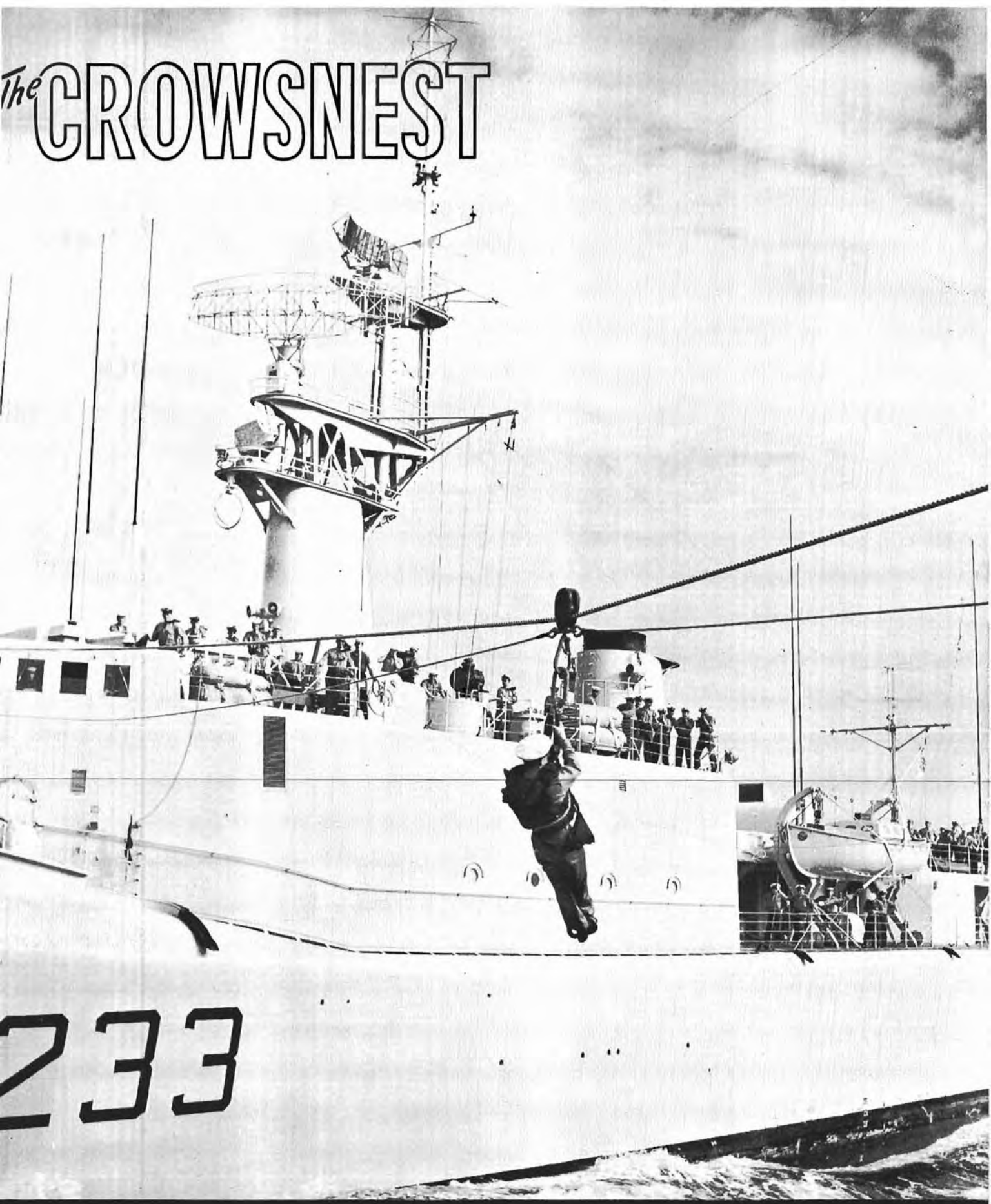
The CROWSNEST



Vol. 10 No. 6 April, 1958


HMCS

The CROWSNEST

Vol. 10 No. 6 THE ROYAL CANADIAN NAVY'S MAGAZINE APRIL, 1958

CONTENTS

The Cover—Feeling happier by the minute, a passenger from the *Crescent* passes the halfway mark during a jackstay transfer to the *Fraser*. This evolution took place during the journey of five DDEs of the Second Canadian Escort Squadron to the Far East this spring. The picture was taken by Ldg. Sea. E. W. F. Charles, squadron photographer. (CR-189R)

FAMILY PORTRAIT

Up betimes and, it being a sunny day and ye officers and men in astonishingly good humour, ye Captain did summon ye ship's photographer.

"Methinks," he did say, "ye time is ripe for a portrait which doth depict ye ship's company as One Big Happy Family."

Whereupon, when ye officers and men were assembled upon ye forecastle and ye upper portions of ye ship, ye whole multitude did beam toothily and mightily upon ye photographer, who did press a button and say:

"Sorry, sir. In my forgetfulness I pulled not out ye slide."

When ye photographer had been trussed up and flogged without mercy, to ye merriment of all present, ye company did again assemble in their places and ye picture was taken . . .

Samuel Pepys, being almost wholly ignorant of the existence of Japan and the ship's name being obscured by a cable holder, did not mention that the picture was taken on board the Crescent, *senior ship of the Second Canadian Escort Squadron, alongside at Yokosuka on Tokyo Bay. (CR-217)*

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RCN NEWS REVIEW

HMCS Margaree presents a dashing picture as she lays down a smoke screen during exercises with U.S. Navy units in the Pacific. The exercises were carried out in the course of this spring's training cruise of the Second Canadian Escort Squadron to the Far East. (CR-159)

Chippawa First In Efficiency

HMCS *Chippawa,* Winnipeg naval division, has won the interdivisional efficiency trophy for the third successive year.

In 1956 the trophy was shared with HMCS *York,* Toronto naval division, and in 1957 *Chippawa* won outright.

The trophy, a sterling silver model of HMC St. *Laurent,* is awarded annually to the best all-round naval division in Canada. Second place went to HMCS *Discovery,* Vancouver naval division, which thus qualifies for the *Malahat* runner-up trophy.

"Competition for the awards this year has been exceptionally close and the commanding officers, officers and men of these divisions are to be congratulated," said the announcement of the winners.

Joint Air-Strike Exercises Held

Royal Canadian Navy and RCAF jet aircraft took part in joint air-strike exercises, attacking and defending military targets in the Halifax area on March 13.

The simulated attack on shore installations took place between 0600 and 1200 by some 25 carrier-born aircraft including Sea Venoms and Seahawks from the British carrier *Bulwark* and Banshees from the *Bonaventure,* operating with combined units of the Home Fleet and the RCN's Atlantic Command south of Halifax.

Opposing the attackers were a formation of F-86 Sabre jets from RCAF Station, Chatham, and RCN Banshees and T-33s from *Shearwater.* The defending aircraft operated out of *Shearwater.*

Later in the day, RCAF F-86 Sabres and RCN Banshees from *Shearwater* carried out attacks on the combined fleet, testing air defences.

Halifax Host to 32 RN-RCN Ships

Following the first phase of Exercise Maple Royal, the largest joint RCN-RN operations held since the end of the war, a total of 32 Canadian and British warships entered Halifax on March 14 for a brief spell before sailing again on March 18 for the second half of the operation.

Maple Royal, principally an anti-submarine exercise, was held by the Commonwealth ships between Bermuda and Halifax during the period March 10-14.

On arrival at the Atlantic Command headquarters, the first ship to enter Halifax was HMS *Maidstone* (submarine depot ship), to which Admiral Sir William Davis, Commander-in-Chief Home Fleet, transferred his flag on arrival.

Other units of the Home Fleet were HM Ships *Ceylon* (cruiser), wearing the flag of Vice-Admiral J. D. Luce, Flag Officer Flotillas, Home Fleet; *Bulwark* (aircraft carrier); *Daring, Dainty* and *Delight* (Daring class destroyers); *Camperdown* and *Barfleur* (Battle class destroyers); *Ulster* (U-class frigate), wearing the broad pennant of Commodore G. E. Hunt, Senior Naval Officer, West Indies) and *Troubridge* (T-class frigate); the submarines *Tiptoe* and *Anchorite* and the Royal Fleet Auxiliaries *Tidereach* and *Olna.*

The Canadian ships taking part in the joint exercises were: the *Bonaventure, St. Laurent, Ottawa, Assiniboine, Saguenay, Algonquin, Haida, Micmac, Nootka, Sioux, Outremont, La Hulloise,* and *Swansea,* and the submarines *Alcide* and *Amphion* of the Sixth Submarine Squadron based at Halifax. The Canadian fleet was under the command of Commodore J. V. Brock. For the second phase, Maple Royal II, held March 18-22, Rear-Admiral H. F. Pullen, Flag Officer Atlantic Coast, transferred his flag to the *Bonaventure.*

An interested spectator during Maple Royal I was the Earl of Selkirk, First Lord of the Admiralty, who returned to the United Kingdom by air after visiting Halifax. He referred to the exercise as being: ". . . very successful and all movements were extremely well co-ordinated."

Maple Royal also marked the largest joint peacetime naval air manœuvres carried out by the two navies. In addition to the Banshee jet fighters and the Trackers anti-submarine aircraft which flew from the *Bonaventure,* planes of the *Bulwark's* four squadrons, 801 (Hawker Seahawks), 891 (de Havilland Sea Venoms), 845 (Westland Whirlwind helicopters) and 849 D Flight (Douglas Skyraiders), were also busily engaged in carrying out many sorties.

During the period the ships were in Halifax, HM Ships *Maidstone, Bulwark, Ceylon* and *Camperdown* were open to the public and created a great deal of interest.

For the British sailors, the brief spell in harbour was a hectic round of sightseeing and competing against their Canadian colleagues in an active sports schedule which included volleyball, basketball, water polo, squash and boxing. They received a warm welcome from the people of Halifax and local clubs and organizations extended their facilities to the visiting sailors.

Captain M. G. Stirling, left, commanding officer of HMCS Crescent and Captain Second Canadian Escort Squadron, welcomes Rear-Admiral Sadayofhi Nakayama, Commanding Officer Training Fleet, Japanese Navy, on board the Crescent at Pearl Harbour, Hawaii. Behind the admiral is Sub-Lt. (S) J. R. J. Rangel, of Victoria, Yokohama-born officer who served as interpreter for the occasion. Admiral Nakayama commanded a Japanese squadron visiting Pearl Harbour for the first major call made there by the Japanese since the end of the war. Five Canadian destroyer escorts were in port at the time in the course of their Far East training cruise from Esquimalt. (CR-185)

Oceanographic Group Sails

A group of scientists of the Pacific Oceanographic Group, Nanaimo, B.C., sailed in the *Oshawa* when she left Esquimalt early in March for a five-week operation in northern B.C. and Alaskan waters.

The group, headed by E. B. Bennet, senior scientist, was to conduct surveys for the federal fisheries department, the Pacific Naval Laboratory and other agencies.

The *Oshawa,* commanded by Lt.-Cdr. G. H. Barrick, is employed on research duties for the PNL.

Ontario Visits Pearl Harbour

The *Ontario* left for Suva, Fiji Islands, following a four-day call at Pearl Harbour highlighted by a meeting of high-ranking RCN and USN officers, the heaviest recorded rainfall in the history of the island of Oahu, and a generous helping of Hawaiian hospitality.

On board the *Ontario* for the practical, seagoing phase of their training are 50 senior term *Venture* cadets.

Rear-Admiral H. S. Rayner, Flag Officer Pacific Coast, made the voyage from Esquimalt to Pearl Harbour, to meet and discuss future operations with Admiral H. G. Hopwood, Commander in Chief of the U.S. Navy's Pacific Fleet.

After a stormy passage, the *Ontario* entered Pearl Harbour in bright sunshine. The customary gun salutes were exchanged, and the ship was met by a troupe of Hawaiian dancers arranged by a local chamber of commerce.

Following the arrival, calls were made to the cruiser by the British consul and the USN liaison officer, after which Rear-Admiral Rayner and the commanding officer of the *Ontario,* Captain J. C. Littler, of Halifax and Victoria, made calls on USN authorities ashore, including Rear-Admiral N. K. Dietrich, Commander Hawaiian Sea Frontier, and Rear-Admiral F. A. Brandley, Chief of Staff to Admiral Hopwood. Calls were also made on Governor Quing and on Mayor Blaisdell, of Honolulu.

On the second day, Rear-Admiral Rayner and Captain Littler called on Rear-Admiral E. W. Grenfell, Commander Submarine Force Pacific, and on Rear-Admiral H. D. Riley, Chief of Staff to the Commander-in-Chief Pacific. The following day Rear-Admiral Rayner attended a conference at the headquarters of the Commander-in-Chief and held informal discussion with Admiral Hopwood.

The fair weather that marked the ship's arrival was followed by a storm

in which 16 inches of rain fell in 24 hours. This damaged but did not halt the entertainment program arranged by the USN and civilian authorities. Members of the ship's company were taken on bus tours of the island and were guests at a number of informal functions.

Groups of *Venture* cadets were taken on a tour of Barker Point naval air station, were shown a display of all simulated training devices and given a demonstration of new tactics with the latest USN aircraft. Another 22 cadets spent a day in submarines on shakedown cruises for new crews.

The *Ontario* was at Suva from March 16 to 19. From there she left for New Zealand and Australia, and will return to Esquimalt, via Suva and Honolulu, May 5.

Military Tattoo Planned for B.C.

A military tattoo, featuring service bands from Canada, the United States and the United Kingdom, will be part of the British Columbia centennial celebrations this year in Vancouver.

The two-hour searchlight pageant will include performances by massed bands, 100 Highland dancers, massed pipes and drums with 200 musicians, an historical pageant and a mock modern battle. It will take place June 23 to July 1, with performances beginning shortly after sundown.

Expected to take part are bands of the U.S. Marine Corps, San Francisco; the Royal Marines from the U.K.; the Royal Canadian Navy, HMCS *Naden*, Esquimalt; the Royal Canadian Air Force, Edmonton; the Royal Canadian Engineers, Chilliwack, B.C.; Queen's Own Rifles, Calgary; 1st Battalion Princess Patricia's Canadian Light Infantry, Victoria; 2nd Battalion PPCLI, Edmonton; Lord Strathcona Horse, Calgary, and Crawford Pipe Band, Vancouver.

Idea Brings Award of $100

A suggestion by PO Alastair Newall has gained him an award of $100 from the Suggestion Award Board of the Public Service of Canada, and a certificate of award from the Naval Secretary.

PO Newall suggested a modification to certain RCN anti-submarine aircraft which allows the aircraft to carry out

With the sea pacific in mood as well as name, sailors of HMCS Crescent pray at Sunday Divisions on the quarterdeck. Captain M. G. Stirling, commanding officer of the destroyer escort and Captain Second Canadian Escort Squadron, leads the prayers. The Crescent and four other destroyer escorts were en route to the Far East on the spring training cruise. (CR-163)

functions not previously possible. The idea was forwarded to the Suggestion Award Board for evaluation by specialist officers and has been adopted for use by the Royal Canadian Navy.

PO Newall was born in Vermilion on January 1, 1926, and served with the RCAF from January 1944 until October 1945.

He entered the RCN in March 1946 and after serving ashore on both coasts and at sea in the *Ontario,* he specialized as an air mechanic and later as an air ordnance-man. He subsequently served with air groups at *Shearwater,* and at sea in the *Magnificent,* and took advanced air ordnance courses in the United Kingdom.

PO Newall is now serving with VU-33, naval utility squadron based at Patricia Bay near Victoria.

Oriole Begins Sailing Cruises

The first in a series of four sailing cruises for *Venture* cadets—in the yacht *Oriole,* got underway March 21. A familiar sight in local waters, the *Oriole* is commanded by Lt.-Cdr. C. A. Prosser.

With 18 cadets on board, *Oriole* left Esquimalt harbour on the afternoon of March 21, and returned late on March 23. Port Townsend and Seattle were visited during the cruise.

The second cruise carried the same number of cadets, and called at the same ports. That cruise was held at the end of March. Two similar cruises are to be held in April.

Each group of cadets is accompanied by one of *Venture's* divisional officers, either Lt. (P) John Kennedy or Lt. Constantine Cotaras.

While the sailing cruises are designed to provide practical sailing experience and general seamanship to all the cadets, special emphasis is placed on pilotage training.

Busy Schedule For 'Sweepers

The Second Canadian Minesweeping Squadron continues to be one of the busiest groups in the Pacific Command. It has been "on the go" almost continuously since the beginning of the year.

Led by the *Fortune,* senior ship, the *James Bay, Miramichi* and *Cowichan* returned to Esquimalt early in March from a four-week exercise in the Campbell River - Oyster Bay area. The *Fortune, James Bay* and *Miramichi* sailed almost immediately for northern B.C. waters, calling at Prince Rupert, Masset, Skidegate, Kitimat, Bella Bella and Bella Coola. It was arranged to embark Reserve officers and men from *Chatham,* the naval division at Prince Rupert, during the visit there, and take them to sea for a period of training. The three ships returned to Esquimalt early in April.

The *Cowichan* was to visit Bremerton and Tacoma in mid-April for a week of technical trials in the Puget Sound area.

On the *Cowichan's* return to Esquimalt the four ships of the squadron expected to sail to Alaska on a training cruise lasting from April 23 until May 15, visiting Sitka, Juneau, Skagway, Petersberg, Wrangell and Ketchikan. During the cruise exercises were planned with ships of the Fourth Canadian Escort Squadron, en route to Prince Rupert.

New War for Old Avengers

A new type of warfare may soon face some former Royal Canadian Navy aircraft. The airplanes are the outmoded Avengers which recently went up for sale. It is reported their new owners plan to use them for spraying chemicals over Canadian forests in the war against the spruce bud-worm.

These aircraft are among the 22 which were turned over to Crown Assets Disposal Corporation for sale. More are expected to go up for disposal later as they are replaced by the new RCN anti-submarine aircraft, the Tracker.

Some Avengers are still in service but will be replaced shortly, while others have been paid off from the squadrons in preparation for disposal.

It is the second time on the block for the Avengers. U.S.-built planes, formerly torpedo bombers, they were acquired by the RCN and converted for anti-submarine use in 1951.

In the original role of torpedo bomber, the Avengers were used effectively by the U.S. Navy in the Pacific in the later stages of the Second World War.

For their anti-submarine duties with the RCN they were almost completely rebuilt into two main types, one for search duties, the other as an attack aircraft. In the search Avengers, huge radar domes replaced the former underbellies which housed the torpedo or bomb bays. They were also equipped with magnetic anomaly detectors for ferreting out submarines travelling beneath the surface of the ocean.

RCN ADOPTS NEW TABLE OF VISUAL STANDARDS

A revised standard of visual acuity has been adopted by the Royal Canadian Navy. Recognizing the greater demand made on eyesight by modern technical equipment, it broadens considerably the fields of activity in which glasses may be used.

A further influence has been the increasing efficiency of and reliance on electronic "eyes", chiefly radar, for detection and observation. These instruments have not replaced the human eye, but by enormously extending a ship's visual capability—especially at night and in low visibility—have enabled an easing of emphasis on eyesight standards in many categories.

All personnel over the age of 23 are now permitted to wear glasses, except in hazardous circumstances, to correct and preserve vision. Of those 23 years of age and under, a high standard of visual acuity is still required of officers employed in executive duties (e.g., watch-keeping at sea) and of seamen, photographers and communicators (visual). However, personnel in these categories may wear glasses for reading, if prescribed.

The new standards take into account the deterioration of eyesight with age. Minimum standards, with and without glasses, have been established for each of four age groups—23 and under, 24 to 33, 34 to 40 and 41 and over. These are further subdivided according to duties. The effect will be to ensure adequate vision for duties performed, and in some cases permit employment of personnel in duties from which they were prohibited by previous eyesight standards.

Provision is also made for those whose eyesight may fall below the minimum standard. Cases of this nature will be considered individually and the status and employment of an officer or man in this category will be determined in relation to his overall capabilities.

IT TAKES THE COIN OF THE LAND

...TO BUY TRINKETS

...AND FINE CHINA

...OR A PORTRAIT BY A SKILLED ARTIST

...AND FOOD TO SUSTAIN YOU

...UNTIL YOUR SHIP SAILS
FOR NEW SCENES.

The Polynesians

THE VAST Pacific Ocean's recorded history dates from the discovery of explorers like Magellan, Drake, Cook and a few others who sailed its almost limitless expanse in search of a route to China. When these dauntless sailors raised islands, they found each one populated by a strange race of people. It was immediately apparent that these brown-skinned natives have existed on the various islands for hundreds, even thousands of years. Their language was simple. It existed only in spoken form and remained as such until comparatively recent times. But they had chanters, honoured men of each tribe, whose business it was to tell stories which had come down through the ages, relating the history of each particular tribe. Only guesswork can separate fact from fiction. Yet certain elements of each story must be true, else how can history account for people living on tiny islands, thousands of miles from the mainland?

Three races are found in the Pacific Islands: the Melanesians, Micronesians and Polynesians. The territories they inhabit are distinctly separate from one another. Melanesia is in the far southwest Pacific running from just east of the Philippines in an arc-like formation to the Fijis. Next comes Micronesia following the same conformation and stretching from the Marianas to the Ellis Islands. Finally there is Polynesia, which comprises just about all of the other islands in the world's largest ocean.

This is the story of the ancient Polynesians. It could be the story of virtually any Pacific clan. But thanks to "chanters' lore" and the work that has been done by Polynesian scholars like Mary Pukui of Honolulu's Bishop Museum, it is possible to create an accurate picture of how these people lived and how they migrated.

THE POLYNESIANS originally came from India eons ago. Why they moved or started their wanderings is a matter of conjecture. But move they did; eastward to seek something they lacked in the more civilized confines of their native land. Not much free land was available to them as they started their eastbound trek, so they moved farther and farther toward the rising sun, looking, searching, always seeking, tribe by tribe, until they found what amounted to their own particular "promised land". It took generations. Their wanderings were broken from time to time, sometimes for many years, to build up tribal strength. But eventually they arrived and created a crude civilization which has managed to survive the perils of existence even to this day.

Chanter's Legends have established that two important forces were most likely responsible for tribal movements from island group to island group in the "Great Sea of Kiwa", as they called the Pacific. These were economic and religious. Economic, because each island was small and thus could not support many people. Religious, because two great Gods controlled the thinking of the island world of the time; Tane the peaceful lover of man, and Koro or Oro, the god of war and destruction. The followers of Tane were mild-mannered folks who lived up to the "Golden Rule". The Koroites, on the other hand, were murderous cut-throats dedicated to the worship of blood. It follows that the peaceful ones, stopping at an island under the control of Koro adherents, made tracks for other pastures before the "blood sacrifice" demanded by the warlike people completely destroyed them. It was a "dog eat dog" situation, with the more peaceful ones at the receiving end. Small wonder that the Tane adherents bided their time, built up their numerical strength, grew and stored food, built boats and then took off like the "ghost tern" for parts unknown. Their journeys were almost unbelievable. How they managed to survive the ravages of hunger, thirst, natural phenomena and a myriad of other forces is one of man's minor miracles.

The migrations from island to island can be classified among the world's greatest sea stories. Imagine, if you can, six hundred or more people suddenly pulling up stakes, boarding specially built canoes and spending week after week at sea before sighting another island. Frequently the new land, even though uninhabited, was not the "dream land" or "legend land" promised by tribal priests on behalf of

Acknowledgment

The accompanying article on that great race of sailors, the Polynesians, appears here by courtesy of The Compass, *bi-monthly publication of the Socony Mobil Oil Company, of New York, and its editor, K. V. W. Lawrence,* who served as a commander *in the U.S. Coast Guard during the Second World War. The illustrations have been adapted by the Naval Art Section from those appearing with the original article.*

the Gods. Therefore it was a mere stepping stone where the tribe could rest for five, ten or twenty years, build up its numerical strength, plant jealously guarded shoots for future food, stock the fruits of their labours and even plan another sea journey. It certainly was a series of situations fostered by both superstition and necessity which have given the modern world its share of stories both fictional and factual—stories which have excited imaginative minds and pushed them along speculative paths to provide some tangible proof of what actually happened so long ago.

Each tribe was a closely knit, self-sufficient organization, ruled by a chief who usually inherited his position. When another trek was imminent, all hands "turned-to" and followed a definite work plan, established through experience from previous migrations. Work was parcelled out according to ability to perform. It fell into two general classifications, construction of the ships and the gathering of provisions for the journey, both equally important factors in the success of the pending operation.

Building of the ships, each one destined to carry 100 people or more, followed very definite religious and constructive precedents. After ceremonial cleansing, the builders were isolated from everyday trafficking, as both the mechanics and their materials were under control of the gods whose favour had to be curried. Plans and blueprints were non-exisitent. The builders followed their apprentice training which taught them design, methods of construction and selection of tools, such as the sharpest fishbones for drilling holes and the best shells and stones for gouging and shaping.

Trees destined to become hulls were carefully selected. Priests prayed to the Gods who owned them for permission to fell each one. After cutting, the great logs were dragged to open-sided sheds where workers commenced shaping them into hulls. Under cover, protected from the deteriorating influence of the broiling tropical sun, two logs were shored up on stocks, an exact prescribed distance apart. This was done because each ship had a port and starboard hull joined by six or more solid, hardwood beams. To increase freeboard, planks were added to the hull's top side by carefully and skilfully fitting them so that seams were almost unnoticeable. Nails were unheard of, hence all planking was secured to the base hull by careful stitching with coconut fibers. Joints were made tight by caulking with the same coconut fiber and then smearing with breadfruit gum. The result was an extremely seaworthy craft that could withstand considerable working in rough seas.

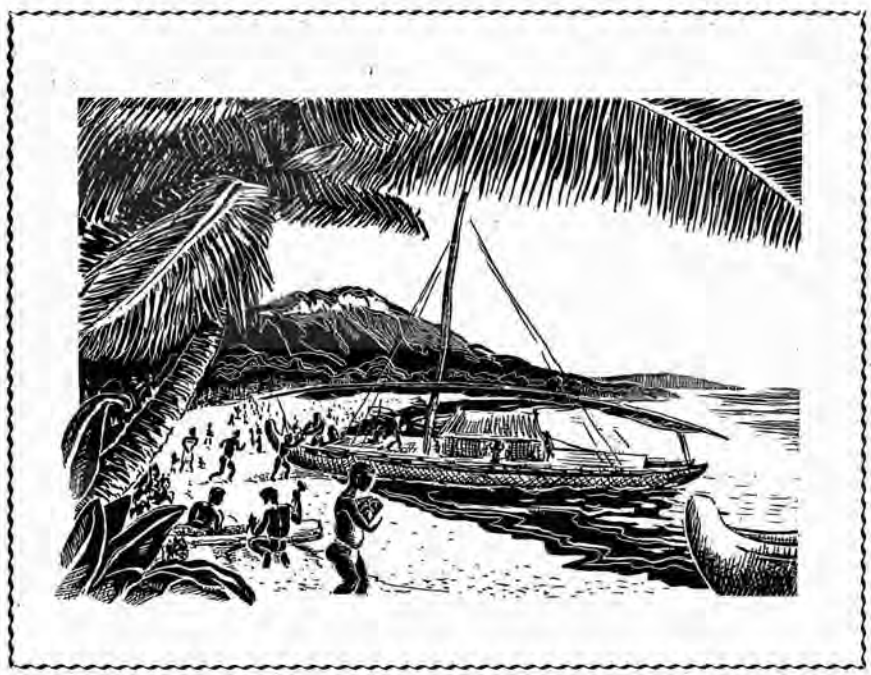
The cross beams connecting the port and starboard hulls were decked over. A mast was set up to carry a triangular sail painstakingly plaited by the women from pandanus leaves. And small structures were built on the deck, frequently no more than five feet high, to shelter women and children as well as the aged and infirm from the elements. Finally, every part of the ship was carefully rubbed down with pumice, painted in tribal colours and then dressed with kukui nut oil to give it a splendid finish not unlike present-day lacquer. All was then in readiness for launching.

While the ships were being built, the women of the tribe worked long and hard preparing provisions for the voyage. Gardens of yams and taro root were planted sufficiently ahead of departure date to insure maturity. Pits were dug, lined with leaves and filled with breadfruit. Here, this island staple would ferment and turn into poi, a thick, white nourishing paste. Breadfruit was also baked, rolled thin and made into flour. The finished product was wrapped in leaves and placed in lengths of bamboo for protection. When the yams and taro roots matured, some were baked and stored for use at sea while others were carefully preserved for planting when a new island was reached.

The children worked too, roaming here and there, gathering pandanus nuts from which another type of flour was made. They also gathered vast hoards of coconuts, enough to fill every available place on the ships. This was called the food of last resort and would not be touched until all the other food was consumed. The reason of course lies in the peculiar preservative properties of the fruit's hard outer shell, protecting the inner meat and spongy utos, both rich in nourishment, from decay. Children also collected the tribal livestock which had been allowed to roam free all over the island. As the fowl, pigs and other animals were caught, they were placed in pens, watered, fed abundantly and allowed to fatten so they would be in top condition for the voyage.

The rest of the tribal members, including the aged and crippled, not actually occupied with raising or collecting food, spent their time preparing various kinds of containers in which the edibles would be stored aboard ship. Baskets were painstakingly woven. Calabashes were collected to be used as gourds for both drinking and bailing. Long lengths of the ever present giant bamboo were gathered, cleaned and set aside for carrying breadfruit, flour and fresh water. The combined activity was feverish, growing more so as departure day approached. For each one knew his contribution had to be the greatest possible if the spectres of thirst and hunger were to be kept from hovering over the little fleet during the long weeks at sea.

Launching day for the boats was a very special occasion attended by considerable ceremony. Priests performed rites which dedicated the craft to Tane. Blood purification and human sacrifice were employed by the bloodthirsty



tribes, ceremonial purification by the more peaceful ones. After prayers and long recitations by chanters, detailing how the vessels were built, everyone adjourned to a great feast where abundant food was literally washed down with copious quantities of okolehao, a potent alcoholic beverage made from the ti root. As might be expected, the feast and recovery therefrom took several days.

As departure day came closer, activity was stepped up. The ships, now afloat in the sheltering lagoon, were carefully loaded with voyage supplies, not wasting an inch of space. Families were separated and assigned billets on different vessels, so that if any of the craft were lost or became permanently separated from the rest no strain would be wiped out. Even the livestock received special handling. Fowl were placed in handmade coops and larger animals were secured in specified places aboard. Fresh water, which can spoil if kept too long in the open, was the last item to be stored. It was placed in bamboo and homemade jars which were sealed against the destructive power of air. At last all was in readiness.

The day picked by the priests for leaving the island finally arrived. The whole tribe, gathering its holy relics, embarked. At a signal from the chief, sails were set and the little boats, one by one, passed through the harbour's protective reefs and turned eastward toward the rising sun.

The launching ceremonies, the feast and the careful choice of departure day were all dependent upon whether the migration was being forced or not. Frequently tribes inhabited an island only on the sufferance of those already in residence. Just as frequently intelligence reached them that the original residents were planning a massacre. When this happened, they left the island in a hurry without benefit of any ceremony, religious or festive. Under such a circumstance it was a matter of survival, hence expediency was the keynote and speed the essence.

Once at sea, all was changed. As long as a fair breeze blew from the west the vessels continued under sail. This sometimes lasted for days and even weeks. During the daytime the fleet would spread out in a long arc covering as much as 20 or more miles of ocean. As the sun sank, conch shells sounded a recall, tightening the arc so that each vessel could be distinguished by its neighbour after dark. During the night hours, mats were drawn over the gunwales and secured to cleats in order to protect the sleepers from flying spray. In spite of the very crowded conditions aboard, everyone was able to sleep comfortably. At dawn, life stirred once again and the ships spread out to cover as much of the viewable horizon as possible.

Food was carefully doled out twice daily, at mid-morning and late in the afternoon. Everyone received the same ration. It is thought, however, that the older people skimped on theirs so that the children would have more. Water was restricted to three cups a day; a cup being a small section of bamboo stalk. The livestock fared somewhat better than the humans. They were generously fed, watered, cleaned and exercised as much as practicable, since they were big factors in the tribes' future survival.

Rains, at certain times frequent and heavy in most tropical Pacific areas, replenished fresh water supplies. Concentrations of birds over a small area of sea revealed the presence of schooling fish. Enough fish were speared and brought aboard to provide a special feast, a break in the monotonous routine of rationed food-stuffs from the departed island.

When the breeze fell and the sea became calm, the people went over the side to spend some refreshing moments swimming and enjoying themselves. During this period, the ships were thoroughly cleaned. The process consisted of moving all the gear from each ship, parcelling it among the others one by one until all were cleaned. When finished and restowed, the people came back on board. The men then got out their paddles and the migration once more got underway.

The Pacific is famous for its typhoons, storms and torrential rains, but it is also subject to long frustrating calms. When a migrating tribe was caught in one of these, the pleasure of being at sea soon turned to almost unbelievable suffering. The broiling sun beating from a cloudless sky on the little vessels soon dehydrated the travellers. Fresh water rations were reduced from three

cups a day to two and then finally to one, barely enough to sustain life. Even adolescent training, during which each tribal member learned to endure the pangs of thirst so that it would not be a strange sensation, was of little help. As days passed, the weaker members of the clan succumbed and were buried at sea. The stronger members were reduced to almost unmovable hulks just lying under the protective mats, praying for the blessed relief of either death or cooling, refreshing rain. It is quite possible that whole tribes were obliterated under these circumstances. On the other hand rain, sometimes in torrential quantities, did come to renew the life spark and the tribe survived.

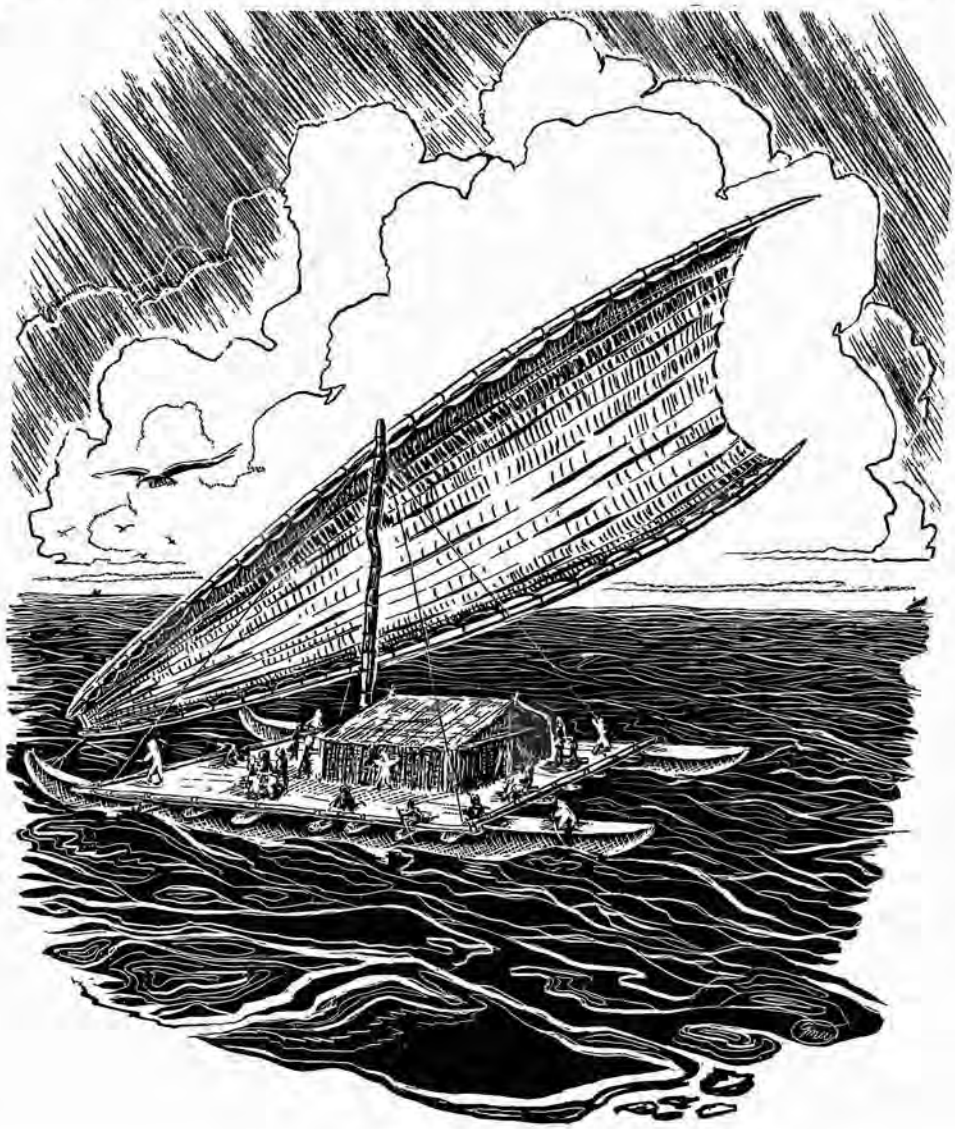
Violent storms also took their toll. Mountainous waves driven before gale winds separated little fleets, destroying some vessels and blowing the rest every which way over hundreds of miles of water. The probability of survivors, so separated, of ever finding each other was extremely remote. But enough members of a tribe did manage to withstand the violence of nature to finally raise another island. Here they would land to re-establish shoreside living. If the priests proclaimed it the "promised land", thanks would be given the gods for leading them safely there and relieving them for all time of the perils of further migration. If the new island was either populated or declared not to be the permanent home, the tribe would settle down to build up its strength and resources for a further trip.

Even though the new island was only to be a stepping stone, tribal relics and religious items were carefully stored in a temple erected by the people as soon as practical after their safe arrival. Houses were built, crops planted and the business of everyday survival became the paramount object. In back of all the activity, however, was the relentless urge to move on and find the utopia promised. The longer they stayed, the stronger the urge became until finally a date of departure was set. Then the whole process of preparation for the impending sea voyage commenced once again.

How these people managed to locate the many small, widely separated islands that dot the Pacific is truly a miracle. But it was sort of a planned miracle, assisted by a thorough knowledge of certain natural phenomena peculiar to that part of the world. They had neither charts nor compasses. They had no knowledge of mathematics. They could not "shoot" a celestial angle or for that matter establish a fix. They did have a knowledge of various constellations, though, as well as the approximate position at which each one would be found on the celestial sphere at various seasons of the year. They also knew where the sun should be during every hour of the day and steered by it. They could read weather signs extremely well, even to what the running swells of the sea presaged. And they had an uncanny knack of picking the right winds, the winds which would last for weeks, speeding them on their way.

The interpretation of natural phenomena which pointed out approximate direction and location of land was probably these ancient navigators' most prized asset. The horizon limit of a little fleet stretched out over twenty miles of ocean was, at best, not more than 400 or so square miles. Considering the distances involved it would have been extremely simple to miss an island just beyond the horizon. These splendid sailors, however, saw certain things and knew how to read them. For example, island birds frequently spent the daylight hours roaming far from land in search of schooling fish. A Polynesian sailor upon seeing them, would alter course in the direction of their evening flight, knowing full well it would lead to land. Clouds and cloud formations also told a story. A high-piled formation usually indicated the location of an island. The underside of a low-lying formation which had a greenish cast to it reflected the presence of a lagoon below. A keen native sense of smell similarly played a part. The warm, humid tropical air carried the tell-tale odour of land, particularly during the hours of darkness. Certainly obvious facts, yet knowing how to use them properly was what made the ancient's feats even more extraordinary.

Modern Polynesians use virtually the same methods of ocean travel as their ancestors did. As a matter of fact, during the last war, the United States Navy prepared a survival-at-sea manual, discussing in detail the Polynesian methods of finding land and surviving the rigors of long days at sea. And it worked. Many sailors as well as airmen, alive today, owe their survival to those ancient sailors who followed the flights of birds to discover uninhabited islands where their families could settle down permanently and live forever free from hunger, thirst and the punitive actions of more warlike people.
—*The Compass.*



OFFICERS AND MEN

Navy League Cadets Awarded Trophy

The Navy League Proficiency Trophy for the best Cadet Corps this year went to Edmonton Navy League Cadet Corps No. 11.

The award was presented by the Hon. Dr. J. J. Bowlen, Alberta's lieutenant-governor to Lt.-Cdr. Bernard Feehan, commanding officer of the corps.

The Navy League Cadet Corps is composed of boys not old enough to enter the Royal Canadian Sea Cadet Corps.

Bonaventure Mourns Loss of Two Pilots

Separate accidents took the lives of two Royal Canadian Navy pilots in March. Both were from 871 Squadron, flying Banshee jet aircraft.

Lt.-Cdr. Brian Bell-Irving, 32, of Vancouver, died when the brakes apparently failed while taxiing after a normal landing and the aircraft swerved over the side of the *Bonaventure*. His body was recovered by the *Haida*.

Lt. W. T. Troy, 29, of Campbellton, N.B., was on a flight from *Shearwater* to join the *Bonaventure* off Florida when his aircraft was reported overdue. It was considered the aircraft crashed near Mayport Beach, Florida. A search was carried out by U.S. Navy, which recovered floating wreckage.

Six Given New Appointments

Changes in the appointments of six senior officers of the Royal Canadian Navy were announced in March by Naval Headquarters.

Captain L. Lysons Atwood, who has been Director of Naval Training, will take up the appointment of Director of Naval Intelligence on April 17.

Captain Frank B. Caldwell, Director of Naval Intelligence since September, 1956, will become Director of Personnel (Officers), on April 21.

He succeeds Captain James C. Pratt, who on June 25 will take command of the *Crescent* with the additional appointments of Captain Second Canadian Escort Squadron and Senior Officer in Command. The squadron is based at Esquimalt, B.C.

The "admiral" of the United Nations Emergency Force Fleet, which is composed of one landing craft, was temporarily beached when rotation caught up with his crew of soldiers. PO David A. Kurts, the only member of the RCN attached to the UNEF, is shown chatting with an Egyptian building a fishing boat. Attached to UNEF headquarters at Gaza, Egypt, PO Kurts went back to plying his "trade route" between Gaza and Beirut, Lebanon, after a new crew had been provided. (O-10396)

Captain Pratt will succeed Captain Michael G. Stirling, who on July 25 will take up the appointment of Naval Member of the Directing Staff of the National Defence College, Kingston, Ont., with the acting rank of commodore.

Cdr. Edgar S. MacDermid, has been appointed to Naval Headquarters temporarily as Director of Naval Training.

Cdr. Daniel L. Hanington, has assumed Cdr. MacDermid's former appointment as executive officer of *Stadacona*.

Leading Seaman Commissioned

A former leading seaman, James B. Luff, 29, has been promoted to the rank of acting sub-lieutenant (S).

Following a six-week officers' divisional course at *Cornwallis,* Sub-Lt. Luff will take up an appointment at *Shearwater,* until October, when he will begin a supply officers' technical course at the naval supply school in Ville la Salle.

Sub-Lt. Luff was born in Portsmouth, England, and served in the British Army from June 1946 until Septeber 1948 and in the Royal Canadian Air Force from June 1952 to March 1953.

He entered the RCN at London, Ont., in June 1953 and subsequently trained and served in establishments on the East Coast and at sea in the *Quebec* and the *New Liskeard.*

Former SBA Promoted

CPO Sidney R. Wallace, 34, has been promoted to the acting rank of commissioned officer (medical technician).

Cd. Off. Wallace was born in Detroit, Mich., and entered the RCNVR in April 1942 at Ottawa, as a sick berth attendant. From 1942 until the war's end he served in naval hospitals on the East Coast and at sea in the *Swansea.* He transferred to the regular force in December 1944.

Since the war, Cd. Off. Wallace has served in naval hospitals on both coasts and in a destroyer, a frigate and an Algerine coastal escort.

Following an officers' divisional course at *Cornwallis,* he will take up the appointment of hygiene officer on the staff of the Command Medical Officer in Halifax.

Cdr. Husher Takes Command of Haida

Cdr. John Husher has been appointed in command of the *Haida* effective April 7.

Cdr. Joseph M. Paul, who has been officer-in-charge of the Leadership School at *Cornwallis* since May 1956 succeeds Cdr. Husher as officer-in-charge of the Gunnery School at *Stadacona.*

Naval Educator Dies in Ottawa

Lorne N. Richardson, 71, first professor emeritus of Carleton University, died in Ottawa on March 10. Professor Richardson had been associated with the Royal Canadian Navy, since its beginning when he was professor of mathematics at the Royal Naval College of Canada at Halifax in 1910.

Two paintings by A/Captain (E) John Osborn, Command Technical Officer at Esquimalt, now are hanging in the Art Gallery of Greater Victoria. Captain Osborn and Collin Graham, curator of the art gallery, are shown here with the paintings, the upper one a scene in London, England, the lower, a street in Hull, Quebec. A black-and-white reproduction of one of Captain Osborn's paintings, an idealized picture of the Thames River with St. Paul's Cathedral in the background, was reproduced in the December 1955 issue of "The Crowsnest". At that time he was attached to the Canadian Joint Staff, London. (E-44665)

Professor Richardson was born in Wallaceburg, Ont., and was a graduate of the University of Toronto and McGill University. He taught at the RNCC from 1910 until the outbreak of the First World War when he entered the Canadian Army as a lieutenant in the University of Toronto 1st Tank Battalion.

Following the war he resumed teaching at RNCC, by then at Esquimalt, B.C., until the college closed in 1921. In 1922 he became professor of mathematics at the Royal Military College in Kingston where he served until 1940, the last two years as director of studies.

In May 1941, he was appointed Director of Naval Education at Naval Headquarters, Ottawa, with the rank of Honorary Instructor Commander, and remained at this post until March, 1945. The following year he became the first full-time lecturer at Carleton University and then professor of mathematics until he retired in 1957, although he continued as lecturer.

He is survived by his wife, the former Helen Mackenzie of Chatham, N.B., a daughter, two sisters and two brothers.

Supply Officers Exchange Posts

Two senior officers of the Supply branch exchanged appointments on March 31.

Cdr. (S) D. A. Collins succeeded Cdr. (S) K. Mc. Roy as supply officer of the *Bonaventure*. Cdr. Roy took up Cdr. Collins' appointment as Manager Supply, Atlantic Coast, and as officer-in-charge of the Naval Supply Depot, Halifax.

R. Baker Guides A-Sub Program

The naval architect who was primarily responsible for the advanced design of the Royal Canadian Navy's new destroyer escorts will guide the construction of the Royal Navy's first nuclear submarine, to be known as HMS *Dreadnought*.

The Admiralty has announced the appointment of Rowland Baker, OBE, to Technical Chief Executive *Dreadnought* Project.

After serving with the Royal Canadian Navy for eight years as Naval Constructor-in-Chief, Mr. Baker returned to England in July 1956. During the last two and one-half years of his service in Canada he held the rank of constructor commodore, RCN(R).

ROWLAND BAKER, OBE

will guide the design and construction of the Royal Navy's new nuclear-powered submarine, the Dreadnought. Mr. Baker was for eight years Naval Constructor-in-Chief at Naval Headquarters, Ottawa, latterly with the rank of constructor commodore, RCN(R).

Two Sea Cadets embarked in the Skeena learn to fire a Bren gun during the training cruise to the Far East of five destroyer escorts from Esquimalt. Left to right are Cadet Jack Cave, of Moose Jaw, Sask.; PO Jim Tyre (instructor), Victoria, and Cadet Jim Scott, Calgary. (CR-190)

His new Royal Navy appointment, designed to strengthen the organization by centralizing the control of the *Dreadnought* project, was first mentioned by the First Lord of the Admiralty in his explanatory statement on the navy estimates.

The chief executive's tasks will include the direction of all departments and contractors participating in the project and the control of an integrated constructive mechanical and electrical engineering project team.

Mr. Baker is a member of the Royal Corps of Naval Constructors. While in Canada he played a great part in enabling major warships to be designed and built from Canadian sources. The St. Laurent class of anti-submarine frigate and the icebreaker *Labrador* are the best-known of these ships.

Aged 49, Mr. Baker entered Admiralty service at Chatham Dockyard in August 1923. In 1927 he was selected for special training at the RN College, Greenwich, and entered the Royal Corps of Naval Constructors as an assistant constructor in September 1931.

After service at sea and a short appointment to Portsmouth Dockyard, he was transferred to the Naval Construction Department, Admiralty, in June 1934 where he was engaged on designs of sloops, minesweepers and surveying vessels until May 1937 when he was appointed to HM Dockyard, Sheerness.

During 1941 he became closely associated with the design and production of landing craft.

His duties as Acting Chief Constructor and Superintendent of Landing Craft in November 1942 included a visit to the U.S.A. where the Bureau of Ships of the Navy Department started designs for a huge building program of landing ships for use in the Pacific and against Italy and Germany.

The value of his services was recognized by the award of the OBE in the New Year's Honours List of 1946 and by the award of the American Medal of Freedom with silver palm in October of that year.

Veteran of Two Wars Deceased

Cdr. F. N. D. Carmichael, 63, of London, Ont., died in London on March 16. He was a former executive officer of *Hunter*, Windsor naval division, and had served in two world wars.

During the First World War he served as a lieutenant from 1916 to 1918. He re-entered the navy in 1942 and served as recruiting officer at *York*, Toronto naval division, executive officer of *Hunter* and as commanding officer of *Prevost*, London naval division. He retired in 1946.

VOTING IN THE ARMED SERVICES

How Our Democratic Rights Are Protected

A FOUNDATION STONE of democracy is the right of adults to select from properly qualified candidates their federal, provincial and municipal authorities in the essential field of politics. It is more than the right to vote — compare Canada with those countries which allow a vote but provide no choice of candidates — it is the right to judge between various platforms and various people. It follows that the system will work well only if two conditions are met: (*a*) we have a sufficient number of able volunteers to run for office; (*b*) there is an interested and intelligent electorate.

How is this right of selective vote preserved for the officers and men of the armed forces? It is recognized that they, more than any other group, are liable to be away from their usual homes—indeed even out of the country—at election time and special provisions have therefore been made in what is termed, "The Canadian Forces Voting Regulations".

When the Prime Minister obtains the Governor General's signature to a writ for a federal election, a complex organization begins its life. By regulations Canada is divided into three voting territories: the Maritimes with headquarters at Halifax; Ontario and Quebec with headquarters at Ottawa; the West with headquarters at Edmonton. In addition, the chief electoral officer (a senior, permanent civil servant) is empowered to establish a voting territory for any area outside Canada where substantial numbers of Canadian forces electors are stationed. Such a territory has been established to cover Western Europe and Egypt with headquarters at London, England. Members of the forces in out-of-the-way places such as Baffin Island, Indo-China or Israel are attached to one of the four established territories and arrangements are made for them to cast their vote before appropriate deputy returning officers.

A Canadian forces elector is any member of the regular forces of Canada—Navy, Army and Air Force—anywhere in the world and the wife of such member accompanying him outside Canada. The Canadian forces were placed on active service by order-in-council at the time of Korea; this order-in-council has never been revoked and we therefore continue to be on active service. For the purposes of the Canadian Forces regulations, this means that all members of the regular forces, whatever their age, are entitled to vote. It also means that any member of the Reserve, who is on full-time duty during the voting period, is also entitled to a vote, whatever his age.

For all voting territories, a civilian special returning officer is appointed by the Governor-in-Council. The functions of the special returning officer are to provide voting supplies, to maintain a headquarters where complete ballots are received, sorted and counted and to dispose of unused material after the election.

Then the Minister of National Defence appoints to each special returning officer a permanent force liaison officer from each of the three services. His duties are to deal directly with each commanding officer within his territory, to implement the regulations and also to carry out any instructions of the special returning officer or, to put it another way, his task is to provide every Canadian forces elector with the information and the facilities to cast his vote.

Because most of them are away from home constituencies, members of the armed services operate under a somewhat different set of election rules than the civilian. Naval liaison officer for the federal general election in the Maritimes was Instr. Cdr. C. H. Little (second from left), and the deputy returning officer, Stadacona, was Lt.-Cdr. James C. Mark. The prospective voters are AB J. A. Lesperance and AB Robie G. Pearce. Four provinces are represented. (HS-51945)

How We Vote

The federal election of March 31 has come and gone, and the results are known throughout the world. In this election, man for man, civilians and members of the armed services had an equal voice; each individual had the right to vote for the candidate of his choice, each had the right to record his vote secretly and without coercion.

Because of the somewhat nomadic nature of the armed forces, special arrangements must be made for the recording of their votes and there must be certain privileges and obligations which are unknown to civilians.

The differences between service and civilian voting are explained in the accompanying article by Instr. Cdr. C. H. Little, Command Education Officer, Stadacona, *who was naval liaison officer for the federal general election, Maritime Area.*

By regulation, each liaison officer informs each commanding officer in his area that a federal general election has been ordered and requires him to publish in daily orders a notice of the same together with an announcement that Canadian forces electors will vote during the week preceding election day and that the hours of voting and the location of the polling booth will be stated in a further notice. This announcement, like others in the regulations, has a name: Form No. 5.

At the same time, each commanding officer is required to designate a deputy returning officer whose function is in simple terms—to manage the voting in his ship or establishment. In practically all cases the deputy returning officer now becomes the commanding officer for the purposes of the general election and proceeds to act with the liaison officer to implement the regulations.

Within two weeks of the publication of Form No. 5, each unit is required to furnish a list of all Canadian forces electors borne and their place of ordinary residence as stated on an official form, No. 15, No. 16, No. 17 or No. 18.

It might be well at this stage to explain the purpose and importance of these statements of ordinary residence.

If we were civilians, we would be enumerated on a polling list wherever we lived in Canada (with the legal requirements of 12 months' residence in the country, as some of our wives are finding out to their dismay) and would vote around the corner. In this arrangement there is little opportunity for either double dealing or flexibility: we live in a certain place, we are free and 21, we are in the polling booth on election day and we cast our vote; otherwise NYET! As members of the active force, we have much greater individual protection and much wider allowances; at the same time there are guarantees that we cannot be stampeded or dragooned, as has happened in more than one country during the electoral centuries of the past.

Instead of being enumerated just before an election, we place on file a statement of ordinary residence which remains our domicile for voting purposes unless we alter it formally in December of any year. Thus, wherever an election may find us, we are already listed as a voter. This is important because it protects our individual rights and prevents packing an electoral district by moving bodies of armed forces when an election is ordered.

The Armed Forces vote during the six week-days preceding election day in order to permit the maximum number to vote despite the exigencies of the service and the time is not too long for large establishments such as *Stadacona, Naden, Shearwater* and *Cornwallis*. Nor is it too long when operations are considered, because a ship will often be unable to vote during most of the period.

When a Canadian forces elector comes to the polling booth established in his ship or establishment, at the time and place notified by the commanding officer, he appears before the deputy returning officer, identifies himself and is shown his name and place of ordinary residence on the nominal list. The place of ordinary residence sets the electoral district and hence the candidate for office. The Canadian forces elector is required by the deputy returning officer to complete a statement of identity and district and is then given a ballot and a plain envelope. He retires to a private booth with the list of candidates, writes the name of his choice on the ballot and encloses it in the little envelope. He then returns to the deputy returning officer and puts the little envelope inside an outer envelope which has on one side the statement referred to above and on the other the name and address of the special returning officer. The outer envelope, which goes post free, is then mailed.

When the outer envelope is received in the headquarters of the special returning officer, it is first scrutinized to ensure that it has been completed and signed by the elector and witnessed by the deputy returning officer. This is another safeguard to protect the individual and to prevent irregularities. Then all outer envelopes for each district are assembled together until the order to count the votes is given. At that time all outer envelopes are discarded and the scrutineers, who work in pairs, have before them only a pile of plain brown inner envelopes containing completed ballots. Thus there is no possibility of knowing who voted for whom except in the million-to-one case where only one Canadian Forces elector, out of the tens of thousands eligible, voted in an electoral district and his name was renumbered. Those are very long odds indeed and for all practical purposes may be disregarded.

After the voting week, the deputy returning officer returns unused material and accounts for the ballots which were issued to him. Some ballots will have been used by Canadian forces electors, one or two will have been spoiled, the remainder he will return to the special returning officer and heaven help him if the number accounted for does not coincide with the number issued! Not even a supply officer and his cash are held to stricter account. Again we have an instance of safeguarding the elector's vote by ensuring that it cannot be falsified.

This whole system is admirable, combining as it does the maximum of security for the individual secret ballot with the utmost opportunity for informed selective voting. It is heartening for members of the armed forces to know that the system of government which they have enlisted to protect is concerned with the rights of all individuals to exercise the most important right of democracy: the secret, selective ballot.—C.H.L.

NEW SOURCES OF POWER - -

How Do Gas Turbines and Nuclear Energy Fit into the Naval Picture?

SINCE THE END of the Second World War the gas turbine engine has attracted a great deal of interest and in many quarters enormous advantages were predicted. Because the high temperatures, essential for high thermal efficiency, exist continuously and in areas where cooling is not a useful part of the cycle, as opposed to diesel engines and boilers, metallurgical advances are even greater prerequisites to improved efficiency in gas turbines than in any present conventional engines.

The net result of the present metallurgical limitations is that a very high air to fuel ratio is required in comparison to boilers or reciprocating internal combustion engines. This in turn results in a great deal of the mechanical power produced being used in merely compressing air. As a result of this large circulating power, the effective design of gas turbines requires a high efficiency in all components if the horsepower output is to be achieved efficiently and economically.

The Author

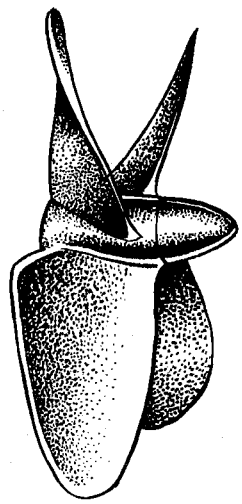
On March 4, Commodore (E) B. R. Spencer, Engineer-in-Chief of the Royal Canadian Navy, addressed the technical section of the Canadian Shipbuilding and Ship Repairing Association at the association's annual meeting in Montreal.

Speaking on the subject "Some Recent Developments in Marine Propulsion of Naval Vessels," Commodore Spencer for the most part dealt with the machinery developed for the St. Laurent class destroyer escorts.

However, in the latter portion of his address, Commodore Spencer discussed the possibilities of the gas turbine and nuclear power and their application to naval vessels of the future. This portion of the address is reproduced here.

The Royal Canadian Navy has been closely following the development of gas turbines and their possible use. However, before a new type of prime mover can be considered acceptable by any user, it must compare favourably with the performance of existing machinery.

One of the most promising applications is the use of gas turbines to provide "boost power" in a warship, for



as you are aware naval vessels must be capable of speeds much in excess of the normal cruising speed. The boost concept is to have a steam plant only large enough to provide cruising power, the balance being provided from gas turbines. This results in a light machinery installation with very good efficiency at cruising power and moderately good efficiency at full power.

This concept of boost power can also be applied to high speed launches, such as motor torpedo boats, by fitting together a diesel engine and a gas turbine to give a compact high-power plant which is comparatively easy to maintain and which burns less volatile fuel compared to the wartime MTBs fitted with aircraft piston engines. Small boats can also be considered suitable for gas turbine propulsion if a high speed is desired and fuel consumption is of secondary importance.

The fuel consumption of gas turbines can be made competitive with steam installations, as ably demonstrated by several merchant ships. However, this requires the use of a complex cycle with numerous heat exchangers and inter-coolers which occupy almost the same space and weight as that of a conventional steam plant.

The difficulty of burning other than gaseous or distillate fuels is a major disadvantage of the gas turbine and if the cheaper and more plentiful residual fuels are used then greatly increased maintenance charges would have to be faced.

A New Freedom

"It was not fully realized until the Nautilus *actually operated, just what a tremendous advantage of mobility the ship possessed.* Nautilus *could move with complete freedom beneath the seas. The day of the diesel submarine was over.*

"What will nuclear power mean to surface ships?

"An individual ship, such as the guided missile cruiser USS Long Beach *will, like the submarine, experience a great increase in mobility. It is well known that the captain of a ship must take heavily into account his available fuel oil supplies when planning any operation. The selection of speed is a balance between the desire to arrive at the destination in the shortest possible time and the need to minimize fuel consumption. The Second World War Pacific operations are one long history of the struggle with supplies and replenishment. Nuclear power eliminates the problem of refuelling at sea."*— Rear-Admiral Hyman G. Rickover, USN, in *"All Hands"*.

The recent successful development of the free-piston engine is a promising alternative to the medium powered diesel engine. The fuel consumption is comparable and the basic simplicity of the gas turbine is largely retained. The moderate gas temperatures and much smaller circulatory power needed makes practical the use of a reverse turbine, thus overcoming one of the major difficulties of the gas turbine for which a reversing gear train or controllable pitch propeller is necessary.

The free-piston engine, however, retains the problems associated with diesel engines, such as cylinder liner wear and fuel injection, but has the advantage of fewer moving parts and easier maintenance of the gas generators. These engines are approximately equal in weight and space to diesel engines, one big advantage being that of reduced maintenance costs.

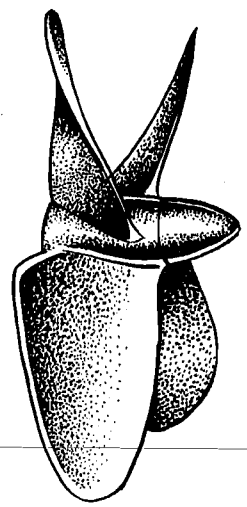
Summing up, therefore, on future trends for the machinery for naval vessels of any considerable size, it seems doubtful whether there will be any radical change from the present basic methods of propulsion. The prime movers are almost bound to be steam turbines for some time to come, with the possible introduction of a gas turbine boost, coupled for higher powers. It must be remembered when considering this type of installation that we are confronted with the problem of carrying separate fuels, apart from providing some suitable form of gear box in which to match the two drives, and have yet to simplify the requirement of operating the gas turbine in the astern direction. There is, however, no doubt in my mind that these problems will eventually be solved, in order that we can press forward to installing such a combined unit in a ship, the gains being too attractive to ignore.

THE LAST and most revolutionary change which is likely to come about in marine engineering design, in the very near future, is the introduction of nuclear power. Nuclear reactor design, although still in its infancy, has, from the successes gained to date, indicated that this source of power possesses enormous possibilities, not least in the field of marine engineering.

While at present it is difficult for a country the size of Canada to justify the necessary vast expenditures for the construction of nuclear powered warships, it is neverthless essential to keep in close touch with all developments in the marine field with a view to being prepared to meet a requirement in due course. This preparation would mainly include the training of personnel and the provision of experience in how to approach the various problems which will be encountered when dealing with the design and construction stages of a nuclear propelled vessel.

From a purely military point of view, the advantages of nuclear power are obvious. To state these briefly, a nuclear powered ship would have a very high endurance and would be capable of maintaining a continuous high speed within the limitations of the fuel life. No oxygen is required in order to obtain the heat release and the problem of exhaust gases is eliminated, the last two factors being of prime importance in the construction of submarine machinery.

In the case of surface vessels, both uptakes and intakes are eliminated leaving the upper deck clear for additional armament, the new profile giving the ship great resistance to atomic war-



fare. With no requirement for fuel bunkers, the fire hazard is greatly reduced, vulnerability below the water line reduced and the ability to resist action damage of all kinds heightened.

These advantages are however, tempered by certain disadvantages, not the least being the large weight of the biological shield needed, together with the higher initial capital outlay and development costs incurred. Notwithstanding, it is apparent that once one nation has taken the lead in the nuclear powering of warships, it would be essential for competitive nations to follow suit, observing that the advantages would revolutionize naval strategy.

Time does not permit me to engage in a lengthy discussion on the technical aspects of nuclear power, but I would like to compare the nuclear requirements of a merchant ship with those of a warship, in order that the problems that will be confronted by the naval designer may be more readily understood:

(*a*) *Commercial Requirements*

(1) To be comparatively economic, operationally.

(2) To be of a relatively simple design and thus reasonably inexpensive to build and to possess ease of operation.

(3) To have a minimum turn-round time.

(4) To possess a reasonable speed, say 16-17 knots.

(5) To possess high endurance at full speed.

From commercial reactor design to date, it would only be possible to achieve competitive economic operation in a large vessel. From a first-cost point of view, it is probable that continuing development will cause the cost of reactor systems to decrease. It would seem that the only one, of the above requirements, which could be met today is minimum turn-round time, although it is probable that reasonable speeds could be obtained in large vessels.

(*b*) *Naval Requirement*

Repeating the former statement made on the principal requirements for a warship, we observe that the naval designer must contend with:—

Reliability
High endurance at cruising speed combined with high top speed
Low weight
Small space and height
Ease of operation
Ease of manufacture
Ease of maintenance
Resistance to shock
Silence of operation
Adaptability to automatic control.

It must be noted that, to date, it is recognized by the navies of the major powers that the pressure water reactor (PWR), using enriched fuel, is the only reactor system which comes near to meeting the naval requirement, although the costs involved of such a system prohibit its general adoption.

It is considered that the PWR can readily satisfy such points as reliability, high speed endurance, low weight and small space and height. Ease of operation is difficult to assess without experience, but a reactor system is certainly an area requiring employment of fully automatic controls and, thus, it may be expected that control and operating problems will be minimized.

Ease of manufacture and maintenance can only be assessed on an intuitive basis. It is known that many reactor components are at this time requiring special manufacturing techniques, but it is expected that this problem will eventually be rectified.

As is well known, resistance to shock is always a naval requirement, and it is believed that no difficulties will arise in fitting this requirement into a nuclear design. Silence of operation to an acceptable degree should be available in a reactor-steam-turbine plant. The only satisfactory way in which to operate a reactor plant would be through the maximum use of automatic controls.

It is obviously not possible to achieve perfection in each and every one of these requirements and, thus, the naval machinery plant must be the best compromise of all these features.

As yet, the RCN has not outlined its future requirement for nuclear power, although it is in order to presume that a program will develop at some future date, the decision resting entirely on the outcome of developments in this new field of endeavour.

BRIEFLY REVIEWING nuclear reactor development, the pressurized water reactor (PWR), utilizing enriched fuel, has proved itself to be fundamentally reliable. Developed primarily for a military application, the system is compact but extremely costly.

A further development to the pressurized water reactor (PWR) is the introduction of the sodium-cooled reactor to reduce the size and capital outlay. This reactor system, however, calls for a novel and therefore expensive arrangement to contain the sodium circuit and is beset with many problems.

The graphite moderated gas-cooled reactor, more commonly known as the "Calder Hall Type," is a reactor employing natural uranium, and in its present stage of development might be considered practicable for fitting in a super-tanker or some other large vessel.

The boiling water reactor, already applied to a commercial undertaking in the U.S., is a safe and reliable system.

Certain other homogeneous and gas-cooled reactor systems are being developed, none at this early stage appearing to emerge as a competitive and economical solution for marine propulsion.

The need does exist, however, for the training of personnel and the gaining of experience in Canada, if we are to be ready to meet the nuclear propulsion requirement in the near future.

The RCN will probably be using oil-fired vessels for some considerable time to come and, if squadrons composed of such vessels are to be competitive with nuclear powered forces, then I think it is not unreasonable to assume that some type of replenishment vessel propelled by nuclear power might greatly assist in enabling conventional fleets to operate alongside nuclear fleets without embarrassment to either.

A tanker fitted with a modified "Calder Hall Type" reactor using slightly enriched uranium would, therefore, appear to be practicable if one considers the hull form, which is eminently suited to the weight and space requirements, the shielding problem which lends itself in this design of ship and the fact that a tanker's normal operation is one of maximum power at sea coupled with a fast turn round in harbour.

The progress of nuclear power for marine purposes depends entirely on the future development of reactor designs, and I can only state again that the Royal Canadian Navy has not limited its specific interest to any one type of vessel, but that developments in all fields are being studied very closely.

The primary purpose of entering the nuclear propulsion field is quite naturally to obtain a nuclear vessel, when it becomes feasible to do so. However, there is a secondary and very important aim, and this is to promote and encourage nuclear reactor technology to flourish in Canada. It is hoped in this way to develop industrial organizations who will be capable of the design, manufacture and repair of nuclear power plants for naval and commercial vessels alike.

In conclusion, it takes very little imagination to realize that all this is feasible and possesses no magic. This has been most convincingly demonstrated by the United States Navy and is in the process of being demonstrated by the Royal Navy and the USSR.

The introduction of nuclear power to larger surface vessels is inevitable. The change to nuclear plants may be compared to the change from coal to oil or reciprocating engine to steam turbine. Traditionally, it will take time to overcome prejudice where the new system must be compared with a fully-developed predecessor. Practical demonstration is the only way to overcome these difficulties.

The development of nuclear plants and the solution to the problems which arise is entirely a matter of engineering and can only be dealt with by the engineering industry. There are no insuperable problems in the development of these new systems, but at the same time we cannot assume that there is not a large task ahead of us calling for wise direction and, above all, technical excellence.

The second half of the 20th Century will, undoubtedly, witness newly-won achievements in the field of naval propulsion go from strength to strength, but in all this let us be reminded of some words written by the late Rudyard Kipling:

> *"This new ship here is fitted accordingly to the reported increase of knowledge among mankind. Namely she is cumbered, end to end, with bells and trumpets, and clocks and wires which, it has been told to me, can call voices out of the air or the water, to con the ship while her crew sleep. But, sleep thou lightly, O Captain. It has not yet been told to me that the Sea has ceased to be the Sea."*

AFLOAT AND ASHORE

PACIFIC COMMAND

HMCS Ontario

Amid the pomp and pageantry of a "royal court" held in the middle of the Pacific ocean, five members of the *Ontario's* ship's company were specifically honoured by King Neptune in early March as the *Ontario* crossed the equator en route to the Fiji Islands, New Zealand and Australia in the course of a training cruise for 50 Venture cadets.

The Ancient Order of the Dead Fish and Chain (Sea Dog First Class) was conferred on Captain J. C. Littler, the *Ontario's* commanding officer.

Cdr. D. G. Padmore, the executive officer, received the Recent Order of the Pusser's Tent in commemoration of a Honolulu newspaper report which said, in referring to the *Ontario's* quarterdeck awning, that "a large tent' had been erected to accommodate 200 guests at a reception held in Pearl Harbour.

Cdr. (E) Robert Lane, the engineer officer, was awarded the Order of the Busted Prop, while the ship's dental officer, Capt. J. J. N. Wright, RCDC, received the Order of the Snag Tooth.

Twenty years of service in which he had never lost a piece of ship's cutlery or broken a glass won the Order of the Greasy Spoon for the chief cook, CPO S. A. Johnston.

The ceremony, which took place on March 13, was preceded the night before by the arrival of the herald of King Neptune. The herald emerged with his retinue from the depths in a sea of spray and fireworks to announce to one and all the coming of His Most Oceanic Majesty on the morrow, and to warn that all "tadpoles" would be initiated before crossing in his domain. For this purpose a list had been compiled of all those who had never before crossed the line. Of 634 officers and men on board, 326 were found to be tadpoles.

At two bells of the forenoon watch on the following day, King Neptune and his court arrived and took station on the quarterdeck, where the ship's company was brought to attention with the playing of the oceanic anthem.

The awards were presented first, after which the court proceeded to the boat deck, where "requestmen and defaulters" were brought before King Neptune, who summarily disposed of cases whose crimes had been brought to his royal attention.

The "miscreants" included Cdr. W. M. Kidd, the cadet training commander; Instructor Cdr. G. C. E. Gray; Captain Wright, the dental officer, who just a few moments before had been honoured by King Neptune; Instructor Lt.-Cdr. L. W. Maundcote-Carter; Belgian Cadets Jean L. Ceux, Siegfried D. Deleu and Claude C. Sedeyn, and Ldg. Sea. R. B. Bentley.

Following disposal of these cases, the initiation of the other "tadpoles" proceeded briskly and was completed by six bells of the forenoon watch.. Thereupon Neptune and his court, not being used to fresh air, leapt into the water and disappeared.

"Why, if it isn't old Neptune himself, out of the rig of the day!" Ldg. Sea. Ross Sinclair strikes a carefree nautical pose during the Ontario's visit to Acapulco, Mexico, early this year. (OT-3722)

US Navy to Spy on Mars from Balloons

Two U.S. Navy balloon flights this fall "should give a real clue" to the possibility of life on Mars, according to Rear-Admiral Rawson Bennett, USN, Chief of Naval Research, addressing the American Institute of Electrical Engineers in Chicago.

Admiral Bennett said two scientists will ride the balloon up to 80,000 feet and use a 16-inch telescope to obtain the first clear look at Mars.

The admiral said the men expect to be able to measure the water vapour content and the oxygen of the Martian atmosphere.

"What they discover," he said, "may solve the mystery of those canals and should give us a real clue to the possibility of life as we know it on Mars."

Admiral Bennett said this flight "will inaugurate a new technique of high altitude astronomical observation, which a number of eminent astronomers and observatories predict will lead to startling advances in astronomy and astrophysics."

Summing up other navy research, the admiral said: "Living organisms have been recovered from ocean depths never before reached. We have received radio signals that have been sent curving two or three earth radii out into space to test whether a sparse medium actually fills the void between the earth and the sun.

"By probing more than 1,000 feet down into the Greenland ice cap, there have been recovered cores which carry in their undisturbed annual layers of snowfall a record of the earth's climate reaching back as far as 2,000 years."—*Armed Forces Press Service*

ATLANTIC COMMAND

HMCS Stadacona

The Chiefs and Petty Officers' mess at *Stadacona* has two more worthy ventures to its credit.

A recent addition to their mess is an attractive, well-stocked snack bar, catering to members and guests, which is operated by the Canadian National Institute for the Blind (Maritime branch). Profits from the snack bar go to the CNIB.

Their other gesture was the donation of $213, the proceeds of a turkey social, to three orphanages in the Halifax area. The institutions, the Protestant Orphanage, the Nova Scotia Home for Coloured Children, and St. Joseph's each received a cheque for $71.

HMC Communications School

At HMC Communications School, *Cornwallis*, Petty Officers Alexander Muse and Stewart Shufelt have joined the visual staff.

Two TG1 qualiifying courses completed in February, CR114 and CV97. Graduates of CR114 class were: Ordinary Seamen Douglas Boicey, Edward Eaton, William Elliott, Gilbert Fraser, Brian Howard and Frank Walton.

Graduates of CV 91 class were: Ordinary Seamen John Huxley, Henry Serjeant, Gale Shirreffs, Gary Wilson and Paul Zoschke.

Ldg. Sea. Carl Oakes serves goodies to three hungry guests during a party held in the Bonaventure for 180 orphans and crippled children at Charleston, South Carolina. The "Bonnie" was part of a Canadian naval task force visiting the U.S. port during Atlantic spring exercises with units of the U.S. Navy. (HS-51782)

Ord. Sea. Eaton, of CR114, and Ord. Sea. Huxley, of CV97, claimed the prizes as top men in their class.

Five C2CRs commenced an 18-week instructors' course at the school to qualify for TG4. They are CPOs Charles Brown, William Bruce, John Layton, Russell Maynard and Wilson Mouland, in class R15.

Also starting an instructors' course are six C2CVs. They are CPOs Jack King, Lloyd Kirkpatrick, Robert Meadows, Ian McKellar, Lindsay Shepperd and Douglas Worthington, in class V15.

Before starting their new course, the chiefs in both R15 and V15 completed a three-week instructional technique course at Stadacona.

NAVAL DIVISIONS

HMCS Carleton

Eighteen students attending university in Ottawa, were formally promoted from probationary cadet to cadet in their respective University Naval Training Divisions in a ceremony at *Carleton*, Ottawa naval division, on Sunday evening, March 9.

The inspecting officer, who also presented certificates to the cadets, was Captain E. T. G. Madgwick, Director of Naval Manning at Naval Headquarters.

The UNTD cadets, most of whom are in their second year at university, enrolled last September as probationary cadets. They are students at the University of Ottawa, Carleton University and St. Patrick's College.

The ceremony, consisting of an inspection of the cadets by Captain Madgwick, followed by the firing of a feu-de joie and the presentation of the certificates, began at 8 p.m. At its conclusion there was a tea for parents and friends of the cadets.

HMCS Star

The Hamilton Garrison Officers' Softball League has been active in Hamilton for many years, but this year the enthusiasm was tremendous, with six teams taking part. Despite the added competition the team entered by HMCS *Star* came closer this year to winning than ever before. They lost the final game 5-4 in extra innings to the Royal Hamilton Light Infantry.

Lt.-Cdr. Frank Ross is president of the league this season.

Games were played in the local armouries and a good number of civilians turned out to watch.

HMCS Griffon

The Chief and Petty Officers' mess of *Griffon*, Port Arthur naval division, held its annual ladies night banquet in February, and played host to a large number of guests.

Preceding the dinner was a reception, during which the ladies were presented with rose corsages. Guests included RCAF, Canadian Army and U.S. Navy personnel.

Following the banquet a dance was held at Griffon.

HMCS Cataraqui

CPO Gordon Clarabut, of Kingston, was presented with the HMCS *Cataraqui* Trophy during the annual inspection of the Kingston naval division by Captain A. F. Pickard, Chief of Staff to the Flag Officer Naval Divisions.

The *Cataraqui* Trophy is presented annually to the man who has contributed most to the ship's efficiency during the year.

New Admiral of Royal Yachts

Vice-Admiral Sir Connolly Abel Smith, was relieved as Flag Officer, Royal Yachts, on January 30 by Rear-Admiral Peter Dawnay, and his flag was hauled down in HM Yacht *Britannia* at sunset of that day, the *Admiralty* News Summary reports.

Vice-Admiral Abel Smith was appointed Flag Officer, Royal Yachts, on February 2nd, 1953, at the time when the new post-war Royal yacht *Britannia* was building. He accompanied Her Majesty the Queen during her Commonwealth tour in SS *Gothic* in 1953-54, and then took command of the *Britannia* on April 28, 1954.

Since then, he has been in command of the *Britannia* during her voyages in all the oceans of the world, steaming by the end of 1957 a total of 92,700 miles, including, in 1956-57, a circumnavigation of the world which lasted six months; a voyage longer in time and distance than any performed by a previous Royal yacht. Throughout this time, he was responsible for the safe conduct of the voyages of the Queen and other members of the Royal Family during their travels by sea. Admiral Abel Smith retired from the Royal Navy on leaving the Royal yacht and is to take up farming at his home in Scotland.

Admiral Dawnay, recently Assistant Controller of the Navy at the Admiralty, is a communications specialist who served the major part of his career at sea. He was appointed an Extra Equerry to the Queen on assuming his new appointment.

Admiral Dawnay's flag was hoisted in HMS *Vigo*, a ship of the destroyer squadron which he commanded in the Mediterranean in 1950-52, on the morning of January 30, and transferred to the *Britannia* on the following day.

Origins of Canadian Naval Law

Roots of QRCN Reach Back to Eighth Century

PART OF THE National Defence Act, 1950, can be traced back to the Rhodian Sea Laws (*Lex Rhodia*) which governed maritime commerce in the Mediterranean some 1,200 years ago. Although these "laws and customs of the sea" were probably written in the 7th century, the earliest record remaining is an 11th century parchment, now quite illegible, held in the Vatican library.

The laws of the Republic of Rhodes, themselves originating with the Phœnician merchants of Tyre and Sidon in about 1500 BC, were adopted by Rome, in the Digest of Justinian, and by other Mediterranean states: (1) *Tavola Amalfitana* (Table of Amalfi, near Naples) around 800-900 AD; (2) *Consulato del Mar* (Consulate of the Sea), 1494, in the Kingdom of Aragon, now Barcelona; and (3) the Assizes of Jerusalem. From the latter source the laws were recorded in revised form in the 12th century by William de Forz of Oleron, the commander of part of the Spanish fleet taking part in the Crusades. The Roll or Rule of Oleron is the most important mediaeval source of maritime law and custom; its guiding principle was that punishment should fit the crime:

"Know all men that We, with the aid of upright counsels, have laid down [a current expression!] these ordinances:

"Whoever shall commit murder aboard ship shall be tied to the corpse and thrown into the sea.

"If a murder be committed on land the murderer shall be tied to the corpse and buried alive.

"If any man be convicted of drawing a knife for the purpose of stabbing another, or shall have stabbed another so that blood shall flow, he shall lose a hand.

"If a man strike another with his hand, he shall be ducked three times into the sea.

"If any man defame, vilify, or swear at his fellow, he shall pay him as many ounces of silver as times he has reviled him.

"If a robber be convicted of theft, boiling pitch shall be poured over his head and a shower of feathers be shaken over to mark him, and he shall be cast ashore at the first land at which the Fleet shall touch."

And finally:

"All other faults committed at sea shall be punished according to the customs used at sea."

Richard I, the Lion-Hearted, applied the Roll of Oleron, with little change, to his English fleet; through him the *Lex Rhodia* was adopted as a maritime code, not only in Britain, as the Ordonnances—the earliest known Articles of War—but in the Baltic as the Laws of Wisby (now Gotland, Sweden), and in the north European towns forming the Hanseatic League as the Lubeck or Hanseatic Code. This latter Code made provision for a load-line on merchant vessels several centuries before the House of Commons received into its august midst a certain Liverpool merchant named Samuel Plimsoll. These bodies of law, recording the rights of foreign shipowners and traders, are the original basis for international law, which is only now reaching fruition and attaining wide recognition among the nations.

A development from the laws or Ordonnances of Richard I was the Black Book of the Admiralty, in which was recorded all law relating to seafaring under the British flag. This famous book contained ". . . the ancient statutes of the Admiralty, to be observed both upon the ports and havens, the high seas and beyond the seas, which are engrossed upon vellum in the said book and written in an ancient French language." English was not used in law until 1362; the archaic "Law French" did not become obsolete until 1731. Through the 14th to the mid-18th centuries the Admiralty Black Book was in use as the authority for British maritime law. It too provided for trial and punishment of offences ". . . according to the law and custom of the sea."

Provisions of the ordinary criminal law were added to the maritime law from time to time. For example, an act of Henry VIII in 1537 gave jurisdiction to the High Court of Admiralty to try offences committed on the high seas against the Statute of Treasons, 1352, and certain other criminal statutes: "All treasons felonies robberies murders and confederacies hereafter to be committed in or upon the sea or in any other haven river creek or place where the Admiral or Admirals have or pretend to have power authority or jurisdiction shall be inquired determined and judged in such shires and places in the realm as shall be limited by the King's commission or commissions to be directed for the same in like form and conditions as if such offence or offences had been committed or done in or upon the land . . ."

Although the High Court of Admiralty merged in 1875 with the Supreme Court of Judicature, Roman Law, as derived from the Digest of Justinian through Oleron and the Black Book, remained of considerable authority, but could not be pleaded in common law or chancery courts where case-law and equity took the place of Roman principles. General and particular average, and what is now known as "innkeeper's liability" with respect to passengers, are principles which have survived, without appreciable change, from the *Lex Rhodia*.

An ordinance for the government of the navy, signed in 1645 by Charles I, contained provisions for the holding of courtsmartial; this term, and no doubt some of the procedure, date from the Court of Chivalry of the 11th to 16th centuries.

Unlike the army Articles of War, which used to be a royal prerogative, issued to the British army only when serving out of Britain, the naval Articles have always been statutory. The difference was made intentionally, to protect the country from coercion by the king. The Bill of Rights, 1689, provided that the king could not raise or maintain a standing army in peacetime, but the navy was not included in this provision. It has remained a prerogative force on a permanent basis, subject to parliamentary control through the estimates and supply bills.

Until the first of the annual Mutiny Acts was passed in 1689, military law could not exist in Britain in peacetime. Parliament maintained control over the army by the device of having to renew the Mutiny Act for a year at a time. In 1803 the royal prerogative of issuing Articles of War, and parliament's annual military bill, were combined in the Army Act. The Air Force Act of the United Kingdom is based on this act. Both acts must be renewed annually.

The present Articles of War for the Royal Navy are embodied in the Naval Discipline Act, a permanent statute. This latter Act is derived from the Articles of War, 1623, and 1653— of which the final article states: "All other faults . . . shall be punished according to the

laws and customs of the sea"; the Naval Discipline Acts of 1661 (which contains the same final article), 1749, 1847, and the best known, that of 1866, which states in the preamble that it is ". . . the law relating to the Government of the Navy, whereon, under the good Providence of God, the wealth, safety and strength of the kingdom chiefly depend . . ." A further statute in this series, the Naval Discipline Act of 1911, is in a different category, as it relates to the application of the disciplinary provisions of the 1866 Act to the Dominion Naval Forces.

Under authority of article 91 (7) of the British North America Act, 1867 (the Canadian Constitution), section 69 of the Militia Act (Can.) made provisions of the Army Act (Imp.) applicable to Canada in 1869, and annually thereafter.

The Naval Service Act (9-10 Edw. VII, c.43), assented to 4 May, 1910—the official birthday of the Royal Canadian Navy—stated in section 48: " 'The Naval Discipline Act, 1866' . . . and the King's Regulations and Admiralty Instructions, in so far as the said Acts, regulations and instructions are applicable, and except in so far as they may be inconsistent with this Act or with any regulations made under this Act, shall apply to the Naval Service and shall have the same force in law as if they formed part of this act . . ."

A Canadian disciplinary code was first provided in the revised Naval Service Act of 1944. This act also provided for the King's Regulations and Instructions for the Royal Canadian Navy (KRCN), to supersede KR & AI, which had first been issued to the Royal Navy in 1731. Commander (SB) Horace E. Read, OBE, RCN(R) (Ret'd), dean of the Dalhousie University Faculty of Law, was chairman of the committee which drafted KRCN.

The National Defence Act, 1950, is the result of three years of study and work by service and legal authorities, and represents a consolidation, found necessary by the experience of the Second World War, by the statutes mentioned above, and of the Department of National Defence Act, 1922, the Militia Act, the RMC Act, the RCAF Act, as well as the Army and Air Force Acts of the United Kingdom, all of which had previously applied to units of the Canadian forces.

In the drafting of the National Defence Act, Canadian authorities made extensive use of the work done in the United States in preparation of the Uniform Code of Military Justice, and also to the recommendations of Mr. Justice Pilcher's committee on military law in the United Kingdom, which led to the latest revision of the Naval Discipline Act.

Following the government's tri-service policy, the National Defence Act is a consolidated act, applicable to the three armed services and the Defence Research Board. With respect to its broad application to four distinct services this Canadian legislation is probably unique.

Although the Act was assented to on June 30, 1950, parts IV to IX, entitled the Code of Service Discipline, only became effective in the Canadian Forces on September 1, 1951. The National Defence Act and the Defence Services Pension Act have been amended annually since 1950 by Canadian Forces Acts.

By virtue of section 119 and Part XII, the Code includes provisions of the ordinary criminal law of the country, as found in the Criminal Code, the Official Secrets Act, and other federal statutes. As a recent extension to the principle carried forward from 1537, section 119A provides that offences against foreign laws may now come under the jurisdiction of the Code of Service Discipline.

We may note with interest that it was the naval disciplinary code of the Naval Service Act, 1944, which was used perhaps as the principal basis for the drafting of the Code of Service Discipline. This Act provides the link in a direct chain joining the maritime customs and laws of the Phœnician seamen of Tyre and Sidon in 1500 BC, to the statutory code and regulations governing the conduct of Canadian sailors in 1958 AD.

The above article was written by Lt.-Cdr. A. D. Taylor, recruiting officer for Quebec City, who began the study of law while serving in HMCS Magnificent *and has continued his studies ashore. He has also delved deeply into naval customs and traditions.*

ON or IN?

A FINE POINT of nautical grammar is resurrected in the March 1958 issue of *The Nautical Magazine,* that ever-interesting merchant service journal published in Glasgow, Scotland.

Does one serve "on" or "in" a ship?

This is the way *The Crowsnest* once heard the matter put: A ship is a vessel; a vessel is a container. Therefore, one serves "in" a ship. Similarly, one does not live "on" a house.

That should settle the problem and, in fact, the question would never come up at all if all sea-going vessels were submarines. However, in these days of aircraft carriers, which are essentially floating platforms, some sort of case can be made for the occasional use of "on".

The issue can be beclouded further by drawing attention to the expressions "on board" and "aboard". (By the way, which of *those* terms is to be preferred?) Certainly no sailor would claim he sailed "inboard" a ship.

But to get back to the original question: "On or in?"—here is what *The Nautical Magazine* has to say:

"Many years ago when we were very young we were severely reprimanded by an old seadog for saying that a man was serving 'on' a ship. 'Is he a barnacle or something?' the old seaman wanted to know. But nowadays almost everyone seems to be sailing on a ship or serving on a ship and we wonder how they manage to attach themselves to the hull, for obviously if one sails 'on' a ship then presumably you must be somewhere on the outside. For this matter of 'on' or 'in' has always tickled our fancy and, while not wishing to sound pedantic, we have noted in recent months how the usage of 'on' has grown in some leading shipping magazines and even *Lloyd's List,* not to mention house magazines.

"Perhaps some of our more knowledgeable readers will have some comments on the matter, but apart from that old seadog we were told by men who know the King's (or Queen's) English that a person sails 'in' and never 'on' a ship—unless he happens to be a barnacle or something like that."

'VICTORY AT SEA'—The RN's Story

One-Volume History of Naval Operations Appears

IN "VICTORY AT SEA", Lt.-Cdr. P.. K. Kemp, RN, the man who as both Admiralty Archivist and head of the Admiralty Historical Sections gives us an officially approved single-volume work on the sea war, 1939-45. It is, as he admits in the preface, rather late in the day for a one-volume *tour de force*, but, as he again admits in the preface, there is room for a volume that relates the sea war to the war as a whole, and that shows how ocean problems affected the dispositions and conduct of grand strategy. Indeed, it is possible that having at his disposal both the work of other laborers in the naval vineyard plus the stocks of officially matured grapes he is in an excellent position to dispense a good vintage wine.

It is important to remind readers, however, that official though Lt. Cdr. Kemp's book may be, it is not intended to cover in detail the material that Captain Roskill does in his "War at Sea" —*the* official history now appearing in three volumes. Sailors who want detailed treatment of various actions will still need to turn to that magnificently conceived and executed larger work.

What Lt.-Cdr. Kemp does is to briefly describe naval activity and relate it to the great struggle as a whole. In other words he tells the story of the war with significant pauses for strategic explanation. This will surely appeal to those who have asked the question (and who has not): "Why in the name of Heaven did we do that?" He does not provide all of the answers but he does explain a great deal.

He explains, for instance, that it was not just the sloth of politicians that allowed the fleet to decline in the inter-war period, and that in a democracy people as a whole must want and be prepared to pay for military security—a judgment that has implications in 1958. He exonerates Chamberlain and Munich by referring to the fact that the Chiefs of Staffs flashed a red light in 1938. He makes the further point that the state of naval preparedness was *not* disastrously low in 1939 when the war began. The Royal Navy was reasonably ready.

Undoubtedly, however, there were not sufficient ships to enable the Navy to act offensively in a number of theatres at once and this fact allied with a timorous decision by the framers of grand strategy to act defensively in any theatre caused early chances to be missed. Instead of frightening the Italians away from Germany, says the author, an attempt was made to coax her away in friendly fashion—a policy that cost the Navy dearly in the years to come.

Norway was another case in point. Unable to come to a decision whether the iron-ore shipments to Germany should be dealt with by the temporary expedient of mining enemy waters, or by the determined occupation of the Narvik area with an expeditionary force, the planners hesitated until too late. Respect for Norwegian feelings had something to do with this, but the Germans had no such scruples and the result was that the Norwegian operation took the form of insufficient reaction to strong planned German action, the Navy played the role of evacuation force nobly, and the Naval ring surrounding Germany was no longer tight.

BOOKS *for the* SAILOR

The waiting policy allowed the Germans initiative in France as well, and once again the Navy performed its task of evacuation well, but as the last rescuing craft left France it left a French coast in German hands and the Fuhrer looked unimpeded onto the broad swell of the Atlantic. Italy's entering the war threatened the Mediterranean so that Middle East shipping had to go by Cape Town—a further strain on shipping at a time when invasion threatened the British Isles themselves. On top of all of this the U-boats were beginning to achieve really significant successes in the North Atlantic.

The bulk of Lt.-Cdr. Kemp's book deals with the period from this grim moment in 1940 until the time in mid-1943 when the Royal Navy went over once again successfully to the offensive. It would be impossible to follow the author as he moves about the whole world discussing ocean events, and hence we confine ourselves to a short mention of the Battle of the Atlantic.

The most important Naval action if not the most important of the war took place on the waters that wash Nova Scotia on the one side and the United Kingdom on the other. For it was on the Navy's ability to transfer ships with their precious cargoes from Bedford Basin to dockside on the Mersey and the Clyde that British strength to resist ultimately depended. The Germans were aware of this fact as well, and for three long years the grim Atlantic struggle went. U-boats grew in numbers, their tactics improved and the allied merchant losses went painfully up. A total of 195,000 tons of sunk shipping in June 1940 changed to 627,000 in March 1943—the turn of the tide. One shrinks from a cold-blooded recording of figures that mean so much in individual terms. Yet, for all that, the economic life line held, and finally by the autumn of 1943 the Battle was won as shipping losses decreased and U-boat kills increased rapidly.

Commander Kemp shows how courage, experience, improved scientific aids, and aircraft finally defeated the U-boat. He also acknowledge the fact that the Royal Canadian Navy had a share in the victory, speaking of a "close and harmonious" partnership between the two navies. His ideas of Canada are slightly hazy, however, since on the very next page he speaks of an escort sailing from "St. John's, Nova Scotia". There are rumours from the Royal Navy of a projected reorganization of the Hydrographer's Department. One hopes that this does not mean the end of the use of charts!

The author gives full credit to aircraft for the part they played in defeating the U-boats. He is not so charitable to the senior officers of the Royal Air Force. When Coastal Command came under the operational control of the Admiralty he talks of the "pressure from the Air Staff" behind the decision to use the aircraft "offensively" in hunting tactics rather than in convoy shadowing. Since this was, at the time, the general approach used by the Navy in the disposition of its surface craft one wonders why the "Air Staff" is dragged in—to be finally knocked on the head with "And, moreover, in the true exercise of air power, who were the Admiralty to challenge the opinions of the Chiefs of this new and rapidly growing Service?" Readers who have become convinced of the need for closer co-operation between the Services will read such passages with misgivings.

The end of the severe U-boat pressure in the Atlantic saw corresponding improvements in other theatres and the

supply stream so desperately guarded finally disgorged in Torch, Anvil, and Overlord and a proved navy displayed the inshore technique learned in evacuation in the more congenial task of assault on European beaches. We all know the result.

Canadians will still need to consult Joseph Schull to follow their own ships in action and exact students will still need to consult Captain Roskill, but Commander Kemp has given us a tightly-packed wide coverage of the ocean war. His is a competent book that deserves to be read by all those who want to know where the Navy was in the hour of need.—*D. M. Schurman.*

VICTORY AT SEA, by Lt.-Cdr. P. K. Kemp, R.N., S. J. Reginald Saunders & Company Limited, Toronto, Ontario; pp. 365; $6.50.

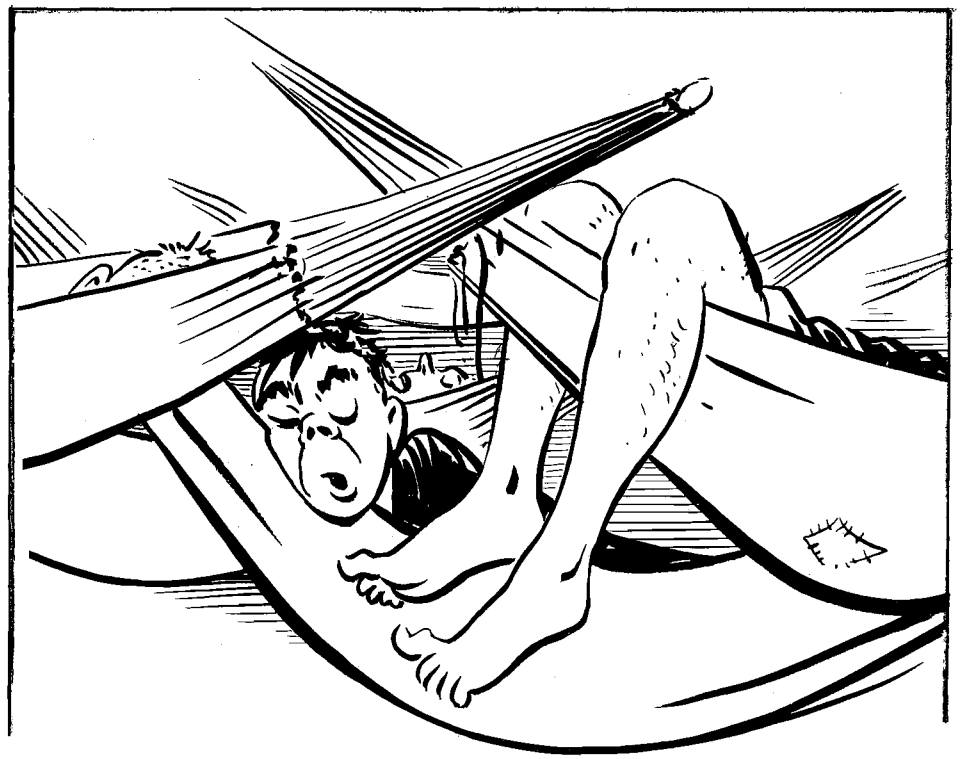
REVISED LIST OF SHIP MODELS

The National Maritime Museum in London, England, has issued a supplement to its "Catalogue of Ship Models" by R. C. Anderson, Lit.D.

Dr. Anderson, a trustee of the National Maritime Museum since its foundation, produced a catalogue of ship models which was first published by Her Majesty's Stationery Office in 1952, according to the *Admiralty News Summary.*

This catalogue lists and describes some 700 ship models, including Dr. Anderson's own extensive collection, presented by him to the Museum. The original catalogue costs 5s 0d. and the supplement, which can be obtained separately, but will in future be sold with it, costs 6d. The supplement gives particulars of 73 models, acquired since 1952, and ranging in date from the middle of the 17th century to the present day. Of the 73, 47 date from the last century, when many important changes in the development of ships occurred.

Thirty-two of the models described are merchant ships, mostly of the last century. The Museum collection specializes in contemporary scale ship models, but contains a few modern reconstructions. While neither the catalogue nor its supplement is illustrated, a companion volume, entitled "Picture Book of Ships Models", price 2s. 0d., illustrates a selection of the models described in the catalogue.



HAMMOCK NEARING END OF DAYS IN RN

THE GREATEST (and almost the last) stronghold of the hammock has been breached. The Royal Navy, which has slung hammocks since 1597, is in process of discarding them in all warships.

The changeover is similar to the one which began in the Royal Canadian Navy about eight years ago when HMCS *Sioux* underwent a major refit. Since then all new construction and all modernized ships in the RCN have been fitted with bunks and with other furnishings and facilities designed to make life at sea more liveable.

The Royal Navy's action is in accordance with a policy announced by the Admiralty last year, intended to improve the working and living conditions of officers and men afloat. All the new improvements in habitability will be incorporated in new design ships and, as far as practicable, existing ships will be modified.

The improvements will include "centralized" messing, which will remove food preparation and washing up from the mess decks; more space for communal mess life; book shelves, lockers and suitcase stowage; plug-ins for electric razors in ships with alternating current; provision of electric irons and ironing boards, and so on. A certain portion of the lower bunks will be made so they can be turned into settees during the day, and chairs and small tables will be provided.

Considerable attention is also being given to improving the appearance of lower deck messes and officers' quarters. Surroundings are to be made as homelike and easy to keep clean as possible. Electric fireplaces are to be fitted in senior men's messes where space permits and carpets have been approved for chief petty officers' messes.

It is not considered practicable to air-condition all spaces in existing warships or those already under construction. However, improved ventilation will be provided and air-conditioning will be provided in future construction.

Just how thoroughly the Royal Navy is going into the whole question of improved habitability can be judged from the announcement that trials have been arranged for tobacco smoke filters for use in air-conditioned spaces.

THE NAVY PLAYS

Hochelaga Takes National Trophy

A rink from *Hochelaga,* Naval Supply Centre in Montreal, won the Canadian Westinghouse Trophy and the national championship of the Royal Canadian Navy Curling Association's second national bonspiel, held in Ottawa, March 24-25.

Skipped by CPO Doug Newton, the rink defeated one from *Patriot* in Hamilton 11-7 in the final. Newton's Montreal teammates included CPO Al Bennett, lead; PO Dave Robertson, 2nd, and Frank Barron, mate. The *Patriot* rink included Ord. Cdr. Bill Onysko, skip; Lt. (L) Ernie McCubbin, lead; CPO Bill Currie, 2nd, and PO Roy Eldridge, mate.

Rinks from Ottawa, Moncton and Hamilton figured in the other three divisions. The four Hamilton rinks all reached the finals in a determined bid to take over the 'spiel.

The Ross Trophy, for second division play, went to an Ottawa rink. Members were W. P. (Bill) Kingston (ex-Navy), skip; Captain (S) Steve Clemens, lead; Instr. Captain J. D. Armstrong, 2nd., and Commodore (L) H. G. Burchell, mate. They edged Lt.-Cdr. George Manson's Hamilton rink 12-11.

The RCN Curling Association Prize, for third division, went to PO Doug Baldwin's rink from *Coverdale,* naval radio station near Moncton, N.B. They beat Lt.-Cdr. Frank Ross' Hamilton rink 12-6. Baldwin's teammates included PO Hank Hansen, lead; CPO George Castle, 2nd, and Ldg. Sea. Stan George, mate. It was the only Moncton entry.

The fourth division President's Prize was won by the Hamilton rink of Lt. John Persson which drubbed 16-5 the Ottawa rink of Lt.-Cdr. (S) Charles Crothers.

The Persson rink included Lt.-Cdr. Bill Hendry, lead; Lt.-Cdr. (E) Peter Salsiccioli, 2nd, and MAA Charles Piper, mate.

Competitors came from Halifax, Dartmouth, and Quebec City establishments as well, for a total of 24 rinks.

Play was at the Rideau and the RCMP curling clubs over the two days. It was conducted on a round-robin basis, in sections, with eight-end games which were switched to ten for the finals. Players travelled to Ottawa at their own expense and the time involved came off their annual leave.

A rink from Hochelaga, Naval Supply Centre in Montreal, emerged with the national championship after a two-day, 24-rink second national bonspiel in Ottawa March 24-25 of the RCN Curling Association. Members are, kneeling; CPO Doug Newton, left, skip, and PO Dave Robertson, 2nd; standing, CPO Al Bennett, left, lead, and PO Frank Barron, mate.

W. Cheeseman, of Canadian Westinghouse, presented his company's championship trophy to the *Hochelaga* rink, gave silver plates to its members and smaller plates to individuals of the runner-up rink. Rear-Admiral K. L. Dyer, Chief of Naval Personnel, presented the Ross Trophy and RCNCA Prize and Commodore Ross, president of the Ottawa (host) club and bonspiel committee chairman, presented the President's Prize. Awards were made at the Rideau Club in a ceremony following the competition.

Admiral Dyer officially opened the bonspiel Monday morning and threw the first rock. Assisting officials were R. H. MacNabb, chief umpire, and F. L. Price, umpire, both from curling clubs in the capital; Lt.-Cdr. G. M. deRosenroll and Lt.-Cdr. (CE) J. E. Forster, both scorers.

Canadians Bow To Tokyo Team

Canadian sailors found hockey the third-ranking sport of Japan as they went down 9-3 to an all-Tokyo squad during the visit of five destroyer escorts of the Second Canadian Escort Squadron to the Japanese capital.

More than 5,000 watched the game in Tokyo. Canadian Ambassador W. F. Bull, performed the official face-off.

Checking on rule interpretations before the game in the accompanying picture are, left to right, Ldg. Sea. Stewart Duffy, Hockey Commissioner Tsugi and Chief Referee Hgaki.

Ex-Commodores Join 'Blue Gavel'

Two members of the Royal Canadian Navy Sailing Association are members of the International Order of the Blue Gavel, Vancouver Island district. They are Chaplain (P) G. L. Gillard, and Lt.-Cdr. Roy Smith.

Membership in the Blue Gavel order is limited to former commodores of recognized yacht clubs, and both Chaplain Gillard and Lt.-Cdr. Smith had served as commodores of the RCNSA.

Visitors Beat RCN at Squash

Following Maple Royal I, when ships of the RN Home Fleet task force called at Halifax for a brief rest, there occurred one of the few occasions for the two navies to compete in sports on Canadian soil.

Royal Navy squash players trounced the RCN despite the fact they were using the American-type ball, which differs from their own. The Canadians went down 4-1 in games.

Stad Captures Hoop Crown

In basketball, the *Stadacona* Sailors cuffed the powerful *Shelburne* USN Red Raiders, 52-47, to take the Nova Scotia Senior "B" basketball title.

It was revenge for the *Stad* Sailors who suffered the loss of the Atlantic Command championships to the Red Raiders in February. The game also broke the Red Raiders 23-game unbeaten streak, and made up for three previous losses to *Shelburne*.

While *Shelburne* is a joint RCN-USN hydrographic station, the basketball team is composed entirely of USN personnel—hence the title.

West Point Wins Inter-College Meet

Royal Military College, Kingston, Ont., took a back seat to the United States Military Academy, West Point, N.Y., in the annual match between the two colleges.

West Point clobbered RMC 5-1 in an exhibition hockey game, making it three in a row for the Americans. Then they went on to score a victory in debating the subject "Resolved that our North American standard of living is too high for the good of our society". RMC stated the affirmative.

To round out the match the West Pointers topped both RMC and the RCMP in a pistol shoot. The USMA held an aggregate score of 1370 with RCMP close behind with 1332, and RMC trailing with 1279. There were ten men on each team, with top five scores to count, and the shoot was fired in three relays.

Stadacona Wins Basketball Honours

In the Atlantic Command backetball meet, held at *Cornwallis*, Navy and Air Force took top honours.

In the championship match, *Stadacona* whipped *Cornwallis* 54-37, while Greenwood RCAF trounced Aldershot Black Watch 69-24 to take the consolation prize.

Star Hockeyists Beat Kitchener

HMCS *Star*, Hamilton naval division, captured the inter-divisional hockey title by defeating Kitchener Tender 7-2.

Sailors Second In Swim Meet

RCN swimmers took second place at the Nova Scotia swimming meet held at the *Stadacona* pool recently. In the men's division Acadia University won first place with 50 points, followed by *Stad* with 41, Halifax "Y" with 24, and trailed by Aldershot Black Watch and Saint John, N.B. Vocational School tied with 15 points.

A shipboard volleyball team, HMCS Crescent's, won out over usually better-conditioned shore types to take the Pacific Command title. Lt. James H. Murwin, left, a member of the team, radiates satisfaction as he receives the trophy from Rear-Admiral H. S. Rayner, Flag Officer Pacific Coast, just before the destroyer escort sailed for the Far East as senior ship of the Second Canadian Escort Squadron. (CR-154)

Ontario Wins Cricket Match

A *Venture* cadet and staff cricket team from the *Ontario* scored two firsts in far-off Fiji, during the South Pacific cadet training cruise, when they defeated the Fijian Wanderers 75-48.

The game marked the first time a Canadian cricket team had ever played in Fiji and it was the first time a visiting Commonwealth team had ever defeated them.

The cadets weren't so fortunate when it came to rugby, though. Against the Fiji Naval Volunteer Reserve, with the Fijians playing barefooted and displaying a fast and clever game, the cadets lost 9-3.

In softball, the *Ontario* defeated the USS *John* 10-6, and took a win from HMNZS *Pukaki* 8-3, but they were clobbered in water polo, 8-2 by the RNZAF.

Ontario boxers worked out with Suva amateur boxing club, and 35 officers and men took advantage of the Suva Golf Club invitation to use their facilities.

Stadacona Ends Curling Series

In curling, Lt. Doug Campbell retained the Burgess Challenge Trophy at the conclusion of the regular season competitions for *Stadacona*.

LOWER DECK PROMOTIONS

Following is a further list of promotions of lower deck personnel. The list is arranged in alphabetical order, with each new rating, branch and trade group shown opposite the name.

ALLAN, Murray H. P2EM2
ARNOLD, Allister R. LSEM1
ASTLES, Kenneth H. C2ER4

BAGGS, Bruce LSEM1
BAINBRIDGE, Albert C2ER4
BAKER, Stewart K. P2EF3
BOHILL, Kenneth A. LSEM1
BOND, Vernon J. LSTD1
BONNER, Leonard R. C2EM4
BOUGHTON, Benjamin E. P1AA2
BOYD, Elmer M. LSSW1
BOYLE, Allan W. P1EM4
BRIAND, Francis D. C2EM4
BRISCOE, John T. LSEM1
BRISSEAU, Ernest L. LSEM1
BRODIE, Norman W. LSRT2
BURGESS, Arthur R. P1EM4

CARR, Lowell H. LSEG2
CARR, Robert F. LSEM1
CHADWICK, Thomas G. LSEM1
CHAPADOS, Charles G. LSEM1
CHAPMAN, Thomas E. LSCR2
CHRISTIE, Robert C2QI4
COWARD, Robert G. P2EM2
CRAMER, Cecil C. C1ER4
CRANDALL, Frank L. P1EM4

DAVIDGE, Clarence B. LSEM1
DAVIES, Trevor E. C2EM4
DAVIS, Gordon K. P1RP3

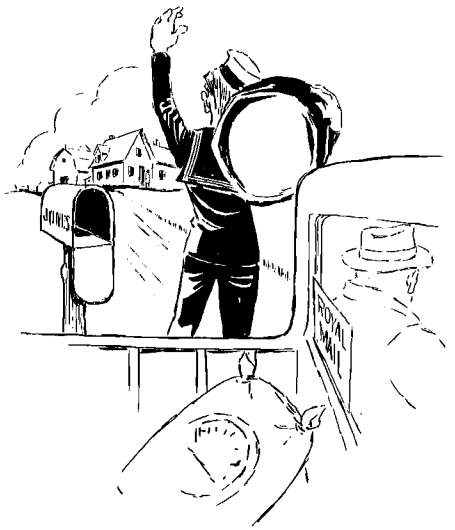
Cold Storage Improves Gas

While most of us, at least in the cold weather areas of Canada, view freezing temperatures with apprehension because of the danger of gas line freezing, the U.S. Army Service Corps of Engineers has found that aviation gasoline stored in ice pits in the Arctic not only improves in quality but actually contains less moisture and other impurities, according to the Armed Forces Press Service of New York.

A recent U.S. Army announcement said, "The fuel, which evaporates rapidly and takes on impurities under normal climatic conditions, can be stored indefinitely in pits under the ice cap—scientists have determined that the fuel not only retains all of its properties but is even improved after an extended storage period.

"The fuel contained less moisture as a result of the low and constant temperatures."

The gasoline was stored in pits four feet wide and five feet deep at several points in the 1,200-foot tunnel the U.S. Army has carved out of the ice in the Canadian Arctic.



RETIREMENTS

CPO ROBERT QUENTIN RODGER, 39, C2RT4, of Abbey, Sask., joined September 13, 1937; served in *Naden, St. Laurent, Nootka, Stadacona,* HMS *Victory, Saguenay, Niagara, Quesnel, Cornwallis,* HMS *Arethusa, Algonquin, Fort Francis, Scotian, St. Boniface,* Newport Corners, *Magnificent, Quebec*; awarded Long Service and Good Conduct Medal September 13, 1952; retired December 20, 1957.

PO GEORGE WILLIAM FOSTER, 40, P1EM4, of Winnipeg, joined January 5, 1937; served in *Naden, Fraser, Restigouche, Stadacona, Goderich, Cornwallis, Hochelaga II, Niobe, Gatineau, Avalon, Eastview, Peregrine Thetford Mines, Shelburne, Provider, Scotian, Givenchy, Uganda, Rockliffe, Portage, Ontario, Athabaskan, Micmac,* awarded the Canadian Forces Decoration January 1, 1949; mentioned in despatches October 18, 1940; retired January 1, 1958.

CPO EDWARD JACKSON, 40, C1RI4, of Birkenhead, England; served in RCNVR from 1935 to 1937, joined January 5, 1937, served in *Stadacona,* HMS *Victory,* HMS *Nelson, Restigouche,* Royal Naval Signal School, *St. Hyacinthe, Venture, Granby, Protector, Sault Ste. Marie, Peregrine, Niobe,* HMS *Vindex,* HMS *Ravager, Scotian, Bytown, Shearwater, Magnificent Iroquois, La Hulloise,* Albro Lake, *Nootka, Bytown;* awarded Canadian Forces Decoration January 5, 1949; retired January 4, 1958.

CPO PETER LOWE RIGG, 41, C1OT4, of Olds, Alberta; joined January 5, 1937; served in *Naden, Fraser, Restigouche, Stadacona, Ottawa, Cornwallis, Niobe, Cayuga, Ontario, Athabaskan, Ontario;* awarded Long Service and Good Conduct Medal January 5, 1952, retired January 1, 1958.

CPO PAUL ALLEN WENTZELL, 41, C1OT4, of Indian Point, Lunenburg County, N.S., joined January 5, 1937; served in *Stadacona, Saguenay, Venture, Skeena, Niagara Cornwallis, Avalon, Algonquin, Huron, Scotian, Iroquois, Haida, Micmac, Nootka, Naden, Donnacona;* awarded Long Service and Good Conduct Medal January 6, 1952, retired January 4, 1958.

DAVIS, Laurence B. LSEM1
DENBY, Gordon B. LSEM1
DIAMOND, Ralph G. LSEM1
DICKSON, James F. LSRT3
DOUGHERTY, William H. LSRT2
DUCKWORTH, William G. LSEM1
DUNCANSON, Frank T. C2EM4

EDWARDS, John W. C2ER4
ELLISON, John G. LSEM1
ESPLEN, Robert J. LSNS2

FARRELL, Alvin E. C2EM4
FARRELL, Bruce D. LSEG3
FLANDERS, Clayton E. C2ER4
FRANCE, Jack H. LSEM1
FUMANO, Leo L. LSRA2
FYFE, Robert LSEM1

GAGNON, Stanley A. LSEF2
GILLEN, Samuel P1ER4
GLENN, Douglas B. LSRA2
GREENAWAY, Norman D. LSRA2
GRIGSBY, Ross F. LSEM1
GRIMES, Larry K. LSRA2
GUENTHER, Melvin L. LSEF2
GUEST, James R. P1ER4

HALE, Francis G. LSEM1
HANCOCK, Charles C2EM4
HARDWICK, Gerald A. LSEM1
HEMPHILL, William D. LSRT2
HICKS, Arthur J. C2EM4
HODGSON, Rae C. P2EG3
HOFFMAN, Percy J. LSEM1
HOPPS, Edward K. C2ER4
HORNE, Allan R. C2EM4
HUNT, John T. LSEM1
HUTCHINSON, Frederick C. .LSEM1

INWOOD, Leonard D. LSEM1

JAMIESON, George K. P2EM2
JEANES, James G. P1EM4
JOHNSON, Harvey D. LSED2
JONES, Charles E. LSEM1
JONES, Stanley H. P2EM2

KNIGHT, Garnet L. LSEM1
KOHARSKI, Nicholas P2EM2

LALONDE, John J. LSEM1
LAMONTAGE, Lucien J. P1EM4
LAPALME, Laurent J. LSEM1
LARCHE, Nelson D. P1ER4
LEPAGE, Roland J. C2EM4
LEWIS, Peter W. LSEM1
LLOYD, William H. C2GI4
LONGSON, Charles J C2ER4
LYALL, James C. LSEG2

MacDONALD, David C. P2EM2
MacDONALD, Lawrence R. LSEM1
MacGIBBON, Duncan G. LSEM1
MacKEAN, John A. P1ER4
MacLEOD, Harry B. P1EM4
McKEAG, Ronald G. LSEM1
McKELLAR, Allan M. LSEM1
McMECHAN, William P. LSPW1
McQUILLEN, Michael J. LSEM1
MAJOR, John E. LSEM1
MARCHMENT, George R. C2SW3

The scene is Sunday Divisions on the flight deck of the aircraft carrier Bonaventure, taken in January off Puerto Rico. (BN-1540)

MASON, Fenton C. P1ER4
MATHIEU, Jean-Claude J. LSEM1
MERSEREAU, Foster L. P1EM4
MILNE, Scott R. LSEM1
MITCHELL, Richard C. LSEM1
MONAST, Roger L. LSEM1
MONKS, Ernest F. C1ER4
MORIN, Aime F. LSEM1
MURLAND, Sture J. P2EM2

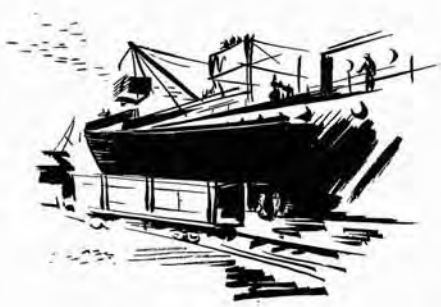
NIXON, Byron E. LSEM1

OLIVER, William L. P1EM4
O'QUINN, Stanislaus LSEM1
ORGAR, William J. LSEM1
OZARIO, Raymond M. LSMA2

PARADIS, Gerard J. P1ER4
PARSONS, Peter J. LSCS2
PARUCH, Alam F. LSEM1
PATTERSON, Robert E. LSEM1
PAUL, David E. LSEM1
PEARSE, Raymond E. LSEM1
PELTIER, Vance G. LSEM1
PERKINS, John D. LSTD1
PICKRELL, Don W. LSAF1
POOLE, William P2AW3
POPE, Brian A. P1EM4
POWELL, William G. LSEM1

RABIDEAU, Francis P2EM2
REEKIE, James A. LSCR1
ROSS, Gerald D. LSEM1
ROSS, Kenneth G. P2EM2

SALBERG, Mervin C. P2EM2
SALSMAN, Eldon W. LSEA2
SCHMIDT, Frederick B. LSRA3
SKELLY, William G. P1ER4
SMITH, Cecil W. LSEM1



SOMMERVILLE, Wilfred J. C1EM4
SOUTHWORTH, William R. C1EM4
SOVIE, Martin R. LSEM1
STARKEY, Charles S. LSRT2
STEEVES, Waldo W. P1ER4
STEURNAGEL, Paul J. P1EM4
SUTHERLAND, Auldon G. LSEM1

THOMSON, Alvin R. LSCR1
THOMSON, Robert J. P2TD2
TOMLINSON, Gordon E. C2ER4

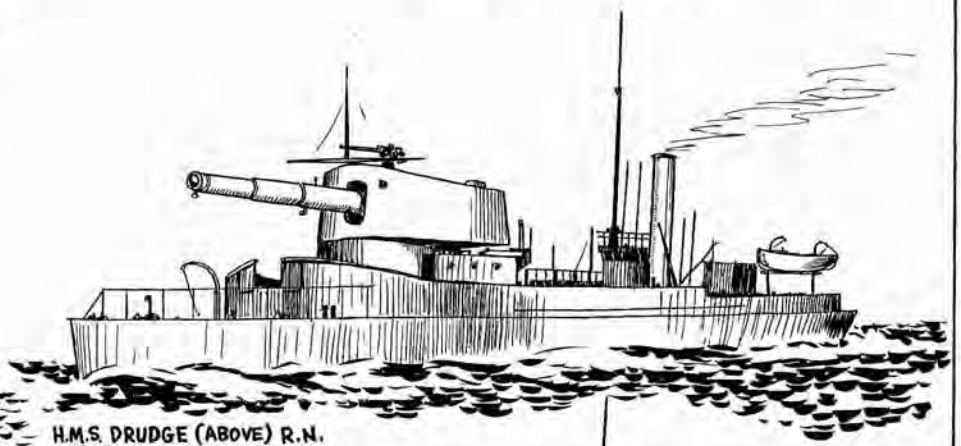
VANDORPE, Romain H. P1ER4
VESSEY, Thomas C. P1EM4

WATT, Norman A. P1EM4
WETHERELL, Ronald LSEM1
WEZDEN, Joseph LSEM1
WILLIAMS, Robert C. P2EM2
WILLIS, Stanley J. LSMO1
WINFIELD, Norman R. P1LR3
WOOD, Frederick K. P1EM4
WOOD, James A. C1ER4
WOOD, John E. P2EM2
WOOLLEY, Gordon P1ER4
WRIGHT, William A. P2EM2

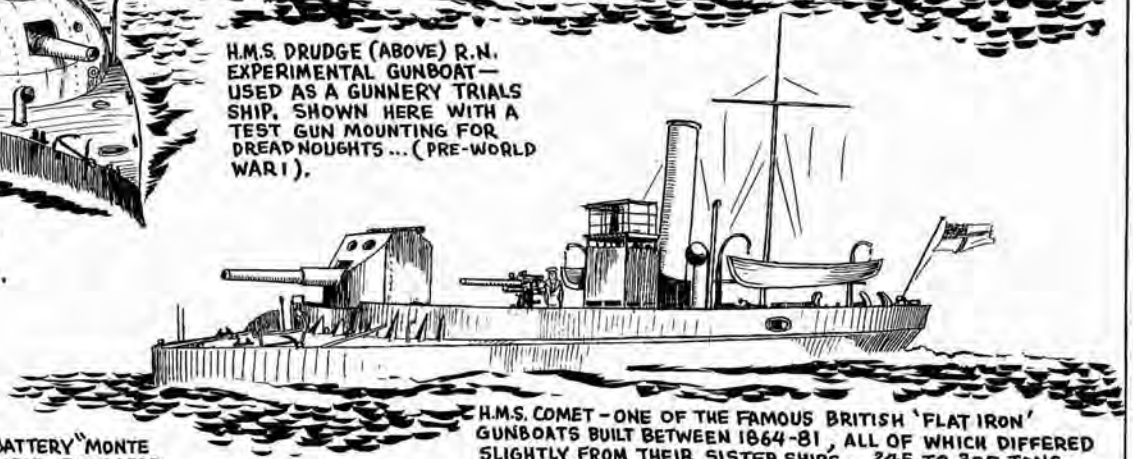
Naval Lore Corner

Number 58
EARLY GUNBOATS & MONITORS

GREEK GUNBOATS "AKTION" AND "AMBRAKIA" (1881 - REBUILT IN 1910) OF 433 TONS WERE ARMED WITH ONE 10.2 INCH GUN. THE GUN WAS AIMED BY AIMING THE SHIP.

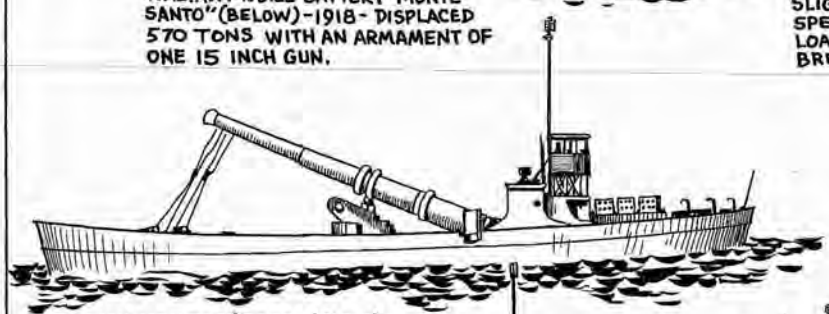


H.M.S. DRUDGE (ABOVE) R.N. EXPERIMENTAL GUNBOAT— USED AS A GUNNERY TRIALS SHIP. SHOWN HERE WITH A TEST GUN MOUNTING FOR DREADNOUGHTS ... (PRE-WORLD WAR I).

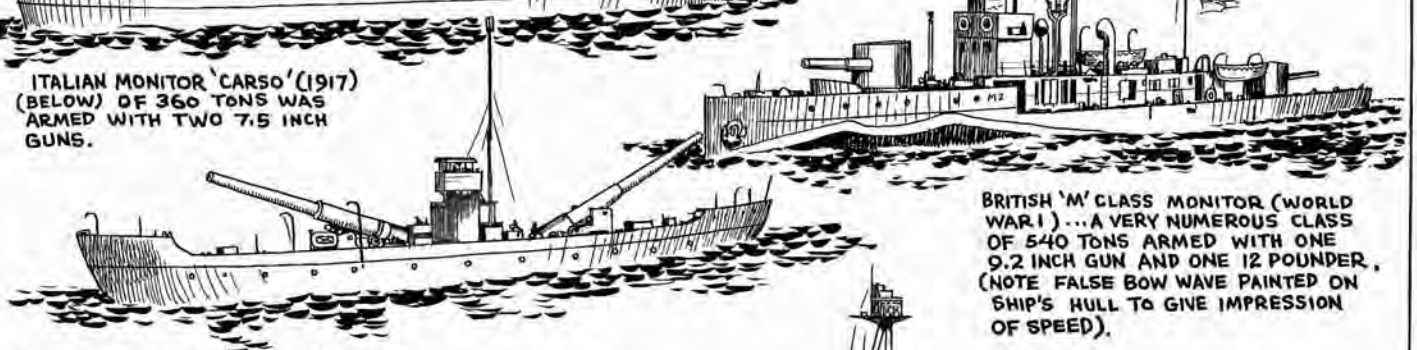


H.M.S. COMET - ONE OF THE FAMOUS BRITISH 'FLAT IRON' GUNBOATS BUILT BETWEEN 1864-81, ALL OF WHICH DIFFERED SLIGHTLY FROM THEIR SISTER SHIPS. 245 TO 300 TONS, SPEED, 4 KTS., ARMOUR VARIED. SOME HAD 8 INCH MUZZEL LOADERS. H.M.S. COMET WAS ARMED WITH ONE 9.2 INCH BREECH LOADER. SHIP WAS AIMED TO AIM GUN.

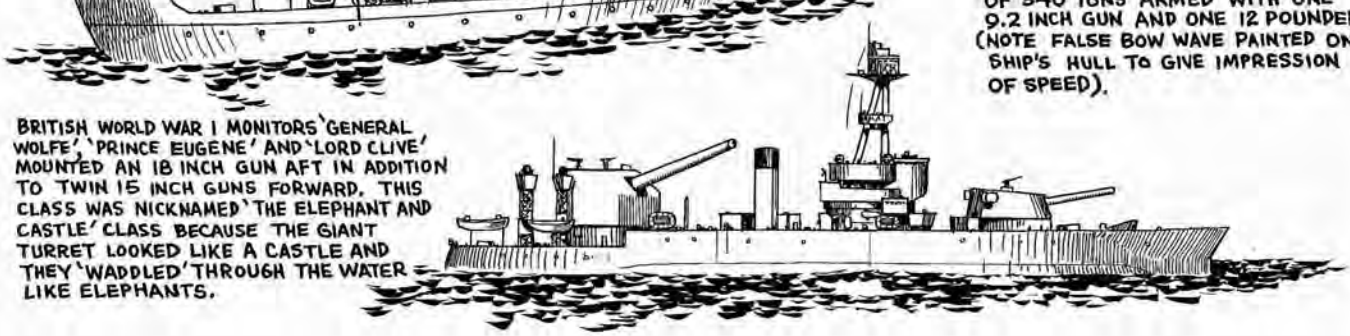
ITALIAN MOBILE BATTERY "MONTE SANTO" (BELOW) - 1918 - DISPLACED 570 TONS WITH AN ARMAMENT OF ONE 15 INCH GUN.



ITALIAN MONITOR 'CARSO' (1917) (BELOW) OF 360 TONS WAS ARMED WITH TWO 7.5 INCH GUNS.



BRITISH 'M' CLASS MONITOR (WORLD WAR I) ... A VERY NUMEROUS CLASS OF 540 TONS ARMED WITH ONE 9.2 INCH GUN AND ONE 12 POUNDER. (NOTE FALSE BOW WAVE PAINTED ON SHIP'S HULL TO GIVE IMPRESSION OF SPEED).



BRITISH WORLD WAR I MONITORS 'GENERAL WOLFE', 'PRINCE EUGENE' AND 'LORD CLIVE' MOUNTED AN 18 INCH GUN AFT IN ADDITION TO TWIN 15 INCH GUNS FORWARD. THIS CLASS WAS NICKNAMED 'THE ELEPHANT AND CASTLE' CLASS BECAUSE THE GIANT TURRET LOOKED LIKE A CASTLE AND THEY 'WADDLED' THROUGH THE WATER LIKE ELEPHANTS.

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