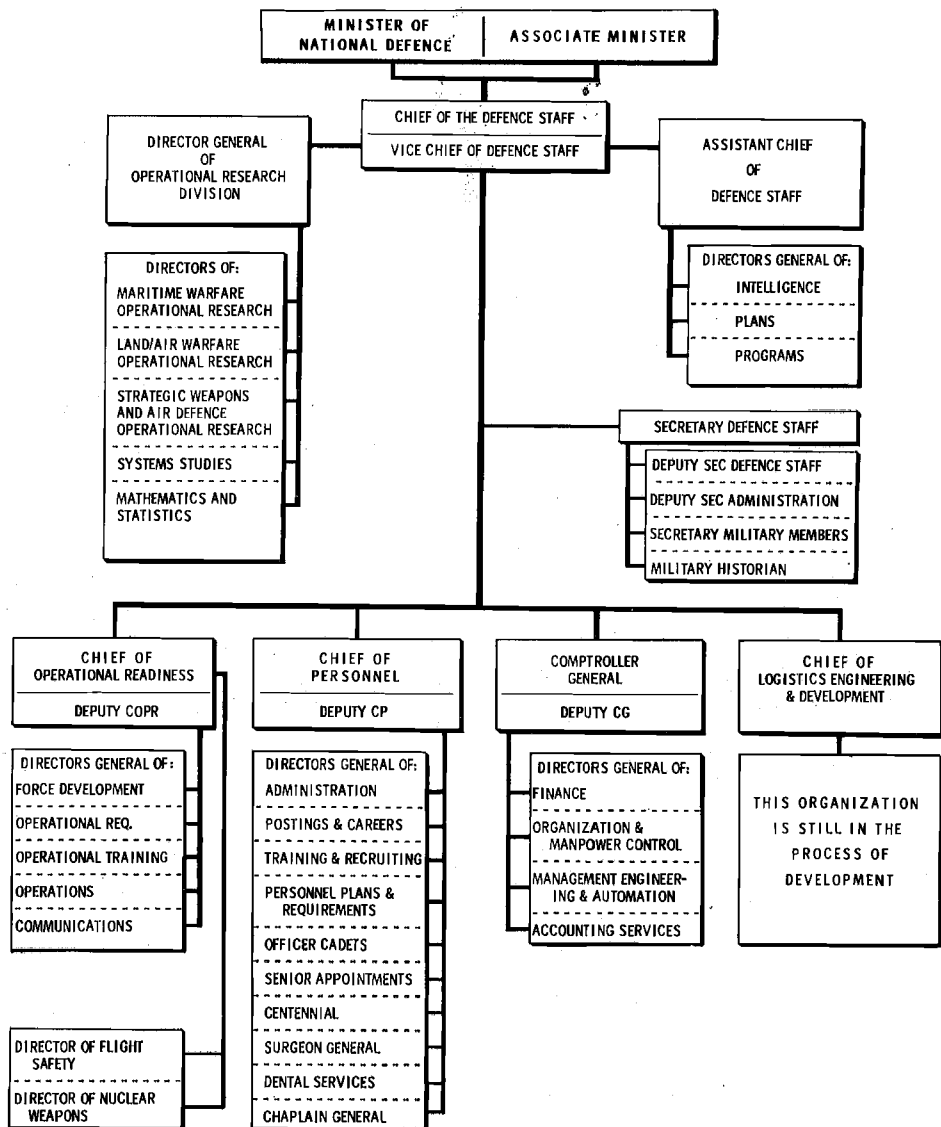
"While it is difficult to predict the time cycle required for the whole process," observed Defence Minister Paul Hellyer in the House of Commons, "It is anticipated that the major elements of integration can take place and the most important savings be effected within three years."

As the reorganization of Canada's defence force evolves, new methods are being developed and new policies established, the object being to take the best from the several systems previously in operation and apply them as a whole. In the case of logistics, for example, this will mean combining the existing automated system of the RCAF and the manual systems of the three services into a new highly automated system, to handle the whole gamut of the supply operation.

So far, with a few exceptions (such as public information services), this process has been confined to the Ottawa scene. Here, by the creation of the functional organization depicted in the accompanying chart and the consequent

CANADIAN FORCES HEADQUARTERS

(This Chart is subject to change)



highest such body is the Defence Council.

Replacing the three-service hierarchy formerly existing at National Defence Headquarters is a single senior group consisting of six military members to assist Air Chief Marshal Frank Miller, Chief of Defence Staff, in making decisions on matters of military policy, major programs, broad courses of action and control of major activities.

These members, whose specific areas of responsibility are detailed in the chart, are: Lieutenant-General Geoffrey Walsh, Vice-Chief of Defence Staff; Lieutenant-General Jean Victor Allard, Chief of Operational Readiness; Vice-Admiral K. L. Dyer, Chief of Personnel; Air Marshal Clare L. Annis, Chief of Logistics, Engineering and Development; Lieutenant-General Robert W. Moncel, Comptroller General, and Air Vice-Marshal Wilfred Bean, Assistant Chief of the Defence Staff.

This Defence Staff meets regularly to provide the major policy guidance which the CFHQ functional branches or field commands need to discharge their responsibilities. Sponsorship of items dealt with in their meeting may come from above or below. For instance an item under discussion could be a direction from the minister to carry out a particular action, or it could be a matter brought up by one of the military members from his branch. If the subject requires concurrence or direction from a higher authority it is referred up either to the Defence Council or the minister.

Responsibility for ensuring that current projects progress to completion in a specific manner and that problems affecting more than one branch are reconciled quickly rests with the Vice-Chief of the Defence Staff, who performs a vital co-ordination function in the implementation process.

The Defence Staff Secretariat, headed by Brigadier R. L. Purves, and coming directly under the CDS, formulates and co-ordinates the administrative processes, ensuring that the CFHQ machinery doesn't get clogged in red tape. The Secretariat is responsible for the collection and distribution of information to and from the above-mentioned committees and the pertinent functional branches, and monitors follow-up action on policy decisions.

When the new organization was set up last summer, CFHQ was still functioning at the lower levels under the separate services organization. The task was to mobilize the newly-integrated branches to take over as quickly and smoothly as possible their assigned tri-service roles, ensuring that the head-

quarters continued to function day by day. Naturally, numerous large and small problems confronted those charged with moulding the "new look" (for instance, it was discovered that navy, army and air force each had a different definition for the word "program"). Happily, many obstacles which seemed difficult to surmount six months ago have miraculously disappeared as integrated staffs got to know each other better.

Some functions were more easily brought together than others and thus the changeover from the old to the new organization has not been at a constant rate. For example, special problems pertaining to the logistics and engineering branch still exist, making progress in this area slower than it has been in the integration of the other branches.

The evolution process may best be described by citing one particular branch (Personnel) which affects the service lives of everyone in uniform. Last August when Vice-Admiral Dyer became Chief of Personnel, there already existed in Ottawa a Chief of Naval Personnel, Adjutant-General and Air Member for Personnel—each with staffs whose functions more or less ran parallel. These included personnel policy and administration, manning, postings and careers, chaplaincy services, training and welfare. Some areas were not common to all three. For instance, naval and air force individual training came under the CNP and AMP respectively, whereas all army training was under the Vice-Chief of the General Staff.

Today the integrated personnel branch is organized and operating. As in all branches, the directors general are at the brigadier or equivalent rank level. Below the DGs come directors, who are of colonel rank, and sections heads of

lieutenant-colonel level. (For the sake of uniformity, army nomenclature is used throughout in referring to CFHQ establishments and organization charts. In every case, this means "or equivalent" navy and air force rank. A comparison of service ranks and insignia appears in this issue.)

When the process of integration is completed, the total personnel establishment at CFHQ will be 70 per cent of the previous establishment. The reduction will be made mainly by not replacing those who reach retirement age or are retired for medical reasons. For a few, however, it means premature retirement and an earlier-than-expected return to civilian life. Those prematurely retired receive a cash gratuity and normal retirement benefits.

Despite the reduction, the services still need large numbers of recruits. Because the structure of the armed forces is being changed, a small percentage of men must be released before retirement age to give the reorganized forces the right balance in rank and trade structure, and to allow a healthy rate of promotion. But because over the next two years some 24,000 men will leave the service—the vast majority on reaching age limit—the services will need to enlist approximately 9,000 young men each year. That's why there has been no let-up in recruiting.

To quote from the *White Paper on Defence* published in March 1964:

"The total savings to be effected as a result of such reductions will make available funds for capital equipment purchases, and eventually make possible more equitable distribution of the defence dollar between equipment and housekeeping costs."

The first large step towards achieving this aim has been taken.



The Canadian Armed Forces Recruiting Centre in London, Ontario, the city's first example of Canadian Forces integration, was officially opened on Dec. 15, 1964. A red, white and blue ribbon was cut in a brief ceremony by Group Captain C. R. Knowles, Director of Recruiting for the Canadian Forces. The Recruiting Centre is staffed by representatives of the three services. They are Lt. W. H. Aveling (Navy), Lt. R. Salisbury (Army), and Flt. Lt. J. Allingham (Air Force). Attending the opening were Brig. W. S. Murdock, Commanding Officer, Western Ontario, and Lt.-Cdr. W. J. Pearce, of Ottawa, naval member of the director's recruiting staff.

ABOUT RANKS

MEMBERS of the Canadian Forces are working more closely together than ever before. Hence a general knowledge of the workings of the other branches becomes of increasing importance. In this regard, knowing relative ranks and insignia is elementary, but it is not exactly straightforward.

For instance, a sailor may feel superior in the knowledge that "captain" can be a position (the commanding officer of a ship or naval establishment) or a rank three steps above the army rank of the same name and that the naval rank is on an even keel with the air force's group captain. He is familiar with such terms as captain of "B" gun or the maintop and he will also know that a naval lieutenant is at the same level of rank as an army captain.

What may bother him, however, is that, while a major is senior to an army lieutenant, a lieutenant general is senior to a major general. This goes back to the days when the king was the commander-in-chief of the army. The cavalry—the elite corps of those days—was composed of the mounted knights and lords, commanded by a lofty personage, perhaps a prince or duke, who was known as the lieutenant (i.e. assistant) general, while the foot soldiers, commoners all, were commanded by a sergeant-major general. Somewhere along the line the "sergeant" part of the title was dropped. And in modern times the Canadian Army has dropped the term "sergeant-major" to describe a rank, although retaining it to indicate a position held by a WO2. Similarly a WO1 (warrant officer, first class) may be referred to in certain circumstances as a "regimental sergeant-major", although the RSM has also disappeared from the rank structure.

It is to be noted that able seaman has no rank badge, although his opposite numbers in the other services, lance corporal and leading aircraftman, do. Soldiers and airmen will have to get used to the fact that the chevrons on a sailor's sleeve do not indicate rank but are, rather, good conduct badges. It is also worth remembering that there is no "s" in "aircraftman", the word deriving from aircraft rather than craftsman.

The Air Force, in general, follows the Army pattern for "other ranks" and the Navy pattern for officers. Even where

names of equivalent ranks closely correspond, however, there may be differences. For instance, a commander in the Navy is a "brass hat", with a row of oak leaves on the peak of his cap. In the Air Force, the oak leaves are for group captain and above.

The "vices" and "rears" in the sea and air services are a bit bothersome. Thus a rear-admiral is the equivalent of an air vice-marshal, and a vice-admiral corresponds to an air marshal.

In the accompanying chart it will be noticed that shoulder boards are not shown for the Air Force, although they are worn with certain types of uniform and on greatcoats. This is because the sleeve insignia is repeated on shoulder

boards for all ranks of officers, which is not the case with rear-admiral and above in the Navy.

Other terms of rank which do not appear on the chart will be encountered from time to time. For instance, a bombardier is a corporal in the artillery, while sapper, gunner and craftsman are other army terms for the rank of private.

The ranks form just a small part of the military vocabulary. Members of the Canadian Forces will find themselves embroiled for a time in a welter of unfamiliar terms which should eventually simmer down into a wider sympathy for and comprehension of the strange ways of the other services.

| OFFICERS' RANK INSIGNIA | | | | | | | | | | | |
|-------------------------|------------------------|-------------------|-------------------------|-------------------------|--------------------------|-------------------------|---------------|------------------|--------------------|-------------------------------|----------------------|
| NAVY | | | | | | | | | | | |
| | Acting Sub Lieutenant | SUBLT or COMD OFF | Lieutenant | Lieutenant Commander | Commander | Captain | Commodore | Rear Admiral | Vice Admiral | Admiral | Admiral of the Fleet |
| ARMY | | | | | | | | | | | |
| | Second Lieutenant | Lieutenant | Captain | Major | Lieut. Colonel | Colonel | Brigadier | Major General | Lieutenant General | General | Field Marshal |
| AIR FORCE | | | | | | | | | | | |
| | Pilot Officer | Flying Officer | Flight Lieutenant | Squadron Leader | Wing Commander | Group Captain | Air Commodore | Air Vice Marshal | Air Marshal | Air Chief Marshal of the RCAF | Marshal of the RCAF |
| OTHER RANKS | | | | | | | | | | | CADETS |
| NAVY | | | | | | | | | | | |
| | Able Seaman (no badge) | Leading Seaman | Petty Officer 2nd Class | Petty Officer 1st Class | Chief PO 2nd Class | Chief PO 1st Class | Naval Cadet | | | | |
| ARMY | | | | | | | | | | | |
| | Lance Corporal | Corporal | Sergeant | Staff Sergeant | Warrant Officer Class II | Warrant Officer Class I | Officer Cadet | | | | |
| AIR FORCE | | | | | | | | | | | |
| | Leading Aircraftman | Corporal | Sergeant | Flight Sergeant | Warrant Officer Class II | Warrant Officer Class I | Officer Cadet | | | | |



A member of Dr. Geoffrey Hattersley-Smith's party, with stores and equipment loaded on sleds, prepares to move to a new position in the Nansen Sound area for further scientific data.

ARCTIC OCEANOGRAPHY



A bathythermograph slide is inserted before recording water temperature at varying depths. In the background is Vanhauen Pass, a valley which links Otto and Hare Fiords off Nansen Sound.

BECAUSE few reconnaissance surveys have been made of the waters of the Canadian Arctic Archipelago, oceanographic knowledge about this vast area is somewhat limited. Many of the seas and passages remain oceanographically unexplored, and observations at regular intervals have hardly begun anywhere within this region.

To obtain needed information and to encourage a scientific investigation in the area, the Defence Research Board is engaged in promoting systematic studies in particular fields and, in fact, began a continuing series of geophysical and terrain studies in Northern Ellesmere Island in 1953.

These investigations were concentrated on the north coast of the island during that year and the following year, and were concerned mainly with the ice shelf, the source of floating ice islands from which valuable geophysical data on the Arctic Ocean have been obtained.

From 1957 to 1962, during and after the International Geophysical Year, geophysical studies carried out by Dr. Geoffrey Hattersley-Smith, of the Defence Research Board, and his associates were centered on Lake Hazen, the continent's northernmost large lake. The DRB has published a large number of

reports and papers analyzing the data obtained in meteorology, climatology, glaciology and allied fields.

Oceanographers point out that studies of the Archipelago's heat budget, for example, are important for the further development of ice forecasting, as well as for the practical application of bubbler or pump systems for maintaining open or semi-open pools of water. Reliable oceanographic data are necessary for planning anti-submarine defences and are especially important in relation to underwater or under-ice acoustic systems.

Since 1963, the DRB geophysical studies have been centered on Tanquary Fiord with new emphasis on oceanography. The Tanquary base camp, also established by Dr. Hattersley-Smith and his associates, is particularly well situated for air and sea support of the board's current, well-rounded geophysical program. Already it is adding significantly to the basic knowledge upon which Canada's defence capability in the Arctic must be founded.

In the Nansen Sound fiord system, at the head of which the base camp is situated, there existed only a single track of soundings up until 1962. After off-

loading material and supplies for the camp that year, however, the CCGS *John A. Macdonald* took oceanographic stations and made extensive track soundings in the area. During the following two years, DRB field parties established a total of 28 oceanographic stations over the length of the fiord system and its various arms, six stations off the Ward Hunt Ice Shelf and 26 at the head of Tanquary Fiord.

As a result of this concentrated activity, a general picture of the oceanography of the area of undoubted value to the Royal Canadian Navy has now emerged. The observations obtained represent an unusual and valuable foundation of time-series data which should be built upon in the future.

In oceanography, therefore, investigations are beginning to move from the reconnaissance phase and it is now possible to point to specific problems requiring more detailed study.

In sea ice, meteorological and glacier studies, sufficient background information was available at the start for the work to be concentrated on specific problems. In the sea-ice investigations detailed and refined measurements have been made of the heat exchange be-

tween the ocean and atmosphere through a cover of sea ice.

In meteorology, special emphasis has been placed on measurements of radiation and wind patterns, as well as on routine general observations.

In glacier research, in association with a National Research Council-supported group from the University of New Brunswick, three projects were undertaken. Field work was completed for the terrestrial and aerial photogrammetric mapping of the Otto Fiord glacier, which has made a remarkable five kilometre advance since 1950, with calving of many icebergs into the fiord. The third project involved measurements to determine the strain rate on the Ward Hunt Ice Shelf, the results of which may well have an important bearing on the mechanics of ice deformation.

All these scientific investigations in the Archipelago are providing increasingly useful defence information. Ultimately, the data obtained may well prove of commercial importance, if for example oil is proved in the area of Eureka and Nansen sounds and if methods are perfected to ship oil economically to markets.



An ice auger is unloaded preparatory to bathythermograph operations off Nansen Sound. The wheel-like odometer at the rear of the sled permits the exact measurement of distance travelled.

Corvette

By

E. C. Russell,

Naval Historian

During the Second World War, the Navy commissioned artists to record impressions of Canada's war at sea. The author's selection of works here presented shows how very well those artists caught a variety of moods in both the corvettes and the men who sailed in them.

With the exception of the Baillie picture, these photographs are of paintings and sketches in the War Records Collection of the National Gallery of Canada, Ottawa.

WHEN THE *Windflower* steamed into that "Eastern Canadian Port" on the last day of October 1940, Haligonians could be excused for thinking she was a displaced whaling ship from the Antarctic. Built by the "Big Davie" yard in Lauzon and the first corvette to join the Fleet, her ancestry was strictly whale-catcher. In the economic and tactical conditions of that day, it seemed reasonable to believe that a ship that could catch a whale could also catch a submarine.

After Munich, there were a few men in Britain who went to work with a will to try and make up for the neglect of one of her vital defences—convoy escort anti-submarine vessels. Such ships had to be small with good manoeuvrability and acceleration. They had to be able to cope with any kind of weather the North Atlantic should choose to throw at them. They had to have the kind of transatlantic endurance demanded by a zig-



BROOKS

ATLANTIC CONVOY

"When we're rolling outward bound from Newfoundland."



BAILLIE

CANADIAN CORVETTE

"And how the quartermaster just loved a quartering sea!"

zagging 80-ship convoy, perhaps under submarine attack for five days, perhaps hove-to for another three in a mid-ocean gale.

The other war was 20 years past and most people had forgotten how close to disaster the Kaiser's U-boats had brought them. But there were others who knew that should war come, convoys would have to be organized from the outset, and for effective convoy there must be large numbers of trawler-type ships to team up with the faster costlier and weather-vulnerable destroyers.

It was early in 1939 that the man who had developed the new whalecatcher design was called to the Admiralty. This was William Reed, head of the firm of Smith's Dock Co. Ltd., of Middlebrough up in Yorkshire. With war clouds ominously gathering from over the North Sea, Reed and the Admiralty constructors worked feverishly to get this new kind of fighting ship



McNALLY

KYE

"... and that hot cup of kye sure went good about the end of the First Watch."



WOOD
 QUARTERDECK, DRUMHELLER AT SEA
"It's no wonder your socks seemed forever wet!"

from the drawing boards out into the Atlantic. Before the war was a year old, the first British naval whale-catcher, now called a corvette, was shepherding merchant ships in the Narrows Seas; and here was the Canadian-built *Windflower* steaming in past McNab's and George Islands to secure in HMC Dockyard not six months behind her British opposite number.

Yes, there she was, all 205 feet of her, single funnel, rather straight-stemmed, not exactly a beautiful creature with her distinctively turned-up stern and almost flareless bow. But, for all that, a stout little ship that seemed to have a grip on the water and the promise of being a tight ship if her company should find themselves in a tight spot.



MacKAY
 THE LAST DOG WATCH
"Red One Five, an object . . . submarine!"



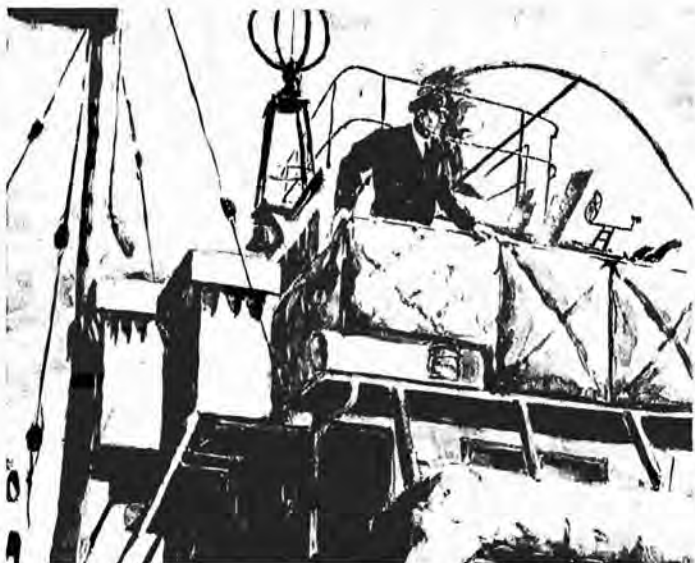
WEYMAN
 MESS DECK 1943
"Did you ever try to get your head down with a lively game going full bore right under your mick?"

The *Windflower* was the forerunner of 107 corvettes; 14 were built on the West Coast, three at Saint John, 41 on the Great Lakes and 49 in St. Lawrence River yards. All of them were commissioned in the Royal Canadian Navy and 15 more were built in Canada for service in the British and United States Navies.

There were many factors that made this program possible in a community of some 12 million people; a dynamic leadership given by government departments under men like the late Angus L. Macdonald and C. D. Howe; a magnificent spirit of co-operation by shipping and manufacturing firms; unstinted effort by leaders in industrial, scientific and university life, often with little or no remuneration; the day-to-day grind of the men



WOOD
 THE BOARDING OF U-744
"It was always our ambition to bring 'one home in prize."



MACKAY

LET GO AFTI

"Another 20 days 'll see us in 'Derry!"



BEAMENT

MOONLIT CONVOY

"Just like keeping the wolves from the sheep."

and women in the factories, and the sense of dedication of the officers and men who took those corvettes to sea. But from a strictly technical viewpoint that program of building and fitting out 122 corvettes, together with the mighty stream of minesweepers, frigates, Fairmiles and auxiliary vessels that followed, was indeed one of the wonders of the Second World War.

Aside from the wooden drifters and steel trawlers of 1917-18, no warships of any consequence had been built in Canada since the sloops *Halifax* and *Plumper* in the Halifax of Nelson's day and those that saw service on the Great Lakes in the first part of the 19th century.

It was recognized when they were built, that the corvette would never become a type-ship of the future post-war fleet. She was being built for little more than half a million dollars to do a specific job—to get to Europe the fuel, food and munitions without which no aircraft could fly, no soldier could fight and no ship could steam, and, without which Britain could not survive. Reduced to simplest terms, it was as simple as that.

The corvettes were in fact a stop-gap—"hostilities only" if you will, very much like the "wavy-navy" RCNVRs who largely manned them. But there is no doubt that, until the frigates came along late in the war,



BROOKS

SIGNAL STATION, HALIFAX

"Those so-and-so signalmen used to line up the best dates with the wrens in the signal tower before we could get ashore."



LAW

PAYING OFF AT SYDNEY, 1945.

"Many a time you had gaily turned your back on her for a good run ashore, but this was it and, after all the blows she'd brought you through, it was kind of hard to leave her."

the corvettes, British and Canadian, were the backbone of the mighty effort that eventually achieved victory in the Battle of the Atlantic.

Nor should it be forgotten that the corvettes of the RCN did a splendid job when the United States Navy was so hard-pressed in the Caribbean right after Pearl Harbour, and away up on top of the world off the Aleutian chain.

And 16 of them did their bit in the Mediterranean when Rommel was invited to leave Africa. In fact, Admiral Cunningham had great admiration for what he called the "hat trick", when the *Ville de Quebec*, *Port Arthur* and *Regina* in as many weeks single-handedly disposed of three submarines in the clear waters of that fabled sea. All told, 17 Canadian corvettes had a hand in sinking 15 enemy submarines and in damaging scores of others.

But with the successes and the victories there were the inevitable losses of war: the irretrievable losses of good ships and good men. Because the corvette was small, because the enemy weapon was usually the torpedo meant for larger ships, and because the waters of the vast wastes of the North Atlantic are notoriously cold, the cost in seamen was tragically high.

Our lead ship, HMCS *Windflower*, was lost by collision, the *Weyburn* by mine off Gibraltar. The others went down by torpedo explosion, some very quickly,



BROOKS

CORVETTE GALLEY

"Sometimes hot, sometimes cold, and sometimes none at all!"

some giving their men a few minutes to go over the side: the *Levis*, *Spikenard* and *Charlottetown*; the *Louisburg*, *Regina* and *Alberni*; the *Shawinigan* and *Trentonian*.

There was a great challenge back in 1939 and Canada's corvettes, and the officers and men who sailed in them, met that challenge squarely, just as had the men and women who designed and built them.





CNAV Endeavour, the first oceanographic survey ship to be built for the Department of National Defence, was accepted March 9 at Yarrows Limited, Victoria. The Endeavour is 236 feet long, displacing 1,560 tons, has a bulbous bow to reduce pitching, a transom stern and a fairly high rise of floor plate along with considerable flare above the load water line. She has roll reduction flume tanks and her two diesel electric motors can drive her 10,000 miles at 12 knots. She has a helicopter flight deck. Hitherto the defence department has used warships converted to the scientific role. (DRB Photo 4381-1)

ENDEAVOUR

THE OCEANOGRAPHIC research ship CNAV *Endeavour* was accepted by the Department of National Defence from Yarrows Ltd. shipyards in Victoria, on March 9.

The new vessel, designated AGOR 171, is the fourth open-water maritime research ship designed and built in Canada and the first for the DND. Scientists from the Pacific Naval Laboratory, Pacific Oceanographic group, the Institute of Oceanography of the University of British Columbia, and the Department of Mines and Technical Surveys will all use the *Endeavour*. Facilities for research in underwater acoustics, geomagnetics, submarine geology and physical, chemical and biological oceanography are provided on board.

For many years the RCN has been concerned with the difficult problems of anti-submarine warfare, and significant advances have been made in this highly specialized field. But the advantages

gained by surface and air forces have been countered by the advent of the nuclear submarine, and the task of locating and destroying it has become increasingly complex.

In recognition of those problems, the Defence Research Board, the Pacific Naval Laboratory and the Naval Research Establishment (all of whom are involved in ASW research and developments) will now be able to increase the scope of their studies. This will include research in underwater detection techniques, target identification and classification, underwater communications, noise reduction and ASW weapons systems.

The *Endeavour* was designed and built from the keel upward with the aim of providing the most comfortable seagoing platform for the scientists who will work in her. Among the features incorporated for this purpose by her RCN designers are a bulbous bow to dampen pitching motions, and a system

of passive anti-rolling tanks for stabilization of roll in waves. To maintain constant draft, a water compensating arrangement is provided in the fuel system so that as the diesel fuel is consumed, it is displaced by sea water. During bunkering operations, the opposite takes place.

The *Endeavour's* principal characteristics are:

| | |
|--|----------------|
| Length over-all | 235 ft. 10 in. |
| Breadth molded | 38 ft. 6 in. |
| Depth molded to upper deck . | 20 ft. |
| Draft, loaded | 12 ft. 10 in. |
| Shaft horsepower | 2,900 |
| Speed: maximum | 16 knots |
| cruising | 12 knots |
| Range, cruising | 10,000 miles |
| Complement: 36 crew, 14 scientists, 2 helicopter personnel | |

Two large scientific laboratories are provided in the main deck house with a dry laboratory primarily intended for electronic instrumentation and the wet lab for oceanographic work. Considerable measures have been adopted

to reduce internal ship's noises and vibrations to a minimum. Those steps include the seating of all machinery and auxiliaries on resilient mounts, and sound-insulating gasketing of piping and trunking, in addition to widespread use of acoustic insulation and linings.

The vessel is powered by two propellers, each driven by a dc shunt-wound motor of 1,450 hp at 223 rpm. The motors are 750 volts, connected in series with diesel-driven propulsion generators for a constant-current control system. The generators, like the motors, were made by Canadian General Electric and are rated at 1,150 kw., 825 rpm, 750 volts. Each generator is powered by a Canadian Fairbanks-Morse nine-cylinder, two-stroke opposed piston marine diesel engine, each developing 1,720 bhp at 825 rpm.

For continuous operation at slow speed, as required in research work, an auxiliary propulsion diesel generator set composed of a Cummins diesel is coupled to a CGE generator rated at 140 kw, 400 volts dc, 1,800 rpm.

The propulsion plant is controlled by a Westinghouse system from four positions: control flat in motor room; wheelhouse; bridge wings; and crow'snest.

Two 300-kw, 450-v main ship's CGE generators, powered by Cummins VT-12-G diesels, are fitted with a 45-kw, 450-v. CGE generator, driven by a Cummins NHC-4-G, for standby duty. In addition, two 20-kw 115-volt generators

are provided for scientific services; one of them is mounted on a floating raft in the silent-running generator room for use with all other equipment stopped.

Steering gear is a Brown rotary vane electro-hydraulic system (twin rudder link type), automatically controlled by a Sperry gyro compass. The system also allows for full follow-up hand steering from the wheelhouse, and non-follow-up from bridge wings and crow'snest.

Deck equipment includes a hydraulically powered five-ton articulated crane for handling scientific equipment, bathythermograph winches, deep sea coring winch, and accumulator davits.

A helicopter will be carried, with landing deck aft and a telescopic hangar.

All accommodation spaces, labs, workshops, wheelhouse, chart and radio rooms have air conditioning by means of a Norris high-velocity system. To service this, there are two automatic central air-conditioning plants fitted with preheaters, cooling coils, filters, fans and controls. Reciprocating type compressors operate with a cooling medium of Freon 12 refrigerant and additional temperature control is exercised through electric heaters in the attenuator box of each space served, controlled by individual thermostats.

The completely modern navigational and communication equipment includes Marconi radio, navy-type VHF transmitter-receiver. Lodestar DF, Sperry

Loran and gyro-compass pilot, two Decca radars, and Sperry underwater log. There are numerous items of electronic research equipment, such as the Edo sonar AN/UQN which can sound depths to 6,000 fathoms and can be coupled with the Alden precision depth recorder for very accurate soundings.

The *Endeavour* is the second ship built by Yarrows Ltd. for oceanographic research, the first being the Fisheries research vessel *G. B. Reed*. Together the two vessels place Canada in a leading position among the nations engaged in Pacific Ocean research work.

The formal delivery of the *Endeavour* took place at the Yarrows plant on March 9, in the presence of some 150 specially invited guests. Among them were His Honour George R. Pearkes, Lieutenant-Governor of British Columbia; Hon. W. A. C. Bennett, premier of the province, and David W. Groos, MP, representing the federal government.

The guest list also included senior officers from the Department of National Defence, Canadian and U.S. scientific organizations, other government departments, and representatives of the West Coast shipbuilding industry. Representing the department was Dr. George S. Field, vice-chairman of the Defence Research Board, and Commodore S. M. Davis, Director-General (Ships), on the staff of the Chief of Logistics, Engineering and Development.

Master of the new ship is D. C. MacFarlane of Victoria.



Exercising en route to ports in Central America are the West Coast destroyer escorts Yukon (foreground), and ocean escorts Sussexvale (left) and New Glasgow (in distance) which left Esquimalt late in January on a 10-week training cruise. Since Feb. 15, when White Ensigns were lowered for the last time, all ships of the fleet have been flying Canada's new maple leaf flag. (E-79660)

FOUR SHIPS END DUTY

THE ANNOUNCEMENT on March 30 that four Second World War frigates of the Atlantic Command would be taken out of service this spring and turned over to Crown Assets Disposal Corporation for disposal brought to eight the total of older RCN warships slated for disposal this year.

All more than 20 years old, the *Outremont*, *La Hulloise*, *Inch Arran* and *Cap de la Madeleine* have become uneconomical to retain in service. A Department of National Defence statement said extensive refitting would be required to give the four ships an acceptable operational capability and the costs involved could not be justified. With the exception of the *Cap de la Madeleine*, the ocean escorts, as this type of ship is currently known, have been in reserve at Halifax.

Although the withdrawal of the four ocean escorts means a reduction of the number of ships in the Atlantic fleet, the overall anti-submarine capability in that command has been markedly increased with the addition of new and converted ships during recent months. This improvement will continue as further destroyer escorts, converted to carry helicopters, come into service and are followed later by four helicopter-destroyers and two operational support ships to be built as part of Canada's five-year re-equipment program for the Forces.

In January it was announced that the destroyer *Iroquois*, which had been paid off in October 1962 and was in reserve at Halifax, would be turned over to Crown Assets Disposal Corporation, along with the ocean escorts *Lanark*, *Buckingham* and *Fort Erie*. The reasons given for the disposal of these ships were the same as for the latest group.

The *La Hulloise* was built at Canadian Vickers Lt., Montreal, and commissioned in 1944. On March 7, 1945, she teamed with two other Canadian frigates for a U-boat kill in British waters. The *Outremont*, built at Morton Engineering and Dry Dock Co., Quebec City, was commissioned in 1943 and helped escort convoys to North Russia as well as to the British Isles.

The *Inch Arran* was one of the last of the 60 frigates constructed in Canada in the Second World War. Built by Davie Shipbuilding Co., Ltd., Lauzon, Que., she was ready for service less than a year after her keel was laid.

Commissioned in 1944, she served on the North Atlantic and, following the surrender of Germany, was fitted out for the Pacific theatre. Service there was forestalled by Japan's surrender.

The *Cap de la Madeleine* was also built by Morton in Quebec City and commissioned in 1944. She too served on the North Atlantic and was made ready for Pacific service, only to have the war end before she could sail.

The *Iroquois* was the oldest destroyer in the RCN, a veteran of actions on the

Murmansk convoy route, in the English Channel, Bay of Biscay and off the coast of Norway in the Second World War. She had three tours of duty in the Korean war theatre.

One of four Tribal class destroyers built in Britain for the RCN, she was laid down in 1940, launched in 1941 and commissioned in December 1942. In the Second World War, she sank or assisted in sinking 15 ships and damaged others, including a German destroyer. She was hit by a communist shore bat-

ARGUS LOST ON NIGHT EXERCISE

An Argus maritime aircraft from 404 squadron, RCAF Station, Greenwood, N.S., crashed and was lost at sea about 60 miles north of San Juan, Puerto Rico, shortly before midnight March 23. There were no survivors among the 16 persons on board.

The crash report was given by the Halifax-based British submarine *Alcide*, which was operating with the Argus as part of the Canadian Atlantic fleet on Caribbean exercises Maple Spring and Maple Springboard.

The Argus, first to be lost since it replaced Lancasters in the RCAF anti-submarine role in 1958, was operating from the U.S. Naval Air Station, Roosevelt Roads, near San Juan, in the combined Canadian-U.S. anti-submarine warfare exercise Maple Springboard.

In addition to the 15 crew members, Dr. C. L. Piggott, scientific adviser to the Air Officer Commanding, Maritime Air Command, was on board. Formerly with the Naval Research Establishment, Dartmouth, he was appointed to the advisory post in December.

The Argus was on task for four hours at the time of the crash, working with the *Alcide*. The submariners saw the glow of the crash reflected in the sky just before midnight. The *Alcide* surfaced and proceeded to investigate. The destroyer escorts *Gatineau* and *Terra Nova* were called to the scene and later were joined by the *Annapolis*. Aircraft from the carrier *Bonaventure* joined in the search and a total of six ships, two submarines, and the U.S. Coast Guard became involved. The search for survivors was called off on the 24th.

At sunset on March 25, in position 60 miles north of Puerto Rico, a memorial service was held on board the *Bonaventure*, with the *Gatineau* in company, for the crew of the lost Argus aircraft.

On completion of prayers, Commodore J. C. O'Brien, Senior Canadian Officer Afloat (Atlantic), dropped a wreath on the waters in the area of the crash. A

one-minute silence was observed by the ship's companies, marked by the firing of the *Bonaventure's* gun.

Defence Minister Paul Hellyer, speaking to the House of Commons on March 24 confirmed that an RCAF Argus had crashed at sea the night before with total loss of life.

At the same time he paid tribute to the "outstanding work of the officers and men of the Maritime Air Command in these words:

"Highly skilled and dedicated to their work, they have maintained in all types of weather over the years constant anti-submarine patrols at very low altitudes over the waters off our shore both in the Atlantic and Pacific.

"Due to the calibre of the men and the level of their training Maritime Air Command has achieved a record of flight safety that is second to none. Indicative of this is the fact that the Argus aircraft which came into service in 1958 had not been involved prior to last night in any major accident or loss of life while flying a total of more than 132,000 hours.

"While our sympathy goes out to relatives and friends," Mr. Hellyer concluded, "the loss of such men is not only theirs but of Canada as a nation."

An investigation into the circumstances was immediately launched. The Argus was one of about 18 in six detachments which had operated from the U.S. Naval Air Station, Roosevelt Roads, on Puerto Rico. Ten RCN ships and two Canadian-controlled British submarines were also involved in the Caribbean exercises which began in mid-January and continued to the end of March.

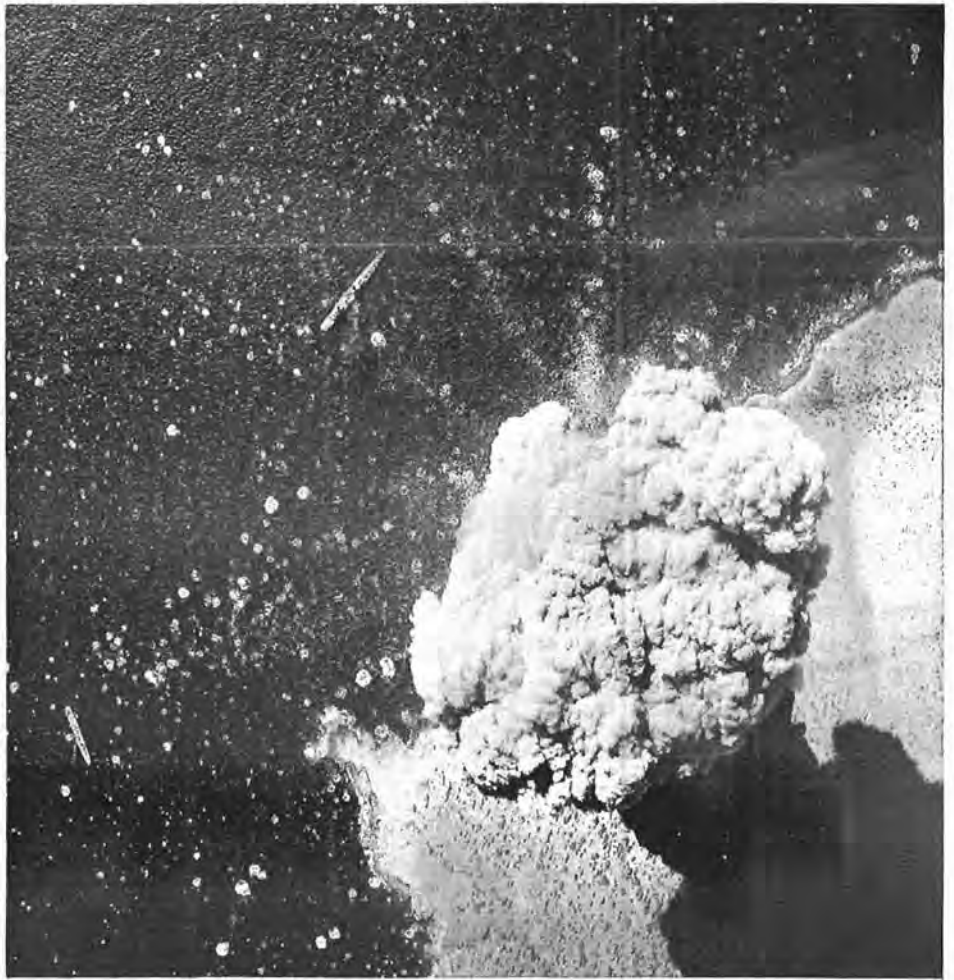
The exercises were code-named Maple Spring for the Canadian aspects, which involved some 4,000 personnel, and Maple Springboard, a joint Canadian-U.S. anti-submarine exercise taking place in the same period.

tery in the Korean war zone and an officer and two men were killed and three others injured.

The *Lanark*, named in honour of Perth, Lanark County, Ont., was first commissioned as a frigate in 1944, at Canadian Vickers Lt., Montreal. After convoy escort service on the North Atlantic, she was paid off in October 1945. Acquired again by the Navy in 1951, she was modernized, commissioned in 1958 and based at Halifax.

The *Buckingham*, commissioned in November 1944 at Davie Shipbuilding and Repair Co., Ltd., Lauzon, Que took her name from the Quebec town in the lower Ottawa valley. In the Second World War, she served in the last of the "hunter-killer" groups formed by the RCN. Paid off late in 1945, she was taken in hand for modernization and commissioned again in 1954, serving initially as a training ship, and later as the first helicopter platform trials ship.

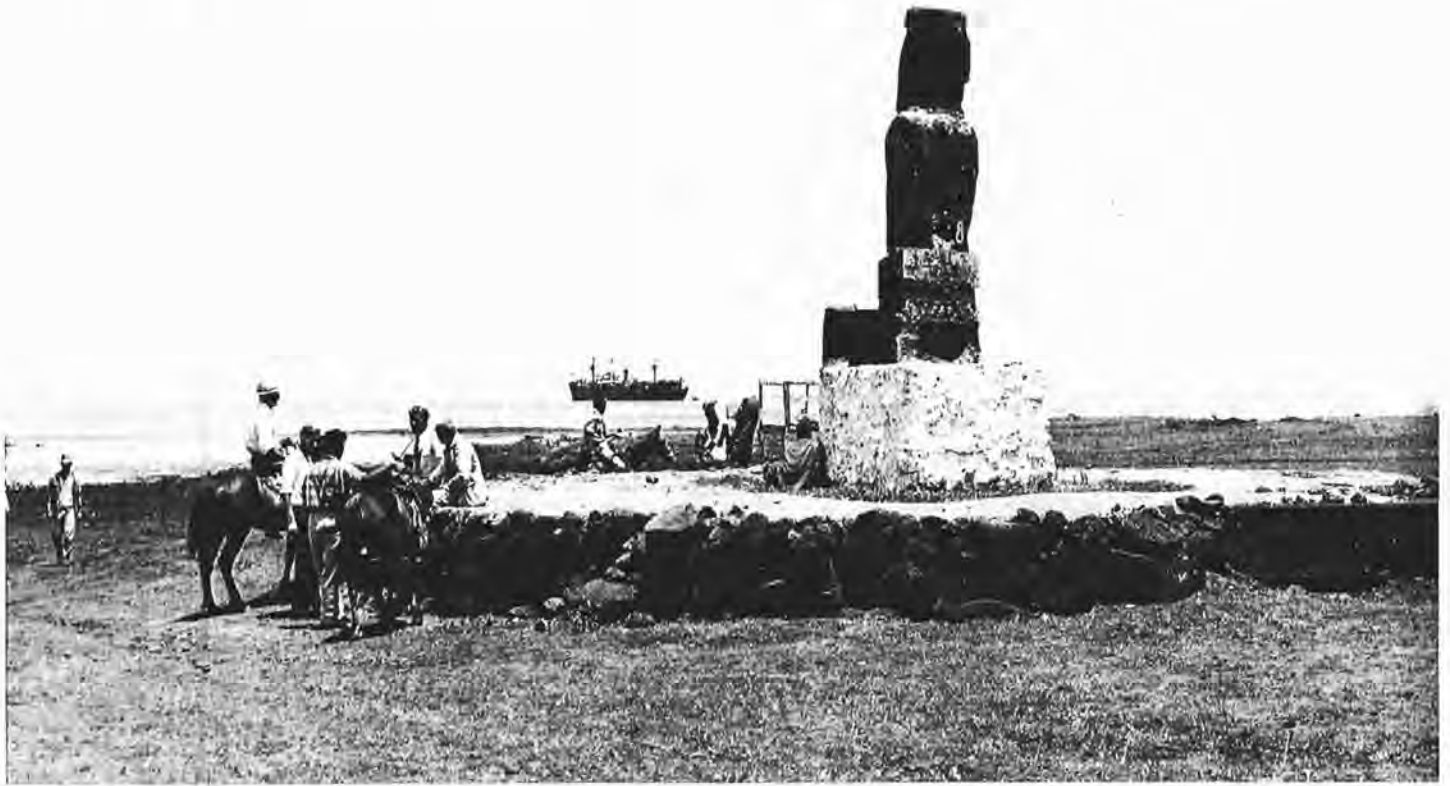
The *Fort Erie* was completed in October 1944 by George T. Davie and Sons, Ltd., Lauzon, Que. As part of Escort Group 28, she carried out anti-submarine sweeps and local convoy escort work off the Nova Scotia coast to the end of the Second World War. She was then employed on ferrying homecoming troops from Bermuda and Newfoundland before being paid off in November 1945. Modernized in Halifax, she was commissioned again 1956, and had operated from Halifax, latterly as senior ship of the Seventh Canadian Escort Squadron.



No garden-variety cauliflower this, but the bloom of a 500-ton TNT explosion touched off during blast effect tests in which two U.S. warships and HMCS Fraser (lower left) participated off Hawaii in February. Rocks, sand and clay from the crater splash in the sea. (USN Photo)



Steadied in position by mooring lines, HMCS Fraser awaits the impact of the blast from a 500-ton TNT explosion during tests in Hawaiian waters early this year. (O-19530-79)



The Royal Canadian Navy's repair ship *Cape Scott* lies off Easter Island this past winter after bringing a medical expedition of 33 scientists from Halifax to make an exhaustive survey of the isolated southeast Pacific island's isolated population of 1,200 residents. The medical team had members from five nations and closed off its four-month, 10,000-mile voyage March 17 at Halifax. In the foreground is one of the island's gigantic statues, mysterious reminder of a lost civilization. (CS-1115)

CAPE SCOTT RETURNS

HMCS *CAPE SCOTT* with members of the Easter Island Medical Expedition embarked, arrived home in Halifax on March 17 after an absence of four months.

His Honour H. P. MacKeen, lieutenant-Governor of Nova Scotia boarded the *Cape Scott* to welcome the expedition back. Greeting the ship also were Rear-Admiral W. M. Landymore, Flag Officer Atlantic Coast, Dr. Stanley Haidasz, parliamentary secretary to the Minister for External Affairs, and other representatives of the Federal Government, the Government of Nova Scotia and Canadian universities.

Cdr. C. Anthony Law, commanding officer of the *Cape Scott*, and Dr. Stanley Skoryna, head of the medical expedition, held a special press conference on board the ship shortly after her arrival. Among the expedition members present were: Surgeon Captain

Richard Roberts, Air Vice-Marshal John Easton, Dr. Helen Reid, Dr. George Nogrady, Dr. Harold C. Gibbs, Dr. Denys Montandon, Dr. Archibald Wil-

kinson, Dr. Armand Boudreault, Dr. Alexander Taylor and Dr. Maureen Roberts.

The *Cape Scott* departed Halifax Nov. 16 with scientific personnel representing six Canadian Universities and institutions in the United States, Britain, Switzerland, Sweden, Norway, Chile and Canada. The expedition was sponsored by the World Health Organization with support from the Medical Research Council of Canada and other foundations.

During the expedition's two-month stay on Easter Island medical teams examined the 1,200 inhabitants and collected biological samples. In addition, several scientists carried out studies in the fields of epidemiology, bacteriology, genetics, hermatology, sociology and anthropology.

The expedition was carried out with the co-operation of the Government of Chile.

Used Car Lot At Bottom of Sea

A jackpot at the bottom of the sea is what a diving team, under Lt.-Cdr. W. W. Palmer, from the RCN Diving Establishment, West Coast, hit last November.

The RCAF missed a vehicle and suspected it had been driven over a cliff into Howe Sound, west of Vancouver. The naval divers, searching the water at the foot of the cliff to a depth of 100 feet, found the vehicle and removed the license plates as proof.

During their search they also came on a truck, two Volkswagens, a sports car and two ancient and rusty wrecks of cars. The divers concluded they had found a spot favoured for disposing of "hot" merchandise.

HERE AND THERE IN THE RCN



Lt. Derek James Neal, a member of the RCN standby crew for the submarine Ojibwa, was selected by Flag Officer Submarines (RN) to stand watch at the catafalque in Westminster Hall during lying in state of the body of Sir Winston Churchill. (HS-71705)



The ship's company of the ocean escort Buckingham, paid off early this year, has donated a cheque for \$3,000 to the Children's Hospital Building Fund in Halifax. The cheque was presented to Dr. Wm. A. Cochrane, chief physician of the hospital, and represented proceeds of the ship's canteen fund. Above are, left to right, CPO J. P. Howell, Lt. D. S. Johnston, Dr. Cochrane, Miss Patricia Webb and Ldg. Sea. K. C. Spriggs.



Heavy lines control the submarine Grilse as she enters the historic dry dock of HMC Dockyard, Esquimalt. After completion of a minor refit the submarine returned to fleet duties with the Pacific Command. (E-79625)



A Sea King helicopter begins its approach to the flight deck of the Assiniboine. Flight deck crewmen wait beside the beartrap device. (DNS-33910)

BEARTRAP

THE PILOT moves the helicopter slowly ahead, keeping pace with the ship. He is about 50 feet above a heaving, rolling deck. He releases a thin wire messenger. It brings back a heavier wire from the flight deck. The slack is taken up—it tightens. Slowly the helicopter descends on its "umbilical cord". The descent quickens. As the helicopter touches down, steel jaws grip it.

What is this?

"Beartrap" they call it—the new haul-down system for landing helicopters on destroyer escorts.

Why is it?

Basically, to make possible the landing and securing of heavy helicopters on destroyer-size ships in rough weather.

The project had its beginnings nearly 10 years ago, when the helicopter-destroyer combination was selected by the Royal Canadian Navy as a promising antidote to the high-performance nuclear submarine.

To start with, the Navy fitted a small, experimental flight deck to a frigate,

HMCS *Buckingham*. Trials were successfully carried out, using a Sikorsky HO4S-3 helicopter. The next move was to put a platform on the destroyer escort HMCS *Ottawa*. Further trials were conducted, using an RCAF Sikorsky S-58. On the basis of the trials, the concept of operating helicopters from destroyers was recommended and received approval in principle.

Two things were needed. One was a helicopter capable of all-weather day and night operation (the HO4S-3 was not). The other was a system for handling and securing a helicopter on a small flight deck in rough seas.

The former was found, in the 9½-ton Sikorsky CHSS-2 Sea King. The landing-handling problem was solved by the beartrap.

During the trials, it was found that landing was not so much a problem as was the handling of the helicopter after it had landed. Manhandling was neither quick enough nor certain enough to establish the measure of control necessary to ensure that, in certain circum-



A flight deck crewman grounds the messenger while the other prepares to connect the haul-down cable. The Sea King hovers about 50 feet above the deck. (DNS-33897)

stances, the helicopter will not take charge, and go over the side.

The Navy went to the drawing boards and came up with a scheme that promised to make the concept practicable. Conceived by the RCN, the haul-down and beartrap system was engineered by Fairey Aviation, Dartmouth, N.S. A prototype was designed and built by Fairey, under RCN supervision, and was installed in HMCS Assiniboine during her 1962-63 conversion.

Trials with a newly-acquired Sea King began late in 1963. By mid-1964 the daytime trials were completed and pronounced successful. Using the new system, no manhandling was needed to get the helicopter on the deck and in or out of the hangar. The helicopter was solidly secured on landing and remained so until the next take-off.

In conjunction with the helicopter-carrying features and hangar facilities, roll-damping fins were added to the destroyers being so built or converted. These fins reduce the roll of the ship and aid landing and take-off operations during rough weather.

An average landing doesn't take any more than five minutes from approach to the snapping shut of the beartrap. The approach is made from the stern of the ship. When in position, an operator in the helicopter lowers a wire rope messenger. To this messenger a man on the flight deck attaches a heavier haul-down cable. (A pair of grounded tongs discharges any static electricity in the messenger so that the man won't get a rude jolt.) The messenger and haul-down cable then are drawn into the helicopter through a probe in the helicopter's belly. After the haul-down cable has been locked in position inside the probe, the slack in the cable is taken up. A landing control officer (LCO) on the flight deck controls the haul-down and landing from this point onward.

The pilot keeps his helicopter hovering in the correct position over the trap. Like an angler reeling in a jumping trout, the LCO slowly begins to reel in the helicopter. The LCO regulates the rate of descent of the helicopter on the control console. When it is in a position just off the deck, he can then increase the rate during a lull in the ship's motion. He plays the helicopter quickly into the beartrap where steel jaws snap around the probe and hold the "chopper" securely against any motion the ship might offer.

This operation can be performed with the ship rolling as much as 31° and with pitching motion as much as 8°.



This is "beartrap", a rapid securing device, which, with the coiled haul-down cable, lies ready for the landing operation. Flight deck personnel will grab a messenger cable from the helicopter. (HS-75928)



Amid multi-wired cables, the landing control officer prepares to haul down the tethered Sea King. The LCO is constantly in radio voice contact with the helicopter pilot. (CN-6826)

Breaking the system into its component parts, the largest and most complex are in the destroyer escorts, with the lightest and smallest in the helicopter.

The helicopter contains the main probe, a tube-like structure protruding

from the underside of the fuselage, through which the messenger cable is paid in and out. The winch operating the messenger sits on top of the probe, and is controlled by an operator in the helicopter. The probe incorporates pins



Beartrap jaws grip the Sea King's probe, clamping the 9½-ton "chopper" firmly on deck. The helicopter thus is poised for centring and shifting into the hangar. (CN-6823)

to engage the haul-down cable and lock it in position. A series of micro-switches then actuate the locks, disengage the messenger from the haul-down cable, and stop the winch when the messenger has completed its work.

Destroyer equipment is divided into three sections—winch unit, power unit and beartrap rapid securing device.

Motive power for the system comes from a 60 hp electric motor. This operates a hydraulic pump and motor which in turn actuate a double drum winch through reduction gears. Each drum is operated independently and has its own clutch and braking system. The entire hydraulic system operates at 3,000 psi and is rated at 4,000 psi.

The system maintains constant tension in the haul-down cable. This is of

great importance for, without it, the helicopter would be dragged down and jerked drastically whenever the ship pitched to any appreciable degree.

Constant tension in the cable is maintained by an intricate system of "black boxes", or modules. Basically, they compare selected tension on the control console with actual cable tension. The difference is measured and fed to a valve which controls the paying in or out of cable. The sensing devices, in company with the five control modules which make up the constant tension equipment, are so sensitive to change that narrow limits are achieved even in the roughest of weather conditions.

A shock absorber is built into the system as well, to absorb snatch loads in cable tension. These loads occur par-

ticularly when the slack in the cable is being taken in before haul-down. The shock absorber is a piston-cylinder arrangement with double sheaves on either end around which the haul-down cable passes. The cylinder is charged with air under pressure.

The beartrap rapid securing device sits in a slot in the flight deck and travels fore and aft in response to a command signal from the LCO's control console. It secures the helicopter immediately upon landing by engaging the main helicopter probe.

The six-foot square beartrap secures the helicopter when the LCO pneumatically fires two parallel beams equipped with steel, spring-loaded teeth. The beams prevent the probe from moving port or starboard and the teeth prevent probe movement fore and aft. The end of the probe is swaged so that it can't jump out of the beartrap.

The beartrap has a centring device. Centring is accomplished by traversing the beartrap unit aft. The beams are equipped with a fail-safe device which keeps them together in case of system failure.

The entire beartrap mechanism travels in a slot along the centre-line of the flight deck. It can be traversed with its captive helicopter the full length of the flight deck, in or out of the hangar. This eliminates the dangerous manhandling problems which could exist with a 9½-ton aircraft, particularly in rough seas.

While the haul-down cable is operated from one of the twin drums on the winch unit, the traversing system is controlled by the other.

With the landing complete the LCO centres the helicopter, the rotor blades and tail pylon are folded by the pilot and the helicopter is stowed in the hangar.

Safety and ease of handling are the keynotes in this system. Day landing trials on the *Assiniboine* were completed last summer and Experimental Squadron 10 (VX 10) pilots have begun a series of night landing trials.



OJIBWA'S BADGE

AN OFFICIAL ship's badge has been approved for the first of three Oberon class submarines building for Canada at HM Dockyard, Chatham, England. To be commissioned HMCS *Ojibwa*, the first boat is scheduled for completion in September 1965.

In heraldic language, the description of the badge is:

Blazon: Azure, an escallop shell erect argent, irradiated by nine ears of wild rice or, all issuing from two barrulets wavy of the last, in base.

Significance: The design of this badge is derived from a traditional Ojibwa legend in which the migrations of this tribe through the centuries from the Atlantic seaboard to Lake Superior and even further westward has been a part of the ceremonial used during the initiation of novices into warrior status.

The legend is that the tribe's migrations were controlled by the rise and fall of the great Megis, or seashell. When the great Megis rose from out the waters it reflected the rays of the Sun from its glossy surface, gave warmth and light to the Red Man's race and brought prosperity.

When it descended back into the depths of the waters it brought hard times, misery and death to the tribe causing them to move to a new region in the hope of finding happier conditions.

At one period of these migrations they settled around Lake Ontario, and the area north of it. In this region they found an abundance of wild rice growing around the shores of the lakes. This they gathered, and it became one of their staple foods, which they claimed had been given them because the great Megis had once again risen from the waters and shed its beneficent radiance over the land.

The ship's colours, which are predominant in the badge, are white and blue.

Ojibwa means "people whose moccasins have puckered seams" and is also rendered "Chippawa". Diamond Jeness, in *Indians of Canada* (King's Printer 1932), writes that they were numerically the strongest nation of Canada, totalling even today about 20,000 people. They controlled the northern shores of lakes Huron and Superior from Georgian Bay to the edge of the Prairies and at the height of land north of Lake Superior where the rivers begin to flow toward Hudson Bay they united with their kinsmen, the Cree.



Of the four distinct groups into which their vast territory divided them, the Ojibwa proper occupied the Lake Superior region. The other people were the Missisauga, the Ottawa, and the Powawatomi. All but the Missisauga formed a loose confederacy known in the 18th century as the Council the the Three Fires.

They were hunters, roaming in bands of several hundred, each with many clans bearing hereditary totems. Kinship feeling was close but the real political unit was the band.

The chief of the band was usually its

war captain. Principal enemies were the Sioux and Iroquois. The war pipe was passed to neighbouring bands. Those who smoked it joined the war party. No man could put pipe to lip and not fight without deep disgrace.

The Ojibwa were brave warriors and preserved strict discipline on the march. Their weapons were much the same as those of their enemies—the bow, knobbed wooden club, knife and a round shield covered with moosehide. While fighting lasted, they spared neither man, woman nor child and they took scalps for the victory dance. When fighting finished, they never tortured prisoners. The Ojibwa regarded the Iroquois with especial loathing for their inhuman conduct toward enemies fallen into their hands.

The Ojibwa diet included considerable vegetable food. In addition to the wild rice they gathered, they made maple syrup and preserved berries. Keen hunters and fishermen, they were too nomadic to farm.

Living was not hard and they observed annual feasts, including an autumnal festival of the dead. Much ceremony was attached to child naming. Men played lacrosse and gambled with bone dice; the women watched or played their own ball game. The big yearly event was the Midewiwin, a celebration of the Grand Medicine Society, a secret religious organization open to both sexes and unknown in all other parts of the country but those of the Cree.

What cures they could achieve were by herbal remedies and magic. They had a strong belief in the supernatural but they were grossly superstitious.

Getting back to the submarine *Ojibwa*: she was laid down at Chatham in September 1962 as the *Onyx*, destined for Royal Naval service. The Canadian negotiations succeeded in obtaining her for the RCN and she was launched on Feb. 29, 1964, as the first Canadian boat of her class.



ORDERS OF CHIVALRY

SINCE in recent years it has not been the practice of the Canadian Government to recommend to Her Majesty the Queen the bestowal of orders of chivalry upon Canadian citizens, Canadians may sometimes be puzzled by the orders and decorations worn by citizens of other nations, particularly those of the Commonwealth. For this reason these notes on the subject may be of interest to readers.

Generally speaking, the orders bestowed by the heads of states of various nations are based upon traditional European Orders of Chivalry, some of which are of great age. This being particularly the case in Britain, it will be convenient to describe in some detail the various orders at the disposal of Her Majesty.

The membership of many orders is divided into classes, though this is not always the case. Membership in the higher classes of most British orders carries with it the honour of knighthood and the title "Sir", though again this is not always the case. Classes are distinguished by the insignia worn in various ceremonial circumstances. These may vary from elaborate mantles, badges, ribbons and stars, down to simple medallions worn with other medals. The number of living members is in most orders limited. The badges and insignia of the higher orders have to be returned when a member dies, some to the Sovereign personally, others to the Central Chancery of the Orders of Knighthood.

Within the Commonwealth, membership in British orders and the possession of decorations may be indicated by the use of letters after the name, but in front of all "post-nominal" letters come the two "special awards", the Victoria Cross (VC) and the George Cross (GC). Then, in order of precedence, come the three "great orders", The Garter (KG), The Thistle (KT) and St. Patrick (KP).

The Most Noble Order of the Garter was founded by King Edward III in 1348. The Black Prince was one of the first of 25 knights appointed. Aside from Royalty, the membership of the order is limited to 25. It was as a Knight of the Garter that Sir Winston Churchill derived his knighthood.

The Most Ancient and Most Noble Order of the Thistle is thought by some

to have been founded earlier than the Garter; in any case it goes back as far as 1687 and is the principal Order of Scotland. Its membership is limited to 16, apart from Royalty.

The Most Illustrious Order of St. Patrick was established in 1783. Its membership was limited to 22. No new appointments to this Order have been made since 1922 and it is obsolescent.

It will be noted that none of these three Orders are divided into classes. Moreover it is almost unknown for any person, other than a Royal Personage, to be a member of more than one of them, the Garter being considered the senior.

The Most Honourable Order of the Bath is next in order of precedence. In

By

Commodore E. S. Brand,

CCG (Ret)

the Middle Ages, a part of the customary preparation before receiving the accolade of knighthood was to take a bath, whence comes the name of the order. The earliest mention of Knights of the Bath occurs in 1306. In 1725 the order was revived and placed on a new footing by King George I on the advice of Sir Robert Walpole, who wanted something for his political supporters; The King, however, intended to have it as a military order, limited to 36 members. By the end of the 18th century many of the great naval and military leaders were members of the Order. Commodore Nelson was made a KB for his services at the Battle of Cape St. Vincent in 1797. In 1815 when military rewards were needed after the Napoleonic wars the Order of the Bath was considerably enlarged, much to the rather natural annoyance of the KBs of the time.

In this revision the order was divided into three classes, the first time this had been done in Britain, though division into classes was quite common in Continental orders. These classes were headed by Knights Grand Cross (GCB) limited to 72. Of these 12 were to belong to the Civil Division and no

member in the Military Division was to be below the rank of rear-admiral or major-general. The second class of Knights Commander (KCB) was limited to 180, who were not to be below the rank of post-captain or lieutenant-colonel. The third class, Companions of the Bath (CB) was allowed unlimited numbers, who must not be below the rank of major. In the course of time these limiting ranks have, in practice, been quietly raised, and a post-captain today who received a KCB, or a rear-admiral who was made GCB, would indeed be outstanding or very favoured.

Civil Divisions were added to the KCB and CB classes in 1847. The total membership now allowed is GCB, 95; KCB, 285, and CB, 1,498. These numbers include the armed services and civil services of the whole of the British Commonwealth. After various wars a number of allied officers have been made additional members of the order. General Eisenhower, for example, is a GCB but, as a U.S. citizen, does not use the title of knighthood.

There is a special prayer which is used at the funeral of members of the Order of the Bath. It was said in St. John's Church, Ottawa, in 1946 at the memorial service for the late Vice-Admiral G. C. Jones, CB, who was Chief of the Naval Staff when he died.

Next in order of precedence comes the Order of Merit (OM) which will be dealt with later.

Then comes the Most Distinguished Order of St. Michael and St. George. This order was founded in 1818 primarily to provide a mark of Royal favour for the Maltese and the Ionians who had shown outstanding loyalty when Malta and the Ionian Islands (Corfu etc.) were taken under the British Crown. The use of the order has changed over the years and, as a general practice, appointments in it are reserved for diplomats, members of the Foreign Service and those who have performed valuable service in the countries of the Commonwealth overseas. In the latter category a certain number of the third class memberships (CMG) were awarded to Canadian civil officers of deputy minister level during the Second World War.

Like the Bath, the order is divided into three classes—100 Knights Grand Cross (GCMG), 355 Knights Com-

mander (KCMG) and 1,435 Companions (CMG). Foreign dignitaries awarded the order are additional to these numbers and are classed as honorary members.

Next comes the Royal Victorian Order. It is divided into five classes and there is also a Royal Victorian Medal. Unlike all other orders and decorations, which are bestowed by the Sovereign on the advice of the government of the day, the Royal Victorian Order is in the personal gift of the Sovereign and is confined to those who have rendered extraordinary or important personal services to the Sovereign, or who have otherwise merited Royal favour. No limitation is placed on the numbers in each class but it has been awarded sparingly and is therefore much prized by its members.

The five classes are: Knight Grand Cross (GCVO), Knight Commander (KCVO), Commander (CVO), Member Fourth Class (MVO) and Member Fifth Class, (also MVO). As an example of the use of this order, the ex-Deputy Master of Trinity House, who for many years carried out on his behalf the work of the Master (always a member of the Royal Family, at present the Duke of Gloucester), was appointed a KCVO after he had held the post of Deputy Master for some years. The Admiral Commanding the Royal Yachts is usually honoured in the same manner, while the Commander and the Commanders (N) and (E) are awarded MVOs on relinquishing their appointments.

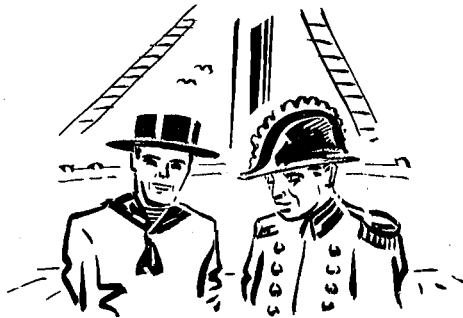
In the field of personal services to Royalty the Royal Victorian Chain must be mentioned. It does not form any part of the Royal Victorian Order nor does it carry any "post-nominal" letters, but is a very handsome necklace, collar, or chain worn on ceremonial occasions. It was instituted in 1902 by King Edward VII as a "Pre-eminent mark of the Sovereign's esteem and affection towards such persons as His Majesty specially desires to honour". There are only six Commonwealth possessors of The Royal Victorian Chain, of whom one is the Rt. Hon. Vincent Massey, PC, our former Governor-General

Following the order of precedence we come now to the Most Excellent Order of the British Empire, established by King George V in 1917.

The unprecedented national mobilization of the war had created a need for some form of recognition of the war service being performed by men and women of the Empire. Hitherto women had not been included in orders of chivalry. Moreover, from the service

point of view something was needed to recognize administrative work for which the "gallantry" awards such as the DSO, DSC, and MC were obviously unsuitable.

The order was divided into five classes plus a medal (the British Empire Medal). This division not only enabled the award to be spread broadly but was in line with a number of orders of our Allies, making it suitable for bestowal on allied personnel. In an effort to fill the needs of war service, in the early days of the order, awards were made on a very lavish scale, particularly in the lower classes, which, at the time, rather "cheapened" them. As time has gone on, however, with the scale of awards considerably reduced, and carefully scrutinized, the order has taken its rightful place in the harmony of honours available.



The classes were Knight Grand Cross (GCB), Knight Commander (KCB), Commander (CBE), Officer (OBE), and Member (MBE); and the order was subdivided into Military and Civil Sections. Ladies of the first two classes of the order take the title of Dame as the equivalent of knighthood. During the Second World War awards of the order were made for gallantry as well as for administrative staff work. In 1957 awards made for gallantry were distinguished by the addition of a silver emblem of two oak leaves on the appropriate riband of the order.

Two rather different orders must now be mentioned. The Order of Merit (OM), which ranks next after the GCB, and the Companions of Honour (CH). Neither of these carries any title, and their badges, in comparison with the robes and stars of other orders, are simple ones worn round the neck on a ribbon. Both are open to citizens of the British Commonwealth.

The membership of the Order of Merit, which was instituted in 1902 by King Edward VII, is limited to 24 ordinary members. An unlimited number of honorary members can be made, though at the present time there are

only two—General Eisenhower and Dr. Schweitzer. Only one lady has yet been admitted to the Order—Florence Nightingale in 1907. Dr. Wilder Penfield is the only Canadian member of the 24, whose names range from John Mansefield, the Poet Laureate, to Admiral of the Fleet Lord Chatfield and include Sir Winston Churchill. Incidentally, Lord Chatfield, who was Admiral Beatty's Flag Captain throughout the First World War, was a rare modern case of an award of a KCB while still on the post-captain's list.

The Companions of Honour (CH) were established in 1917 and is a sort of junior OM. Its membership is limited to 65, and in order of precedence, as CH comes immediately after a GBE. The order may be awarded to ladies. General Henry Crerar, The Rt. Hon. Vincent Massey, and General the Hon. Andrew McNaughton are the only Canadian members.

In this connection it might be noted that the title "Right Honourable" and the post-nominal PC denotes a Member of the Queen's Privy Council, which is a special appointment made by the Queen. General McNaughton's "Honourable" comes from the day he was sworn in to the Privy Council of Canada as Minister of National Defence.

Some mention should be made of orders which were peculiar to the Old Indian Empire, which are becoming obsolete but whose post-nominal letters may still be encountered. These Orders were the Most Exalted Order of the Star of India, instituted in 1861; the Most Eminent Order of the Indian Empire, 1886 and the Imperial Order of the Crown of India, 1877. The Star of India and the Indian Empire were mainly awarded to high British officials, military officers and Indian princes. Each Order has three classes; GCSI, KCSI, and CSI; GCIE, KCIE and CIE, the highest classes being known as Knights Grand "Commanders" instead of Grand 'Cross' to avoid any embarrassment to those recipients who were not of the Christian faith.

The Crown of India, instituted in 1877 by Queen Victoria to commemorate her assumption of the title Empress of India, was for Royal princesses and the wives and other female relatives of Indian princes. There is one class only and there are not post-nominal letters. No appointments to any of these Indian orders have been made since 1947.

To complete the list of British orders' the Distinguished Service Order (DSO) and the Imperial Service Order (ISO) must be mentioned. The former is a much coveted recognition of gallantry

and takes precedence before the MVO and OBE. The ISO is a recognition of long public service in civil administrative posts and takes precedence after the OBE.

The Distinguished Service Cross (DSC), The Military Cross (MC), the Distinguished Flying Cross (DFC), the Air Force Cross (AFC) and the Royal Red Cross (RRC) are classed as "decorations" and not orders.

In undress uniform the distinctive ribbon of an order, except KG and KT, is worn in its precedence on the right of the medal ribbons, but the VC or GC ribbon goes on the right of them all.

Foreign orders are usually divided into classes in much the same manner as the British orders described above.

They may only be worn by permission granted at the time of award, and take precedence after all British orders of the same class, and in the sequence of their date of award.

Broadly, so far as British practice is concerned, the orders and decorations which have been discussed above are awarded to recognize and reward officers of the services, high government officials, civil servants, and others who have made some distinctive contribution to the State. "Political and Public Services", on the other hand, are generally recognized by elevation to the peerage or by being created a baronet or a knight bachelor. Baronets have the post-nominal abbreviation, Bt or Bart, which incidentally, is the only one which comes

before VC and GC, and they have a badge which can be worn round the neck. Knights bachelor have a badge which can be worn on the left breast. There are no miniatures or ribbons.

It is hoped that this survey of Orders of Chivalry may have helped to clarify a subject which, at first sight, may appear rather complex. The material has primarily been gleaned from a book entitled *The Queen's Orders of Chivalry*, by Brigadier Sir Ivan de la Bere, KCVO, CB, CBE, late Secretary of the Central Chancery of the Orders of Knighthood; published by William Kimber of London. Perusal of this book is recommended to those who wish to make a more detailed study of the matter.

TWO ALL-CANADIAN AWARDS

ONE MEDAL and one decoration which are peculiar to Canada may be awarded to naval personnel. They are the Canadian Voluntary Service Medal, awarded for voluntary service during the Second World War, and the Canadian Forces Decoration. When the latter was instituted, it superseded several British awards that could be won by Canadians.

The superseded decorations and medals include:

- *The Royal Canadian Navy Long Service and Good Conduct Medal* identical with the Royal Navy Long Service and Good Conduct medal, but with the letters RCN included in the inscription on the rim of the medal.
- *The Royal Canadian Naval Reserve Long Service and Good Conduct Medal*, formerly known as the Royal Canadian Navy (Reserve LS & GC Medal and as the Royal Canadian Naval Volunteer Reserve LS & GC Medal: identical with the Royal Naval Volunteer Reserve LS & GC Medal but with the letters RCNR, RCN(R) or RCNVR included in the inscription on the rim.
- *The Volunteer Officers' Decoration* (VRD), identical with the Royal Naval Volunteer Reserve Decoration but with the letters RCNR, RCN(R) or RCNVR included in the inscription on the rim of the medal.

These three decorations are still being granted to officers and men who were in the service before September 1, 1939.

Also superseded and no longer being issued are:

- *The Royal Canadian Naval Reserve Long Service and Good Conduct Medal*, identical with the

Royal Naval Reserve Long Service and Good Conduct Medal but with letters RCNR in the inscription on the rim of the medal.

- The Royal Canadian Naval Reserve Decoration (RD), identical with the Royal Naval Reserve Decoration, but with the letters RCNR in the inscription on the rim.

These two awards fell out of use with the formation of the RCNR on Jan. 1, 1946, but clasps may still be awarded to officers and men already holding the awards.

Naval decorations and medals which may be won by Canadian as well as

other Commonwealth personnel are:

- *The Victoria Cross* with a blue ribbon. When the Victoria Cross was instituted in 1856, it was worn by naval recipients on a blue ribbon. This was discontinued during the First World War. The only Canadian who wore it was Petty Officer William Hall, RN, who won it at the Relief of Lucknow, 1857.
- *The Distinguished Service Cross*.
- *The Albert Medal in Gold for Saving Life at Sea*; now superseded by the George Cross.
- *The Albert Medal for Saving Life at Sea*; now awarded only posthumously, superseded by the George Medal for living recipients.
- *The conspicuous Gallantry Medal*.
- *The Naval General Service Medal*; awarded for participation in minor campaigns and operations for which no special medal is issued, the latest clasp being for the Arabian Peninsula, Jan. 1, 1957 to June 30, 1961. It seems likely that another will be issued for service in Brunei. The medal has not been issued for service in HMC Ships, but many Canadians have won it in HM Ships.
- *The Atlantic Star*; awarded for participation in the Battle of the Atlantic, not only to naval personnel, but also to Coastal Command aircrew, soldiers serving in Defensively Equipped Merchant Ships and on board troopers (ship's staff, not passengers).
- *The Class AA Badge*; awarded to RCN personnel who served at sea during the First World War for wear with civilian clothes.—*Naval Historical Section*.

COLUMBIA JOINS NATO SQUADRON

HMCS *Columbia*, serving with the newly formed NATO Match Maker squadron of four ASW ships, shared with them in Exercise Pilot Light which ended March 15.

Pilot Light, a NATO exercise in northern European waters, started Feb. 18 and included more than 30 ships and 75 aircraft from the Netherlands, Norway, Portugal, Britain, and the United States and Canada.

For five months destroyer escorts HrMs *Overijssel*, of the Royal Netherlands Navy, HMS *Leander*, USS *Hammerberg*, and the *Columbia* are working together. This is the first NATO squadron formed for such an extended period of time.

They are carrying out exercises and visiting several NATO country ports to gain operational and logistic experience. The squadron is commanded by Captain D. V. M. MacLeod, RN.

The *Columbia* will return to Halifax in July.



FOLLOW ME

EVERY YEAR several hundred persons pass through the Leadership Division at *Cornwallis*, the end product being in most cases a leader of high potential. The 750 trainees in a recent 12-month period were in 15 different categories, took 35 courses and represented an increase of seven per cent over the numbers trained during the previous year.

Leadership and divisional courses last from two to six weeks and, in addition to classroom lectures, receive much practical training, parade training, PT, sports, the invigorating assault course and, a new innovation, the obstacle course. All these are stimulants to the trainee to develop self-confidence, lead-

ership potential and, to a degree, his physical condition. This varied program has the following aims:

- To acquaint the trainee with the main principles of leadership, discipline, morale and welfare, and through discussion and practical exercise, develop these facets of leadership in each trainee.
- To familiarize the trainee with his duties as a divisional officer, chief petty officer, petty officer, or leading seaman, as applicable.
- To present to the trainee as broad a background of general service knowledge as possible.

Throughout the past year many improvement have taken place in training.

The approach to the experienced limited duty officers has been made more challenging. The direct entry divisional officers' course has been re-studied and more general naval knowledge is now included in the syllabus. As a result of experience, there is now a better understanding of the pre-Fleet sub-lieutenants, their motivations and requirements. Considerable emphasis has been placed on increased trainee participation, through evening assignments in effective speaking, discussion panels, current affairs, debates and syndicate work.

One of the aims of the leadership staff is to provide instruction in the best possible training environment. To this end a continuing training projects program has been instituted to evaluate and improve the material facilities and instructional aids.

Among the accomplishments are classroom renovations, standardization of training aids, the mounting of projection screens, the acquisition of additional overhead projectors and construction of a large number of projectors and charts for instructional use. Decks have been tiled, windows renewed, and installation of fluorescent lighting arranged. Two tape recorders are used effectively for speech training. The library was enlarged and improved facilities for training-aid production have been developed.

Information in the form of handout notes has been greatly increased, both to aid the trainee while under instruction and as references for their future use. It is hoped that eventually one or more "grooving-in" handouts will be available for every lecture delivered at Leadership. These will be inserted into an attractive but, more important, a functional pack. Eighty per cent of the lesson outlines and lesson plans have been revised and more are receiving this treatment, making available to the trainee the latest subject matter.

In keeping with Leadership's tireless search for improvement in methods designed to closely resemble realism is the one-day field exercise, commonly referred to as "EXPED". (See *The Crow's-nest* March-April 1964, page 35). This "day in the woods" provides the trainee with a practical opportunity to test his "followership" as well as his leadership. It also taxes his physical stamina to a certain extent as well as bringing out his attitude and feelings when suddenly thrust into a difficult environment. "EXPED" also serves to give the trainees and the staff a chance to get away from the routine of classroom instruction. The outing is not all hard work when you think about all the fresh air, the

close proximity to nature and, occasionally, the excitement generated by a helicopter search for a temporarily dis-oriented (in other words "lost") group.

During the autumn, winter and spring training is primarily given to direct entry officers and RCN petty officers 2nd class. In mid-May the heavy summer reserve training period commences. This lasts until August and includes two-week courses for RCNR officers, sea cadet officers, RCNR chief petty officers, petty officers (both 1st and 2nd class), leading seamen and UNTD cadets. To handle the increased load, the Leadership staff is supplemented each summer by selected reserve personnel.

Five officers and a wren were added to the RCNR training staff for the summer of 1964.

The optimum size of a class in leadership is 24. Although there is little difficulty in meeting this quota, personnel are urged to plan far enough ahead in order to ensure themselves a billet for their appropriate course. It is hoped that all vacancies will be filled and that the Leadership division's aim will continue to be attained, namely:

"TO ENHANCE THE FIGHTING EFFICIENCY OF THE FLEET BY TRAINING PERSONNEL TO SERVE PROUDLY, WORK DILIGENTLY AND LEAD EFFECTIVELY."

PROFESSOR AT STRATEGY MEET

A professor from the Canadian Services College, *Royal Roads*, was the sole Canadian representative attending a five-nation international symposium on strategy and foreign policy at the Institute for Study of the USSR, Munich, West Germany, Oct. 20-22. He is Dr. William Rodney, assistant professor of history at the college.

More than 40 military and academic men from Canada, France, the United Kingdom, the United States and West Germany met in Munich to discuss "The Impact of Modern Military Revolution on Strategy and Foreign Policy."



Promised to Lieutenant-Governor G. R. Pearkes, VC, last May when he visited Ahousat on the west coast of Vancouver Island, a 15-foot totem pole now stands on the grounds of Government House in Victoria. General Pearkes made the visit on board HMCS Margaree, then commanded by Cdr. J. L. Panabaker. The Ahousat village totem carver, John Jacobson, not only produced the 15-foot pole but also the miniature in the hands of Cdr. Panabaker. General Pearkes listens as Mr. Jacobson describes the 400-hour carving project. (E-778825)



DR. WILLIAM RODNEY

Dr. Rodney, a native of Drumheller, Alta., did his doctoral work at the London School of Economics on the Communist Party of Canada and the Comintern, and was awarded a NATO fellowship in 1963. He received his university education in Canada and Britain following Second World War service with the Royal Canadian Air Force during which he won the Distinguished Flying Cross and Bar while attached to the Royal Air Force.

Dr. Rodney joined the faculty of *Royal Roads* in 1962 and the following year spent the summer in Europe on his NATO fellowship, one of 15 granted to individuals in the NATO countries. This past summer he visited the former French colonies in West Africa on a fellowship from the African and Overseas Fellowship Fund.

COMPOSITION OF THE FLEET

THE ROYAL CANADIAN NAVY'S 42 warships range from an aircraft carrier through helicopter-destroyers, destroyer escorts, ocean escorts, a submarine and supporting ships. One or two Royal Navy submarines serve at a time in the Atlantic Command under the operational control of the RCN. Four small ships are on loan to other government departments. There are more than 100 auxiliaries, from research vessels down to small passenger ferries.

The 20,000-ton aircraft carrier leads the RCN's anti-submarine warfare (ASW) team. She has an angled deck, mirror landing aid and steam catapult and carries twin-engine CS2F-2 Tracker anti-submarine planes and CHSS-2 Sea King all-weather ASW helicopters.

There are 23 helicopter-destroyers and destroyer escorts in the fleet, 20 of them built in the past 10 years.

The first of three "O" class conventional submarines for the RCN will be commissioned at HM Dockyard, Chatham, England, in the fall, followed by the others in 1967 and 1968.

Strength of the regular Navy as of Jan. 1, 1965, was 20,133 officers, men, wrens and cadets. That of the Royal Canadian Naval Reserve was 2,393 officers, men, wrens and cadets of the University Naval Training Divisions.

The fleet underwent a re-organization of its ships and personnel in December-January so that ships are arranged in phases of operational availability and their manning conforms to a cyclic system. As a result, at least half the fleet will always be available for operational requirements and other elements can be brought readily forward in emergencies.

Atlantic Command - Ships Based at Halifax

HMCS *Bonaventure*, aircraft carrier
First Canadian Escort Squadron
(Red Group)

HMCS *Algonquin*, destroyer escort
*HMCS *Saguenay*, helicopter-destroyer
HMCS *Kootenay*, destroyer escort
HMCS *Nipigon*, helicopter-destroyer
HMCS *New Waterford*, ocean escort

Third Canadian Escort Squadron
(White Group)

*HMCS *Skeena*, helicopter-destroyer
HMCS *Terra Nova*, destroyer escort
HMCS *Annapolis*, helicopter-destroyer
HMCS *Restigouche*, destroyer escort

Fifth Canadian Escort Squadron
(Blue Group)

HMCS *Columbia*, destroyer escort
*HMCS *Margaree*, helicopter-destroyer
HMCS *St. Laurent*, helicopter-destroyer

HMCS *Gatineau*, destroyer escort
HMCS *Swansea*, ocean escort

Seventh Canadian Escort Squadron
(Gold Group)

HMCS *Ottawa*, helicopter-destroyer
HMCS *Assiniboine*, helicopter-destroyer
HMCS *Chaudiere*, destroyer escort
*HMCS *Fraser*, helicopter-destroyer

Ships in Ready Reserve at
Halifax (Crescent Group)

HMCS *Athabaskan*, Crescent, destroyer
escorts
HMCS *Victoriaville*, ocean escort

Special Duties

HMCS *Provider*, operational support
ship
HMCS *Cape Scott*, mobile repair ship
HMCS *Granby*, diving depot ship (con-
verted Bangor minesweeper)

Sixth Submarine Division, one or two
submarines (RN under RCN opera-
tional control)

RCN Air Squadrons

(HMCS *Shearwater*, RCN Air
station near Dartmouth, N.S., or
detached to HMCS *Bonaventure*,
aircraft carrier)

VS-880 CS2F-2 Tracker ASW aircraft

VU-32 CS2F-1 and -2 Trackers

T-33 Silver Star jet trainers

HS-50 CHSS-2 Sea Kings

HU-21 HO4S-3 helicopters

Bell HTL-6 helicopters

VX-10 Various aircraft for experi-
mental purposes

* Ships completing conversion this
year, except for HMCS *Fraser*, which
will begin conversion this year, com-
pleting in 1966.

Pacific Command - Ships Based at Esquimalt

Second Canadian Escort Squadron
Division One (Gold Group)

HMCS *Mackenzie*, destroyer escort
HMCS *Saskatchewan*, destroyer escort
HMCS *Beacon Hill*, ocean escort

Division Two (Red Group)

HMCS *St. Croix*, destroyer escort
HMCS *Stettler*, ocean escort
HMCS *Antigonish*, ocean escort

Fourth Canadian Escort Squadron
Division One (White Group)

HMCS *Yukon*, destroyer escort
HMCS *Sussexvale*, ocean escort
HMCS *New Glasgow*, ocean escort

Division Two (Blue Group)

HMCS *Qu'Appelle*, destroyer escort
HMCS *St. Therese*, ocean escort
HMCS *Jonquiere*, ocean escort

Special Duties

HMCS *Grilse*, Balao class submarine
HMCS *Oriole*, sail training yacht

RCN Air Squadron (Patrician Bay
Airport, near Victoria)

VU-33 CS2F Trackers

T-33 Silver Star jet trainers

Commanding Officer Naval Divisions - Hamilton

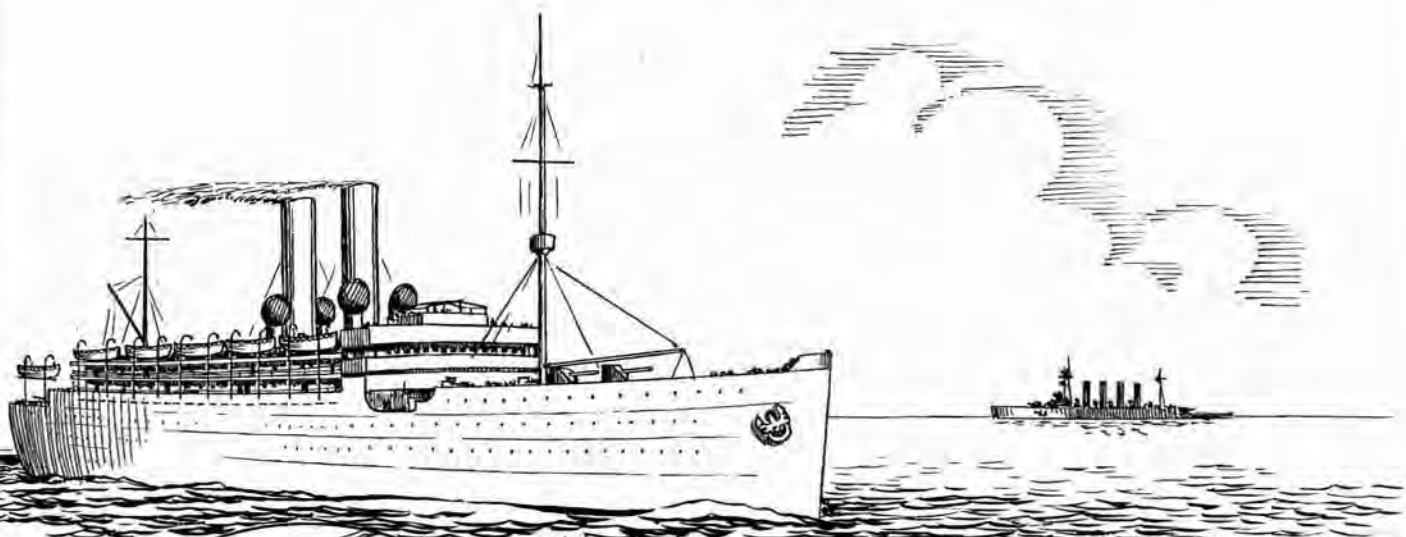
Two gate vessels and a small cargo vessel (HMC
Ships *Porte St. Jean*, *Porte St. Louis* and *Scatari* are
maintained on the Great Lakes, manned each summer

for the training of naval reserves on Canada's inland
seas. They are reinforced during the summer by a ship
or ships from the RCN Atlantic Command.

Naval Lore Corner

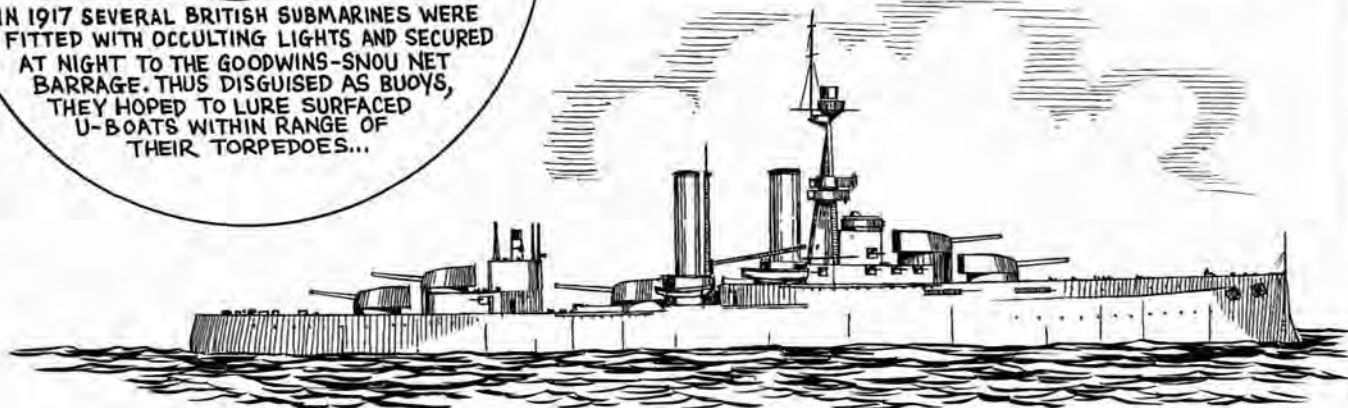
Number 136
"RUSES DE GUERRE"

MANY WERE THE TRICKS AND RUSES EMPLOYED BY BOTH SIDES AT SEA IN BOTH WORLD WARS. WORLD WAR I PROVIDED SOME OF THE MORE NOVEL MARITIME DECEPTIONS...



IN 1917 SEVERAL BRITISH SUBMARINES WERE FITTED WITH OCCULTING LIGHTS AND SECURED AT NIGHT TO THE GOODWINS-SNOU NET BARRAGE. THUS DISGUISED AS BUOYS, THEY HOPED TO LURE SURFACED U-BOATS WITHIN RANGE OF THEIR TORPEDOES...

THE GERMAN AUXILIARY CRUISER "PRINZ EITEL FRIEDRICH" (EX-NORD DEUTSCHER LLOYD LINER) ESCAPED ALLIED CAPTURE FOR 7 MONTHS BEFORE VOLUNTARY INTERNMENT AT NEWPORT NEWS ON 9 APRIL, 1915. SHE RECEIVED HER GUNS FROM A GERMAN CRUISER IN THE PACIFIC, SAILED WITH VON SPEE, ESCAPED FROM THE BATTLE OFF THE FALKLAND ISLANDS AND SANK OR CAPTURED 10 ALLIED SHIPS. TO ELUDE CAPTURE ONE SIDE WAS PAINTED WHITE, THE OTHER BLACK, SHE EVENTUALLY FELL IN WITH A BRITISH CRUISER WHICH GAVE CHASE, STEAMING INTO A FOG PATCH SHE TURNED ABOUT. WHEN THE CRUISER SIGHTED A WHITE SHIP COMING TOWARDS HER, SHE SIGNALLED "HAVE YOU SEEN A BLACK SHIP?" TO WHICH THE RAIDER REPLIED IN THE AFFIRMATIVE "18 MILES TO THE WEST".... AND MADE GOOD HER ESCAPE WHILE THE CRUISER STEAMED WEST IN VAIN PURSUIT!



ON 27 OCT. 1914, H.M.S. AUDACIOUS (BATTLESHIP) STRUCK A MINE (LAID BY THE GERMAN AUXILIARY MINELAYER "BERLIN") WHILE TAKING PART IN FIRING PRACTICE IN THE ATLANTIC. SEVERAL ATTEMPTS WERE MADE TO SAVE HER BUT SHE EVENTUALLY SANK, THUS REDUCING THE NUMERICAL STRENGTH OF THE BRITISH FLEET IN RELATION TO THAT OF GERMANY. IN ORDER TO CONCEAL THIS WEAKNESS, HER LOSS WAS DENIED AND THE C.P.R. MERCHANT SHIP "MONTCALM" (5,500 TONS) WAS DISGUISED TO REPRESENT THE BATTLESHIP. HER LOSS WAS NOT ADMITTED UNTIL AFTER THE WAR...

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