359
Na

THE NAVY

SPECIAL VAMPIRE ISSUE

Jul 1959 1'6

Schermuly Line Throwing and Distress Signal Equipment conforms to requirements of the **International Conference Regulations 1948.**

NATIONAL INSTRUMENT COMPANY PTY. LTD.
MELBOURNE, SYDNEY, BRISBANE, ADELAIDE, PERTH
Representing THE SCHERMULY PISTOL ROCKET APPARATUS LIMITED, ENGLAND

NC11-59

THE UNITED SHIP SERVICES PTY. LTD.

GEELONG MELBOURNE PORTLAND
VICTORIA AUSTRALIA

The largest organisation in Victorian ports for the supply and erection of fittings for the carriage of every description of cargo. Bulk grain fittings a speciality. Dunnage supplied, holds cleaned. Decks caulked. Carpenters, joiners and shipwrights supplied.

88-102 NORMANBY RD., SOUTH MELBOURNE

Telephone: MX 5231 Telegrams and Cables: "FLEETWAYS," Melbourne

THE NAVY

Vol. 22 JULY No. 7

MITCHELL LIBRARY 15

CONTENTS

Published by The Navy League of Australia.
N.S.W.: 83 Pitt St., Sydney VICTORIA: 443 Little Collins St., Melbourne.
ADVERTISING: Sydney—BM 6024; Melbourne—50 7586.
SUBSCRIPTION RATE: 12 issues post free in the British Commonwealth, 20/-.
Copies of "Herald" photographs published may be obtained direct from Photo Sales, "Sydney Morning Herald," Hunter Street, Sydney.

SUBSCRIPTION FORM

To "The Navy"
Box 4819, G.P.O.
Sydney, N.S.W.

I enclose 20/- (postal note, money order or cheque) for 12 issues of "The Navy," post free, commencing from

.....
(Please add exchange where applicable)

Name .....

Street .....

City ..... State .....

Date .....

Always ask for . . .

SHELLEY'S FAMOUS DRINKS

Obtainable from leading shops and saloons

CORDIAL FACTORY

SHELLEY & SONS
PTY. LTD.
MURRAY STREET
MARRICKVILLE
N.S.W.
'Phone: LA 5461

Cockatoo Docks & Engineering
CO. PTY. LTD.
•
Shipbuilders, Marine and General Engineers.
Contractors to H.M. AUSTRALIAN NAVY
•
Inquiries Invited
'Phone: WB1941 (10 lines)

Wilh. WILHELMSEN AGENCY PTY. LTD.
SYDNEY AND MELBOURNE
Representative for:
WILHELMSEN LINES, OSLO
AUSTRALIA-WEST PACIFIC LINE, HELSINBORG
AMERICAN PIONEER LINE, NEW YORK
SCANDINAVIAN AIRLINES SYSTEM, STOCKHOLM

DRIBARM
COMPRESSED YEAST-VACUUM PACKED
"Dribarm" is a special form of Compressed Yeast, dried under scientific conditions and carefully compounded with a suitable yeast food. Specially suitable when not accessible to, or supplied by, bakers.
Obtainable from: Merchants, Stores, Grocers, or direct from the Proprietors:
MAURI BROTHERS & THOMSON LIMITED
The Compressed Yeast Co.
BOX 31, P.O., WATERLOO, N.S.W.

THE NAVY LEAGUE OF AUSTRALIA

PATRON:
His Excellency The Governor-General.

FEDERAL COUNCIL:
President: Rear Admiral H. A. Showers, C.B.E. (Retd.).
Deputy President: Cdr. R. A. Nettleford, D.S.C., V.R.D., R.A.N.R.
Secretary: Comdr. R. P. Middleton, O.B.E.

New South Wales Division:
Patron: His Excellency The Governor of New South Wales.
President: Rear Admiral H. A Showers, C.B.E.
Secretary: Comdr. R. P. Middleton, O.B.E.
Hon. Treasurer: P. E. Trigg, Esq.

Victorian Division:
Patron: His Excellency the Governor of Victoria.
President: Lieut.-Comdr. A. N. Boulton, R.A.N.R.
Secretary: H. E. Touzel, 443 Little Collins Street, Melbourne.

South Australian Division:
Patron: His Excellency The Governor of South Australia.
President: Surgeon-Comdr. R. F. Matters (Retd.).
Hon. Sec.: R. Sutton, Esq., 30 Pirie Street, Adelaide.

Tasmanian Division:
Patron: Vice Admiral Sir Guy Wyatt, K.B.E., C.B., R.N. (Retd.).
President: W. E. C. Hodgman, Q.C., M.H.A.
Hon. Sec.: Comdr. G. E. W. W. Bayly, O.B.E., V.R.D., R.A.N.V.R. (Retd.), 726 Sandy Bay Road, Lower Sandy Bay, Hobart.

Western Australian Division:
Patron: His Excellency The Governor of Western Australia.
President: D. W. Brisbane, Esq., C.B.E.
Hon. Sec. - Hon. Treas.: K. Olson, Esq., 62 Blencowe Street, West Leederville, W.A.

Queensland Division:
Patron: His Excellency The Governor of Queensland.
President: Comdr. N. S. Pixley, M.B.E., V.R.D., R.A.N.R. (Retd.), Ryan House, Eagle Street, Brisbane.
Hon. Sec.: G. B. O'Neill, Esq., Box 3762., G.P.O., Brisbane.

Australian Capital Territory Division:
President: His Excellency, G. E. L. Alderton, C.M.G. (High Commissioner for New Zealand).
Hon. Sec.: Lieut. D. M. Blake, R.A.N.V.R., 60 Limestone Avenue, Ainslie, A.C.T. 'Phone: J 3237.

Northern Territory Division:
Patron: His Honour the Administrator, J. C. Archer, Esq., O.B.E.
President: Captain S. H. K. Spurgeon, D.S.O., O.B.E., R.A.N. (E/L).
Hon. Sec.: Miss G. Gordon.

AUSTRALIAN SEA CADET COUNCIL:
Representatives of the Naval Board: Director of Naval Reserves, Capt. G. D. Tancred, D.S.C.
Comdr. H. L. Gunn, O.B.E., D.S.C.
Representatives of The Navy League: Comdr. R. A. Nettlefold, D.S.C., V.R.D., R.A.N.V.R.
L. G. Pearson, Esq.; L. Forsythe, Esq.
Lieut.-Comdr. F. G. Evans, R.A.N.V.R.
Hon. Sec.: Comdr. R. P. Middleton, O.B.E.

EDITOR'S NOTES

In spite of the mid-winter leave period, someone must have been doing some work, and congratulations are due to whoever organised the press coverage in connection with the handing-over of H.M.A.S. "Vampire." Although pictures of the event may be familiar in some quarters, we are glad to publish a few that appeared in the "Sydney Morning Herald," and take this opportunity of expressing appreciation to that newspaper, as well as to the Melbourne "Age" for a block showing Captain A. N. Boulton, the new Commonwealth Director of Navigation.

• • • •

It's not every day that Australia gets a Daring class destroyer, and satisfaction in the possession of what is the last word in the light-heavyweight type of naval shipbuilding can be taken to include the shipbuilders as well. A subsidiary of the famous Vickers Group and the largest private dockyard in the country, the Cockatoo Island Docks and Engineering Company has in its day handled troop-carriers such as the "Queens," the "Aquitania" and her sister ship the "Mauretania," besides building a number of well known ships for the Royal Australian Navy.

H.M.A.S. "Vampire" is the second of her class to be built at Cockatoo Island. She will find herself amongst relations, as it were, for one "Battle" and three "Tribal" class destroyers, together with frigates, corvettes and numerous smaller fry, have all come from the same yards.

• • • •

One of the reasons that the Sea Cadets get lost in the crowd at times is because they look so much like naval ratings. Lots of them are nearly as tall, and wherever they are seen in public they are just as well turned out. Drill and marching by Sea Cadets noticed at recent functions has been first class. As a body the Cadets are keen and eager and ready to help themselves, as the Commanding Officer of T.S. "Sirius" showed in his account of activities in the St. Georges' River district. That letter in the June number of "The Navy" excited interest in all sorts of places, and the Editor looks forward to receiving similar descriptions of the doings of Sea Cadets in other States.

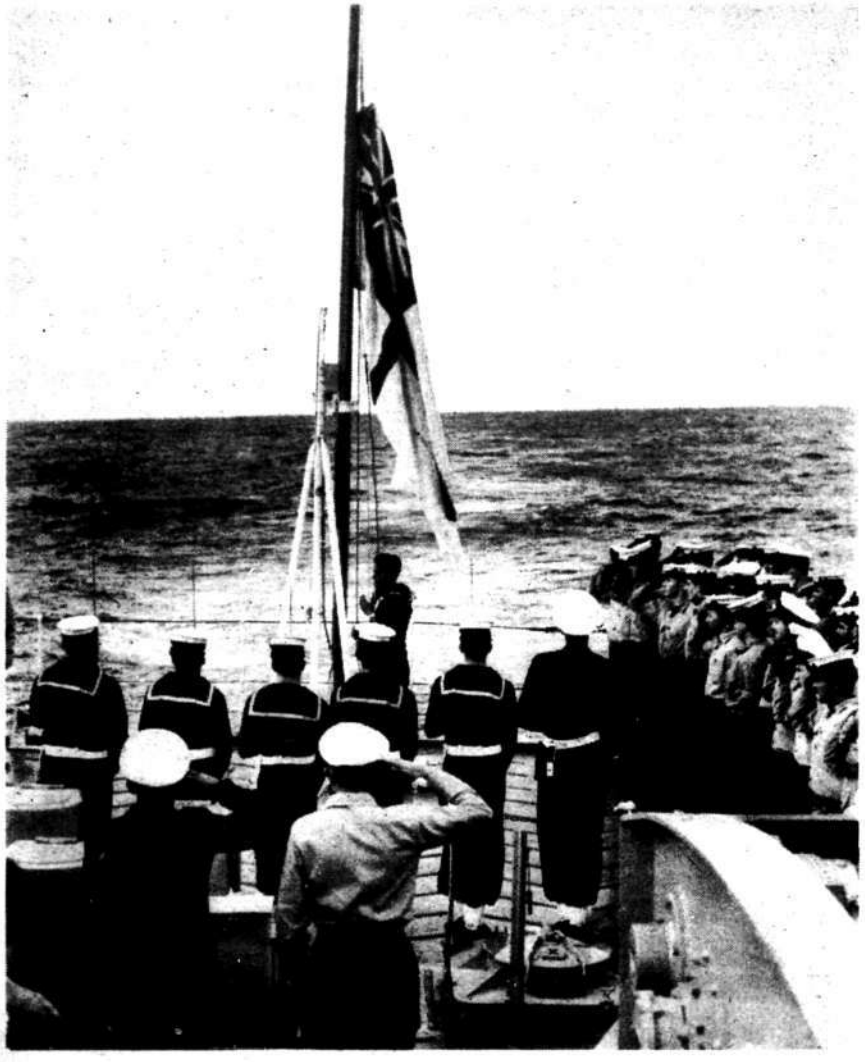
• • • •

This month we repay a debt that has been outstanding far too long. On various occasions, G. Hermon Gill, the naval historian, has taken over the editorial chair and directed the affairs of this journal. On that account, perhaps, no notice regarding the first volume of his officially commissioned history of the Royal Australian Navy (1939-42) has yet appeared in these pages. The omission has now been repaired by someone who prefers to sign himself "Atticus." With the views expressed we are in full agreement.

The point is made that there is a similarity in the stories told by both Arthur W. Jose and Hermon Gill. There is, of course, some similarity between the authors, too. Both won their spurs in journalism and, for that reason, one supposes, both had something to do with wartime censorship. Both men are also writers of distinction.

It's worth remarking, however, that, while Jose held the rank of captain in the army, Gill was a deck officer in the British Merchant Marine from 1910-22, and that included seatime in the First World War. During the last war he served as an officer of the R.A.N.V.R. These details may explain how it is that he handles his task with such apparent ease.

The captain of the new "Vampire," Captain E. J. Feat, D.S.C., was serving in the old "Vampire" at the time of her loss in 1942.



SALUTE TO A DARING

The ship's company salutes the White Ensign as it is raised after H.M.A.S. "Vampire" was handed over to the Minister for the Navy, Senator J. G. Gorton, at a ceremony at sea. The 3,500-ton destroyer was built by Cockatoo Docks and Engineering Company Pty. Ltd.

DARING IS AS DARING DOES

HAD the late Herr Goebels been with us off Sydney Heads a few weeks ago, he would have seen another "Vampire" accepted into the Royal Australian Navy. This was a larger, more heavily armed vessel than her predecessor of the same name, who, with four other Australian destroyers, formed the "Scrap Iron Flotilla" to which Herr Goebels once referred. That ironic comment should be permanently displayed somewhere in the new ship, to remind those now serving of the "spud run" to Tobruk.

More than three times the tonnage of her namesake, the 3,500-ton Daring class ship, "Vampire" recently taken over by the Minister for the Navy, Senator Gorton, might reasonably be called a light cruiser. Laid down in 1952 and built at a cost of £6,500,000, she is the last word in post-war thinking—the fast, hunter-killer type of submarine chaser, as capable of carrying out extended operations on her own, as she is of providing cover for ships of the Fleet, or protecting trade or troop movements.

On paper, there isn't much difference between the armament of the two "Vampires". Built in England in 1916-17 and transferred to Australia in 1932, the ship that Goebels found time to notice carried four 4-in. guns and six 21-in. torpedo tubes, plus fifty depth charges and a hastily assembled assortment of A/A weapons come by in different ways. In the main, the armament was designed for close-in work, depending more upon human hands and eyes than upon some electronic brain.

The present "Vampire" fires her six 4.5-in. guns from three stabilised platforms, combining crew protection with a modern system of mechanically predicted fire control that leaves the human brain a mile behind. The 40-mm. Bofors anti-aircraft guns are hard to beat at medium range, while high-flying aircraft have something to reckon with in the burst of a proximity fused 4.5-in shell. With five 21-in. tubes carrying torpedos with the characteristics of a well-trained Queensland cattle-heeling dog, and mortars throwing a depth charge pattern on and around an underwater target caught and held with absolute certainty, Australia's latest "Vampire" is a formidable proposition. Built by Cockatoo Docks and Engineering Co. of Sydney, she is the third Daring class ship to join the Fleet.

Her sisters, "Voyager" and "Vendetta", also carry names of Australian-manned ships that fought through the early stages of the Mediterranean campaign. When "Vampire" docked in Malta in March, 1940, she had steamed 26,000 miles, and that before Italy had entered the war. With her middle-aged sisters, "Vampire" made her presence felt on numerous occasions, and together these ships of another generation will be remembered as belonging to a select company who, during a grim period in 1941, carried essential stores and reinforcements to the beleagured fortress of Tobruk, when a garrison in being was a threat of Rommel's L. of C., then extended to their utmost in the Western Desert.

Brought back to face a menace nearer home, "Vampire" formed one of the destroyer screen to the battleships "Prince of Wales" and "Repulse", when those two great ships were lost to Japanese air attack off the coast of Malaya in December, 1941. At Endau and elsewhere, "Vampire" was actively engaged until the last, when, five months later, she was herself sunk in an engagement with Japanese carrier-borne planes in the Bay of Bengal. With her name she passes on her own tradition.

Daring class ships are a compromise between the destroyer and the cruiser. Designed to carry out the functions of both, they are light and fast, and, when resolutely handled, have every chance of running under the enemy's guard and getting away with it. If Australia's defence problems involve the

BEST WISHES TO H.M.A.S. "VAMPIRE" FROM

Harringtons Metallurgists

PTY. LTD.

Manufacturers of

SILVER BRAZING ALLOYS

47 Hotham Parade Artarmon, N.S.W.

Telephone: JF 4027

protection of trade routes, the Daring class ship provides the punch and speed required to deal with any conventional type of surface raider or submarine. But with the coming of nuclear propulsion the guessing game is on again.

What little has yet emerged suggests that the nuclear-powered vessel laughs at distance. Endurance is almost indefinite, and bunkers are represented by a lump of uranium the size of a cricket ball. There is talk of an underwater speed of 40 knots, and missiles like "Polaris" that can be discharged from a submerged submarine standing a hundred miles or more off shore.

No doubt claims are exaggerated for reasons of prestige, but it is probably true that Russia has a submarine component of more than 500, and that at least 100 of these boats are based on Vladivostok. How many may be nuclear propelled is something else again, but distributed over an area the size of the Pacific Ocean such a threat is tempered by the laws of time and space.

Submarines operating off the Australian coast will risk detection by air as well as sea patrols, both using equipment similar to that installed in the R.A.N.'s anti-submarine ships of the "Q" class as well as in the larger Darings. What happens then is anybody's guess. We can only go by past experience, and with this in mind the appearance of H.M.A.S. "Vampire" is a reassuring thing. Everything has been done to fit her for a role as already known, but in the end it's what a Daring does that counts.

Leading Cook T. L. Chaplan hands out dinner to L.M. (E) D. M. Brown, one of the 250 junior ratings on board the "Vampire," at mess.

HISTORIC ENGRAVING

RECENTLY discovered in an old house and presented to the Williamstown Council (Victoria) is an engraving of the "Victoria," described as "the first ship of war ever built at the cost and for the special service of a British colony . . . "

"Victoria" was not classed as a man-o'-war by Admiralty nor was she entitled to wear the White Ensign, but she represented the first practical attempt by any of the Australian colonies to provide themselves with armed protection.

A vessel of 580 tons, "Victoria" was built at the yards of Young, Son, Magnay & Co. of London, and, although fitted to mount two 56-cwt., 32-pounders and six 25 cwt., 32-pounder guns, only one of the heavier and two of the lighter guns was actually carried.

"Victoria" left Plymouth for Melbourne on 8th March, 1856, under command of Captain W. H. Norman and arrived at Williamstown on May 31. She acted as a transport for Imperial troops proceeding to the Maori War of 1860-1, and finally became a Water Police vessel in Port Phillip Bay. She was paid off in 1864.

"AUSTRAL"
NAVAL BRASS PLATES

used for fabricating the condenser tube plates on

H.M.A.S. "VAMPIRE"

as well as the corrosion resisting manganese bronze were manufactured by

AUSTRAL BRONZE COMPANY PTY. LIMITED

Austral Bronze is Australia's leading manufacturer of copper and brass sheet. Coiled copper sheet, Austral Bronze's newest product, is the ideal, and has proven to be the most economical, waterial for roofing.

Near to sea coast and in country districts its durability and economy are unquestioned. "Austral" copper sheet, available in lengths of up to 250ft. and up to 3ft. wide, in addition to roofing, is the cheapest and most ideal material in the long run for gutterings, downpipes, dampcourses and flashings, too.

Freedom from repairs or maintenance expenses also makes copper one of the most economical and best materials available for the home. You, too, should insist on copper!

Articles manufactured entirely from "Austral" sheet incude hot water services, jewellery, kitchenware, etc.

Manufactured by

AUSTRAL BRONZE COMPANY PTY. LIMITED

Be budget wise—ECONOMISE with copper—the first cost is the last!

128-130 Rothschild Ave. Rosebery. MU 4443
473-479 Swan St. Burnley. JB 4324
224 Montague Rd. West End. J 6562
463 Torrens Rd. Woodville. JL 5366
101 St. George's Terrace Perth. BA 7072

AB81/FP

Senator Gorton (second right) with "old boys" of H.M.A.S. "Vampire."

Pictured above with the Minister for the Navy, Senator Gorton, who himself served as a pilot with the R.A.A.F. 1940-45, are three members of the ship's company of the destroyer "Vampire", who were on board the ship when she was sunk by Japanese aircraft off Ceylon on 9th April, 1942.

Now captain of the Daring class ship "Vampire" recently accepted into the R.A.N., Captain E. J. Peel, D.S.C., a graduate of the Royal Australian Naval College, was a junior officer serving in H.M.A.S. "Canberra" on the outbreak of war. He was appointed to "Vendetta" at the beginning of 1940 and so experienced the gruelling times of the "Tobruk Ferry Service", when "Vendetta" made 39 runs into and out of Tobruk.

Captain Peel, then Lieutenant, joined "Vampire" at a stage when constant service was leading to mechanical trouble, and vibration at anything above sixteen knots made dockyard attention an urgent matter. The ship was sent to Singapore for attention, and Captain Peel was still aboard her when she was lost in circumstances described elsewhere in this issue.

As commanding officer of H.M.A.S. "Gascoyne", Captain Peel was instrumental in rescuing about 1,300 men, mostly U.S. Troops, from the Dutch transport "Sommelsdijk" (9,227 tons) which had been struck by a Japanese aerial torpedo while lying off Samar Island in the Philippines at the end of 1944.

Awarded the D.S.C. and the U.S. Medal of Merit, post war duties have included appointments of Director of Operations (1948) and, later, Naval Member of the Joint Planning Staff at Navy Office.

Lieutenant W. R. Devine, whose home is in Frankston, Victoria, enlisted in the R.A.N. early in 1935, and was rated Leading Seaman in the destroyer "Vampire" when she was lost in 1942. Specialising in gunnery, this officer was commissioned in March, 1950 and is as well known at the gunnery school at F.N.D., as he is in a number of ships in which he has served.

Chief Petty Officer N. W. Chandler of Brisbane entered the R.A.N. as a Reserve rating in October, 1939, and was born on the books of "Vampire" at the time of the ill-fated attempt by the British battleships "Prince of Wales" and "Repulse" to interrupt the Japanese invasion of Malaya. "Vampire" brought in 225 of the survivors, and shortly after was engaged in an attack against another group of Japanese transports at Endau eighty miles north of Singapore. In this confused melee, another destroyer, H.M.S. "Thanet", was sunk, while "Vampire" escaped in the darkness.

C.P.O. Chandler saw "Vampire's" guns shoot down at least one of the Japanese planes which attacked the ship on Easter Sunday, 5th April, 1942. They got her, though; she sank in ten minutes.

Turning over to the P.N.F. in 1946, C.P.O. Chandler made it, badge by badge, and with twenty years of strenuous service behind him seems good for twenty more.

AGE LIMITS FOR ENTRY OF CADET-MIDSHIPMEN EXTENDED

THE age limits for boys wishing to join the Royal Australian Navy as Cadet Midshipmen has been increased by one year. Boys between the ages of 14½ and 16½ years on the 1st January of the year of entry are now eligible for selection. The entry of older boys of matriculation standard remains unaltered at 19 years or under.

UNIQUE BOAT TEST

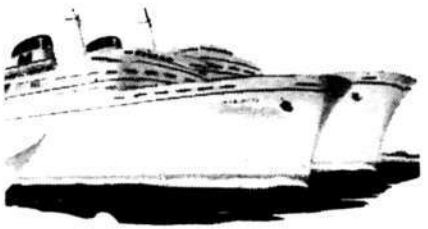
A British boat firm has been given permission to test a lifeboat over the Niagara Falls, Ontario, in September. It will be controlled from shore by an electronic device when it goes over the falls.

Matson Lines

congratulate

THE ROYAL AUSTRALIAN NAVY

on the acquisition of



H.M.A.S. VAMPIRE

the third "Daring" Class
Destroyer
to be built in Australia

MATSON LINES: 82 Elizabeth Street, Sydney; 101 William Street, Melbourne; 73 Queen Street, Auckland.
U178

Dobbie Bros. Thermometers Pty. Ltd.

•

SUPPLIERS OF THE DISTANT READING DIAL THERMOMETERS FITTED IN THE AUSTRALIAN-BUILT DARING CLASS DESTROYERS. CONTRACTORS TO H.M. ROYAL AUSTRALIAN NAVY.

•

76-80 LITTLE LONSDALE STREET
MELBOURNE — FB 2832-3

58 PITT STREET
SYDNEY — BU 7064

•

Australia's Thermometer Specialists

COCKATOO ISLAND DOCK

COCKATOO Island is the largest of eight small rocky outcrops studding the waters of Port Jackson. Surrounded by deep water its yellow sandstone once spread over some thirty two acres. Reclamation has since added further eight acres. Its height above sea level, in the early days of the Colony averaged some fifty feet. It lies some two and a quarter miles westerly from the Harbour Bridge, midway between Long Cove and Lane Cove estuaries.

The early settlers thought little of it or its companion islands and for fifty years following the arrival of the First Fleet, the birds remained undisturbed. It was not until 1839 that officialdom casting its eyes around for a convict settlement decided that here at Sydney Town's very back door, was the ideal site.

In a despatch dated July, 1839, Governor Gipps remarked that "no place in New South Wales would be so well calculated for it as Cockatoo Island; surrounded as it is, by deep water and yet under the very eye of authority". Cost of preliminary work was estimated at £4,078. The British Colonial Office accepted the recommendation and before the close of the year the first batch of "iron gang" men tramped ashore from the Government transport.

About this time, other things besides the safe lodging of law breakers occupied the official mind. Among these, was the state of the local wheat market, the price was low, production high; the time ripe to buy for future use. Storage was the problem, and to solve it, Gipps resolved to employ the Cockatoo convicts in the construction of silos. Laboriously excavated from the solid sandstone in the shape of a bottle, each held from 3,000 to 5,000 bushels. By November, 1840, some 20,000 bushels were safely underground.

The silos completed, Gipps turned his attention to further profitable use of the convict labour, and decided to employ it in preparation for docking accommodation. In November, 1845, the Governor laid his plans before the Secretary of State. Stressing the urgent need for a dry dock at Sydney and the advantages to Colony and Empire, Gipps stated:—"Cockatoo Island is the place which I consider best adapted for a Naval establishment and since this island was first occupied by convicts in 1839, I have constantly borne in view the construction, at some future period of a dry dock, as well as a slip for hauling ships on the island.

THE WORKING AND HANDLING OF A SHIP DEPENDS IN NO SMALL MEASURE ON THE WAY SHE IS BUILT

In spite of setbacks, Gipps persisted with his plans, and in 1847 excavations for the first Australian drydock were begun. It proved, with the inadequate tools, to be a herculean task, and it was some seven years (June 5th, 1854) before the first lining stones were laid. Named the Fitzroy Dock, it was opened in 1858 and the first ship, (H.M.S. Herald) entered the new dock on 1st December of that year. At this time it was by no means complete and work continued until 1860. Much of the credit for the success of this first dock must go to one Harry Broderick, Dockmaster and Engineer who arrived at Port Jackson in the barque "Catherine Stewart Forbes" in June 1853.

beer in handy cans

FOSTER'S LAGER
VICTORIA BITTER

The Fitzroy Dock met the docking needs of the Navy and the Colony until the early eighties when an increase in size of ship construction made it obsolete. Following much discussion the sum of £150,000 was voted for a new dock and preliminary work begun. It was designed for the docking of the largest types of the day and measured 635 ft. by 80 ft. with a depth of 26 ft. 3 inches; or 161 ft. longer and 33 ft. wider than the Fitzroy dock.

In 1884 excavations were completed and a contract for £135,000 let to Mr. Lewis Samuel to finish the work. Lining began in 1885, and six years later (1890) the new dock was officially opened as the Sutherland Dock in honour of a former Minister of Works.

In 1913, with the formation of the R.A.N., the N.S.W. Government relinquished control in favour of the Commonwealth and the Navy Department assumed responsibility.

Under naval control; considerable expansion took place at Cockatoo during World War One and most of the workshops now in use were erected. Though lacking facilities of the present day and forced to rely on overseas technical resources an ambitious shipbuilding programme was undertaken. During the war period, two light cruisers "Brisbane" and "Adelaide" were built. Three destroyers, "Huon", "Torrens" and "Swan" were launched from the Cockatoo slips.

In 1921, the Shipping Control Board of the Prime Minister's Department became responsible for administering Cockatoo Island. At this time large scale ship building undertaken by the Commonwealth during the war years had overcome its teething troubles. In June, 1921, seven E Class freighters were building in Australian yards including Cockatoo. Completion of the E Class programme, thirteen vessels in all was carried out during the period of Shipping Control Board's administration.

In 1923, the Australian Commonwealth Shipping Board came into being, taking over responsibility for Government Dockyards. During the term of Board's administration, (1923-33) a number of ships left the Cockatoo slips, including the 10,000 ton refrigeration vessels "Fordsdale" and "Ferndale", the seaplane carrier "Albatross," and three lighthouse tenders.

With the close of the post war decade and the dawn of the thirties depression hit Cockatoo. Inertia descended on the dockyard and it was hard put to find employment for its costly plant. Eventually in 1933 the Government decided to lease it to private enterprise. The Cockatoo Docks and Engineering Co. Pty. Ltd. was formed and thus ended almost one hundred years of Government control.

PORT LINE
LIMITED

Regular sailings for:
UNITED KINGDOM and CONTINENT
TAKING WOOL, REFRIGERATED and GENERAL CARGO
ALSO LIMITED NUMBER SALOON PASSENGERS.

For further particulars, apply:
PORT LINE LTD.
50 Young Street, Sydney
(Inc. in England)

Or Agents:
GIBBS BRIGHT & CO.
37 Pitt Street, Sydney

Also at
BRISBANE, MELBOURNE, ADELAIDE, PERTH, FREMANTLE, NEWCASTLE and HOBART

Best Wishes To
H.M.A.S. "VAMPIRE"
from
RUSTON & HORNSBY (AUSTRALIA) PTY. LTD.
ENGINEERS
Melbourne, Sydney, Brisbane and Adelaide
REGISTERED OFFICE
DANDENONG RD., CLAYTON, VICTORIA

Following the outbreak of the Second World war in 1939, the lessees of the Dockyard formed a "duration agreement" under which the Company received a Management Fee based on turnover. On the practical side this partial return to Government control worked smoothly preserving as it did the rights of both Commonwealth and private enterprise.

The spur of war wrought many changes at Cockatoo. A new Turbine Shop and Non-ferrous Foundry were built entailing the blasting and removal of some 100,000 cubic yards of sandstone. Several new wharves were erected, new cranes installed, workers' canteens built and a patent slipway laid down. An expenditure of almost £500,000 was involved at a time when by present standards costs were low. At the peak of the war period the dockyard employed 3,200 men engaged in the repair and building of ships of many types. Seven days a week throughout the war years the two graving docks witnessed ceaseless toil, painting and scraping, cleaning and repairing, big and little ships. Total dockings comprised 750 ships, aggregating 3,885,446 gross tons including 355 naval vessels. The largest merchant vessel docked, the "Dominion Monarch", 27,155 tons, and the largest naval vessel H.M.S. "Glory," 20,785 tons.

In September, 1939, Cockatoo was already engaged on a programme of naval construction and modernisation of existing warships. Three tribal Class destroyers were on order and two Sloops and two Boom Defence vessels on the stocks. Before peace came in 1945 Cockatoo, launched eight Corvettes, three Destroyers, two Sloops, four Boom Defence vessels and two Frigates. In addition, two River Class freighters (5,000 tons) were built and the engines and boilers for a number of D class freighters. The Cockatoo boiler shop turned out all except twelve boilers for all warships built in Australia during the war, a total of 173 of all types.

Side by side with new construction, Cockatoo remained under constant pressure overhauling, repairing and converting ships varying from the "Queen Mary" to a submarine. Major repairs were carried out on a number of battle damaged warships, including the U.S. cruisers "Portland," "Chester" and New Orleans. The fitting of a new bow to "Chicago" in the remarkable time of 21 days brought official commendation from the U.S. authorities.

Today facilities exist at Cockatoo to deal with every phase of shipbuilding and maintenances. The two graving docks, though dwarfed by the Captain Cook Dock at Garden Island, still have many years of useful service to come. The larger of the two, the Sutherland Dock, enlarged in 1928, now measures 690 feet long, has a mean breadth of 88 feet, with a depth at low water spring tides of 26 feet 3 inches. A patent slip on the island's southern side is 105 feet long, 28 feet wide and is capable of handling ships up to 250 tons displacement.

In area, Cockatoo now covers some 40 acres, with 3000 feet of deep water wharfage space. Machine shops cover more than 65,000 square feet and the Turbine Shop measures 320 feet by 70 feet. Plate and Boiler shops cover some 100,000 square feet and efficient.

COMPAGNIE DES MESSAGERIES MARITIMES

Head Office in Australasia

36 GROSVENOR STREET, SYDNEY

'Phone: BU 2654

Regular Passenger and Cargo Services from Australia to France, New Caledonia, New Hebrides and Tahiti.

General Agents for

Cie de Transports Aeriens Intercontinentaux (T.A.I.)

BATTLE CLASS ARE EYES OF THE FLEET

H.M.S. "Battleaxe", a "Weapons class destroyer which is to be one of the new "eyes of the Fleet", has commissioned at Rosyth Dockyard. During the two years she has been at Rosyth the ship has been modernised as a radar picket destroyer. Like her sister ship, H.M.S. "Broadsword", which commissioned at Rosyth in October last year, she will sail far in front of the main fleet to give warning of large-scale air attack. The large radar mast, which is perhaps the ship's most important equipment, stands impressively amidships.

"KEMBLA"

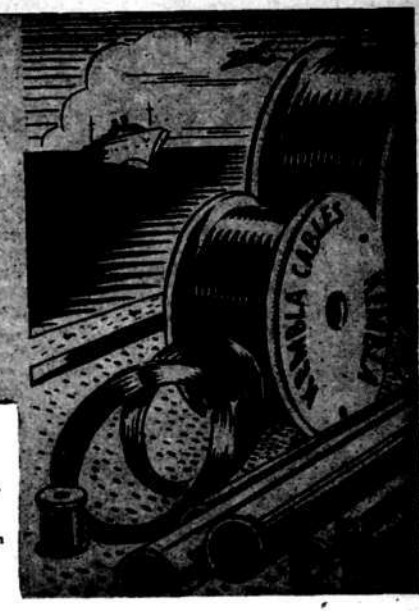
COPPER, BRASS AND OTHER NON-FERROUS WIRE CABLES & TUBES

METAL MANUFACTURES LTD.

PORT KEMBLA, N.S.W.

SELLING AGENTS

(with Distributors in all States)



TUBES AND BRASS WIRE

KNOX SCHLAPP PTY. LTD.

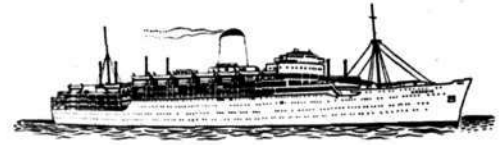
Adelaide, Brisbane, Melbourne, Sydney, Launceston.

WIRE AND CABLES

BRITISH INSULATED CALLENDER'S CABLES LTD.

Melbourne, Albury, Sydney, Newcastle, Wollongong, Brisbane, Hobart, Launceston Adelaide.

P&O SEA TRAVEL AT ITS BEST!



● To England VIA SUEZ ● Pleasure Cruises

● Boomerang Excursions ● Ceylon Holidays

AGENTS:

MACDONALD, HAMILTON & CO.

SYDNEY, NEWCASTLE

PENINSULAR & ORIENTAL S.N Co. (Inc. in England with limited liability)

NAVAL AFFAIRS— from all Compass Points

NEW APPOINTMENTS IN THE R.A.N.

THE following appointments for senior officers of the R.A.N. have been announced.

Captain F. L. George, at present attending the Imperial Defence College in London, to be C.S.T. at Flinders Naval Depot from 2/2/60 in the rank of Commodore 2nd Class.

Pending the return of Captain George, Commodore J. C. Morrow, C.B.E., D.S.O., D.S.C., at present N.O.I.C. Western Australia, will act as C.S.T. Flinders Naval Depot from 2/12/59, and will retire from the service on 9/2/60. He was previously C.S.T., F.N.D. from November '52 to January '55.

Captain T. K. Morrison, O.B.E., D.S.C., now captain of H.M.A.S. "Melbourne" and C.S.O. to F.O.C.A.F., to be captain of H.M.A.S. "Albatross," the air station at Nowra (N.S.W.) from 22/12/59.

Captain J. S. Mesley, M.V.O., D.S.C., who is also attending the Imperial Defence College in London, to be captain of "Melbourne" and C.S.O. to F.O.C.A.F. in succession to Captain Morrison.

Captain G. D. Tancred, D.S.C., at present Director of Naval Reserves at Navy Office, Melbourne, to be captain of H.M.A.S. "Penguin" at Balmoral, Sydney, from 8/2/60.

Captain W. B. M. Marks, C.B.E., D.S.C., serving in Washington as Australian Naval Attache at the Australian Embassy, to succeed Captain Tancred as D.N.R.

QUEEN'S BIRTHDAY HONOURS

INCLUDED amongst recipients in the recent Honours List is Commodore 2nd Class Patrick Perry, Fourth Naval Member of the Commonwealth Naval Board, who was awarded the C.B.E. Commander Bertrand Lucien Dechaineux, V.R.D., R.A.N.V.R., received the O.B.E. (Mil) and Geoffrey Francis Adeney, Senior Master at the Naval College, the M.B.E.

* * *

NEW CLASS OF FRIGATE

THE launching of H.M.S. "Ashanti" was an important event, as she is the first ship of a new "Tribal" class of frigates.

The "Ashanti" will be an interesting and useful ship. She will be the first frigate designed to carry a helicopter for anti-submarine duties, a feature which will become more and more important in the Navy's planning.

One is inclined to regard frigates as little ships, but since the war their development has been remarkable. The "Ashanti" and her sister ships will be larger than fleet destroyers of the same class which served with such distinction in battle. She has an overall length of 360 feet and a beam of 42 feet 6 inches.

The armament is also impressive: two 4.5-inch guns in single mountings, two smaller guns, anti-submarine mortars with a destructive power far greater than anything known in the last war, and six 21-inch torpedo tubes.

Other features of this ship will be a totally enclosed bridge, an air-conditioned Operations Room and machinery which could be controlled remotely at all powers. Such features will give her the ability to operate within an area contaminated by nuclear fall out.

* * *

NEW SCHEME FOR HELICOPTER PILOTS

THE growing importance of helicopters in the Royal Navy, as illustrated in the fitting of a helicopter deck in the "Ashanti" has caused the Admiralty to introduce a new five-year short service commission for helicopter pilots.

In the past, helicopter pilots have been chosen from among those trained to fly fixed-wing aircraft, but with the present cost of pilot training this can only be a very expensive method. The new entry, details of which are to be announced shortly, will introduce to the Service men who will be specially trained for helicopters alone.

It will immediately reduce and ultimately eliminate the need to transfer to helicopters pilots trained to fly some of the fastest machines in the world.

* * *

A PRICE ON THE SAILOR'S HEAD

"SAILORS are expensive people. The annual cost of an able-bodied seaman was reckoned a year ago to be about £620. Improvements in pay and conditions have now increased the figure to £710." — The Parliamentary Secretary to the Admiralty in the debate on the Navy Estimates.

* * *

POLAR AWARD

THE Royal Geographical Society (London) have awarded Commander William Anderson, U.S.N., captain of the nuclear-powered submarine "Nautilus," the Patron's Medal for "a remarkable feat of navigation in the difficult terrestrial magnetic conditions prevailing in the vicinity of the north magnetic pole." The Patron's Medal is only awarded with the consent of H.M. the Queen.

* * *

HIGH APPOINTMENTS

APPOINTED Admiral of the Fleet in 1956, Earl Mountbatten of Burma will shortly relinquish the position of First Sea Lord to become Chief of the Defence Staff — a post created in July of last year to streamline Britain's defence organisation.

Earl Mountbatten's dual task will be that of advising the Minister for Defence on the military aspects of the world situation, and at the same time working out with the Chiefs of Staff the most effective method of converting Government policy into terms of men and weapons. In addition, Earl Mountbatten will represent Britain on the military committee of the North Atlantic Treaty Organisation.

Born in 1900, Earl Mountbatten has had one of the most brilliant careers in naval history. In this he followed a distinguished father, Prince Louis of Battenberg, a grandson of Queen Victoria and an Admiral in the Royal Navy, who was First Sea Lord at the beginning of World War One. Although a man of outstanding ability, Prince Louis' name and German ancestry coupled with the position he held, led to public outcry in 1914. He resigned from the Service at the peak of his career, and, in 1917, translated a German name into its English equivalent — Mountbatten. His son, the present Earl, then a naval cadet, is said to have sworn that he in turn would become First Sea Lord. He has done so and been much else besides.

NICOL BROS. PTY. LTD.
INCORPORATING
PENGUIN HEAVY LIFTING PTY. LTD.
&
PENGUIN PTY. LTD.
ALL CLASSES OF STEAM, DIESEL AND GENERAL ENGINEERING
BOILERMAKERS, OXY-ACETYLENE AND ELECTRIC WELDERS
PLUMBING AND ELECTRICAL WORK
FLOATING CRANE AVAILABLE AT ALL TIMES
(20 TON CAPACITY)
ALL CLASSES OF MARINE EQUIPMENT FOR SALE
10-20 WESTON ST., BALMAIN EAST
'Phones: WB 3121 — 3 lines
After Hours: UM 9485, WM 3225, FM 5708

Beginning the Second World War as a captain in command of a destroyer flotilla, Earl Mountbatten was Allied Supreme Commander, South-East Asia, when, in September, 1945, he received in Singapore the surrender of all Japanese forces in the area. At that time he held the acting rank of full Admiral — the youngest supreme commander since Napoleon.

Picked by Mr. Churchill to relieve the seventy-year-old Admiral of the Fleet Sir Rodger Keys, who had performed invaluable service in building up the Commandos and in pressing forward the design and construction of invasion craft, Captain Mountbatten became Chief of Combined Operations early in 1942 in the rank of Rear Admiral. To that was added the corresponding ranks of Lieutenant-General and Air-Marshal, in recognition of the varied nature of his work and contacts.

The last of the British Viceroys and the first constitutional Governor-General of India, this gifted uncle of the Duke of Edinburgh received an earldom in 1947, when his appointment lapsed with the coming into being of the new dominions of India and Pakistan. Earl Mountbatten then returned to duty with the Royal Navy, and before going to the Admiralty as First Sea Lord, he was C.-in-C. Mediterranean.

His successor as First Sea Lord will be Admiral Sir Charles Lamb, G.C.B., who and has since been C.-in-C. was Second Sea Lord in 1956 Mediterranean.

* * *

ADMIRAL "SAVVEE PLENTY TOO MUCH"

SOME ratings in the Papua-New Guinea Division of the Royal Australian Navy who were recently addressed by the Flag Officer Commanding the Australian Fleet (Rear Admiral G. G. O. Gatacre) in pidgin English, said afterwards that "Big Fella masta belong Melbourne — savvee plenty too much."

Rear Admiral Gatacre, on his way back from the Far East in H.M.A.S. "Melbourne," called at H.M.A.S. "Tarangau," the R.A.N. base on Manus Island. On landing,

Rear Admiral Gatacre was received by a guard of honour mounted by members of the Papua-New Guinea Division, which has a strength of about 100 and is drawn from natives in the Australian territories.

He was impressed by their bearing and appearance, and addressed them as follows:—"Now altogether man belong Navy belong P.N.G. Me lookim strong along you. Now altogether shirt na trousers na sandals belong you. Em e straight-true. Me likim gut. Altogether something belong you em e number one." Other ratings said of Rear Admiral Gatacre's ability to speak pidgin English "He speak im strong."

The "Melbourne" and five other ships of the R.A.N. recently took part in the important exercise SEA DEMON in the South China Sea, in which other ships of the SEATO nations were also engaged.

★ ★ ★

GOOD WORK IN A HURRICANE

AFTER having visited Wellington (N.Z.), the cadet-midshipman training ship, H.M.A.S. "Swan," left Auckland for Norfolk Island on the evening of Friday, 13th March. That was asking for it.

By the time "Swan" reached the Bay of Islands it was squally and rough, and early the following morning news received showed that a hurricane, then centred about 500 miles away, was moving in the ship's direction.

The captain of "Swan," Commander B. H. Loxton, R.A.N., had been in a cyclone off the coast of Western Australia just a year previously, and knowing that it would be impossible to get his ship clear to seaward, made for Port Tepuna, even though the area was only partially surveyed and there was real risk of grounding on a falling tide. The hurricane by this time was within 300 miles of his position, and the velocity of the wind was increasing all the time.

The thirty cadet-midshipmen on board were seeing what the Beaufort Scale could really do, for, with "Swan" anchored in something over three fathoms and dragging at that, berth had to be shifted to a more sheltered spot. Even here the engines were necessary to relieve the strain on the cables, for the ship was yawing and snatching in what was by now the kind of howling gale that made it impossible for anyone to remain on the forecastle.

By 2200, the velocity of the wind reached its maximum force of 110 m.p.h., or 15 on the scale devised originally by Admiral Sir Francis Beaufort in 1805. It was a hurricane-plus; the kind of thing to make a brass monkey sit down or else, but when it wore itself out towards morning, the only damage found was some stripping of paint on the aerials.

"Swan" weathered a bad night well. Another ship sheltering nearby dragged her anchors three times, to end up aground with damaged rudder and propellers. It could happen to anyone, and, even if luck played a part as it always does in such circumstances, Commander Loxton showed skill and seamanship of a kind that won him the commendation of the Commonwealth Naval Board.

Commander Loxton was born in Sydney in 1924 and is a graduate of the R.A.N. College. He has been captain of "Swan" since December, 1957, and will shortly leave for the United States to begin the U.S. command course.

★ ★ ★

TOUJOURS L'AMOUR

UNDER a heading with universal appeal, "The Sailor" (South Africa) offers the following study in international triangulation:—

"If a woman and two men are shipwrecked on a desert island for a month, what would happen?

If they're Spanish, one of the men would kill the other.

If they're Italian, the woman would kill one of the men.

If they're English, nothing would happen, because they hadn't been introduced.

If they're American, nothing would happen, because the men would be too busy talking business to join the lady.

If they are French — there is no problem."

And if Australian, we might add, they would probably organise a sweep on the Melbourne Cup — do you think so?

MELBOURNE STEAMSHIP CO. LTD.

Head Office:
51 KING ST., MELBOURNE
Branches or Agencies at all ports

Managing Agents for
HOBSONS BAY DOCK AND ENGINEERING CO. PTY. LTD.
Works: Williamstown, Victoria
HODGE ENGINEERING CO. PTY. LTD.
Works: Sussex St., Sydney
and
COCKBURN ENGINEERING PTY. LTD.
Works: Hines Rd., Fremantle
Ship Repairers, etc.

RECENT ANTARCTIC ACTIVITIES

IN a review of Australian activities in Antarctica which appears in "Current Notes", the Minister for External Affairs (Mr. R. G. Casey) explains that the heavy programme of work ahead necessitated the charter of a second vessel, the "Magga Dan", a sister ship to "Thala Dan".

Summarising the highlights of 1958, Mr. Casey began by saying that two weeks after the "Thala Dan" had left to return to Melbourne in March, 1958, a party of five men set out by tractor train to make gravity measurements and seismic soundings of the ice depth between Mount Henderson and the Casey Range, 20 miles south-west of Mawson. This was the first time a journey on this scale had been undertaken in the Antarctic Autumn. It was found that the bottom of the ice ranged between 100 feet above to 300 feet below sea level.

During August, the Australian Antarctic flight, which was the first stationed at Mawson in 1956, made its first emergency flight. A Beaver aircraft on its way to the Davis station had to make a forced landing because of engine trouble about 75 miles east of Mawson. Repairs were made under trying weather conditions and the aircraft flown back to Mawson. August was also notable for the discovery of another Emperor penuin rookery near Cape Darnley, 180 miles east of Mawson. As far as was known four years ago there were only five such rookeries in the world. There were now six of them within 300 miles of Mawson.

In the spring, a party of five men left Mawson with a tractor train and ollowed the route used by the 1957 party to a point 237 miles south of Mawson taking gravity measurements on the way. The party then turned northwards and travelled about 30 miles to the west of the outward route making seismic soundings of the ice thickness. The ice was found to be up to 8,500 feet thick and to extend down to 400 feet below sea level.

During October, the Antarctic flight began a busy programme which entailed more than 1,000 hours flying up to 10th December when the landing strip on the ice at Mawson Harbour began to break up. Supplies were dropped to field parties, there were reconnaissance and photographic flights, a geologist and surveyor were taken to selected points for geological surveys, astronomical determinations made of positions and depots laid for a party journeying overland from Amundsen Bay (350 miles west) to Mawson with dog sledges.

On the 28th November, this three man party with the 13 husky dogs which had been flown in to Amundsen Bay set out on a 400 mile trek to Mawson which it reached on 21st January this year. Members of the party made scientific observations and examined rock exposures on the way. On 26th November, the Danish polar vessel, "Thala Dan", left Melbourne with a new team of 17 men for the sub-Antarctic Macquarie Island station. While at Macquarie, surveyors using a helicopter and a tellurometer (electronic measuring instrument) made an accurate survey of the island's east coast.

On 26th December, the "Thala Dan" left Melbourne again—on this voyage taking relief parties for the Davis and Mawson station. When the ship was near Davis on 16th January she ran aground on an unchartered rock and holed a bulk storage tank.

(Continued on page 21)

EZDA

ZINC BASE DIE CASTING ALLOY

conforming in composition with
British Standard Specification 1004

produced by

ELECTROLYTIC ZINC COMPANY OF AUSTRALIA LIMITED

360 COLLINS STREET, MELBOURNE

as used in the production of
high quality die castings

by members of
THE ZINC ALLOY DIE CASTERS' ASSOCIATION OF AUSTRALIA

GOOD WISHES

to

H.M.A.S. "VAMPIRE"

and her complement

We have supplied many important steel forgings and castings used in the construction of this and other Australian-built naval vessels.

COMMONWEALTH STEEL COMPANY LIMITED

SPECIAL STEEL MANUFACTURERS WARATAH, N.S.W.

BEST WISHES

TO

H.M.A.S. "VAMPIRE"

and Personnel

FROM

JOHN O'NEIL & COY.

PTY. LTD.

496 KENT STREET, SYDNEY — BM 6938

Suppliers of

"HORNE" THERMOSTATIC STEAM VALVES

Contractors to Royal Australian Navy

BRIGHT STEEL BARS

"MARBRITE" Bright Steel Bars in Rounds, Hexagons, Squares and Rectangular Sections are well known to manufacturers throughout Australia.

They are also supplied to the Department of the Navy and major Naval Contractors in Carbon and Alloy grades including Special Sections.

GEO. H. MARTIN

PTY. LIMITED

32 BATHURST STREET, SYDNEY

Telegrams: "MARSON," Sydney

'Phone: BM 2441

Plants at Sydney, and Adelaide, South Aust.

ANTARCTIC ACTIVITIES

(from page 19)

The ship was freed from the rock the following day and temporary repairs carried out. Although the heaviest fast ice encountered by Australian Antartic expeditions prevented the ship reaching the usual anchorage at Davis, unloading began there on 27th January, 1959, and the changeover was completed by 31st January. The "Thala Dan" then went on to Mawson. Plans for a coastal exploration voyage of Enderby Land (from 220 to 490 miles west of Mawson) were abandoned because of the ship's condition.

The second chartered vessel, the "Magga Dan," sailed from Melbourne on 6th January, 1959, carrying an expedition led by Mr. Philip Law, Director of the Department's Antarctic Division. The vessel reached Lewis Island (1850 miles south and slightly west of Adelaide) on 13th January, and during two days there carried out partial repairs to the automatic weather station which had been damaged by a severe storm. After making a brief visit to the French Antarctic station Dumont d'Urville, the "Magga Dan" reached the Wilkes station on 25th January with the 14 Australians and three Americans who will man the station this year. The U.S. Navy's icebreaker "Staten Island" reached Wilkes on 2nd February and two days later the Australians accepted custody of the station. On 5th February, the "Magga Dan" left Wilkes to instal new masts at the automatic weather station at Lewis Island. When this task was completed on 9th February, the ship set out on an exploratory voyage along the coast of Oates Land which is on the extreme east of Australian Antarctic Territory and South of Macquarie Island, before returning to Melbourne.

British Press Comment on Nuclear Propulsion for Ships

THE report from the Atomic Energy Authority on the advanced gas-cooled reactor was presented to the Committee presided over by the Civil Lord of the Admiralty late in April; and on 23/4/59 the Admiralty announced that a number of British companies had sent in studies on nuclear powered ships based on reactor systems in which these companies are interested commercially.

The "Manchester Guardian," reporting this statement on 24/4/59 added:—

"Babcock and Wilcox Limited said recently that they had presented to the Admiralty a detailed proposal for a reactor in connection with the ship propulsion study for the Civil Lord's committee. The proposal is for a pressurised water reactor, a large number of which are now in operation and under construction throughout the world.

"The design was based on the firm's experience in the marine and nuclear field, together with developments resulting from the work of the American Babcock and Wilcox Company in their contract for the construction of the reactor for the first nuclear merchant ship, due to be launched this year."

The "Financial Times" also carried a short comment from its scientific correspondent:—

"A decision about the development of U.K. nuclear powered civil ships will be taken within the next two to three months. Completion of the detailed design of the first U.K. nuclear powered ship is expected, however, to be delayed for a longer period.

"The final decision will depend on the terms of the Galbraith Committee, the designs and estimates put forward by U.K. companies, and research work carried out by the U.K. Atomic Energy Authority.

"Admiral of the Fleet, Earl Mountbatten of Burma, who recently retired from the Navy after 46 years' service, recalled at a Press conference that it was only four years ago that enough nuclear scientists had become available to start developing the type of nuclear reactor required in a submarine . . . . "

A CASE FOR CLEAR THINKING IN A CONFUSED FIELD

Just prior to this announcement, an address was given at a conference in Holland by Mr. H. W. Bowker, of the Atomic Energy Authority, who said that it had still to be determined "'whether there is, or there is likely to be, a reaetor system that can produce power at a price comparable with that of conventional fuel when built in sizes that are required for commercial ships and when operated under marine conditions.'

"Nevertheless, if recent progress could be maintained, it was likely that nuclear-powered ships could be operating at competitive costs within five to ten years . . . . "

The address referred to work on reactors being done by the British General Electric Co., and by a research group of the Nuclear Power Plant Co. and Swan, Hunter & Wigham Richardson; and reported also

very briefly addresses given by experts from Norway and The Netherlands.

Reports have been circulating that in about 10 years the Navy hopes to have in commission at least eight nuclear powered submarines and possibly one or even two surface ships. The cost of the submarines is estimated at approximately £135,000,000. There is also a good deal of speculation about the possibility that at least one of the ships to be built to replace the "Queen Mary" and the "Queen Elizabeth" may have nuclear propulsion.

It seems likely that for the moment this is "kite flying." Obviously, a great deal must depend on the possibility that the cost of a nuclear propulsion plant can be brought within reasonable limits—if American experience is anything to go by, costs at present cannot be estimated with any certainty. The "Daily Telegraph" of 24/4/59 has given a leader to this question of making practical progress:—

"If this month passes without a statement from the Admiralty on reactors for nuclear powered ships, there will be keen disappointment among scientists working on the problem and in the shipbuilding and associated industries. It is of the first importance that Britain should design, build and sail the first nuclear merchant ship to be a business proposition. As Sir John Cockcroft has insisted, the crux of the problem is to achieve low capital cost; and this means building a unit with which experiments can be made. If the Admiralty, industry and the scientists are really to achieve something, would the Government not be well-advised to offer a high percentage of the cost of such a pilot ship on condition that interested industries contributed the rest? Some of the alarming estimates quoted by shipping authorities in the past are now flatly contradicted by engineers and scientists. Perhaps Mr. Macmillan could compose a new version of the famous minute that produced the Mulberry harbour: 'Don't argue the matter. The difficulties will argue for themselves'."

(From Navy League Digest)

Best wishes to

H.M.A.S. "VAMPIRE"

and Personnel

from

W. Kopsen & Co. Pty. Ltd.

376 KENT STREET, SYDNEY – BX 6331

Love in a Cold Climate

According to press reports a 12-nation conference, to include Australia and the Soviet Union, will meet in Washington in October, to conclude a treaty ensuring that Antarctica is used only for peaceful purposes. The countries attending are those which have been engaged in the International Geophysical Year activities amongst the snow and ice.

The treaty proposed will freeze conflicting claims to territory in Antarctica, and ensure that the region is used only for peaceful purposes. At the same time, scientific investigation of Antarctica by all countries will be permitted.

As many as 47 preliminary meetings took place in Washington between representatives of the 12 nations interested before the date for the October meeting was agreed upon. It has not yet been decided at what level the conference will be held.

In some quarters it is believed that a treaty can be concluded without any nation being required to renounce what historic rights it may have in the Antarctic. Once the treaty is signed it will be deposited with the United Nations.

The area, which has considerable significance for Australia, is regarded as a site for future space experiments. The vicinity of the South Pole is free of magnetic influence, and therefore has great advantage for moon probes.

The Soviet Union went into Antarctica for the first time during the International Geophysical Year, which began in 1957, and has maintained scientific teams there since then.

THE MERCHANT SERVICE

New Shipping Chief

A FORMER corvette commander in World War II, Captain A. N. Boulton (shown above) has been gazetted as the new Commonwealth Director of Navigation, following a distinguished record at sea both in peace and war time. He will succeed Captain D. S. Bull, who retired recently.

Captain Boulton, who is 54, served his apprenticeship as a cadet with the Ellerman and Bucknall Steamship Company, and, in 1925, left England to become an officer in the Adelaide Steamship Co.

Besides being a Bachelor of Commerce and an associate in accountancy at the University of Queensland, Captain Boulton also holds an extra master's foreign-going certificate, which is the highest qualification obtainable.

During the war he served in several ships as commanding officer, including four years in command of H.M.A.S. "Fremantle". He received special commendation for salvage work in connection with s.s. "Marosa" off Wilson's Promontory in the early part of the war.

After spending seven years in Western Australia as Deputy Director of Lighthouses and Navigation, Captain Boulton took up the position of principal nautical and ship surveyor for the Department of Shipping and Transport in 1955. At the present time, he is also a member of the executive committee of the Missions to Seamen and president of the Victorian branch of the Navy League.

★ ★ ★

A MARINE DIESEL WITH A FUTURE

The new model of marine diesel engine — the Monarch Class — has reached an advanced stage of test bed trials at the works of Mirrlees, Bickerton & Day, Hazel Grove, Stockport, Cheshire.

Developing a shaft horsepower of 2,400 at 300 crankshaft revolutions per minute, this six-cylinder direct reversing engine is the first of an entirely new series. The Monarch Class engine will be built in 6, 8 and 10 cylinder units.

The engine is the result of inviting official representatives of leading trawler and ship owners in Britain to give their opinions and requirements during engineering conferences at the Mirrlees works.

Co-operation was given with enthusiasm and the finished job provides an interesting example of practical market research between the builders of a heavy engineering product and the potential clients.

AN OLD TRADITION

As the youngest of ten shipwright apprentices in the Williamstown Dockyard, the fifteen-year-old John Carroll guided into place the 15-ton keel section of the second 1,800-ton anti-submarine frigate to be built in the naval dockyard. At present known as "05", the new ship is one of four Whitby class anti-submarine frigates being built for the R.A.N.

"Yarra", a sister ship to "05", was launched at Williamstown last September, while two others are being built at Cockatoo Island, Sydney. One of them has already been launched.

Supervising naval architect, Mr. F. H. Dunsford, explained that the "05" would be built by unit fabrication, which started almost a year ago. Although certain of these units are almost finished, the laying of the keel marked commencement of the records of the ship. The vessel is due to be completed in about 15 months' time.

"Yarra", now fitting out, is 370 feet long, with a 41-foot beam. She will be equipped with the most modern anti-submarine detection devices, and armed with twin 4.5 inch guns, two anti-submarine mortar mountings, as well as both single and double torpedo tubes.

★ ★ ★

HISTORIC VOYAGE

For the first time in history, an ocean-going vessel has sailed from the Atlantic Ocean to the city of Quebec, 750 miles inland, during winter-time. The ship involved was the Danish freighter "Helga Dan." This passage of water will be kept open during the winter in future.

WINNS

"THE BIG FRIENDLY STORES"

Courtesy and service give a pleasant glow to Business, and WINNS like to do Business that way. In that spirit they are happy to serve you.

WINNS, Oxford Street, Sydney

& Branches

Cruise to Pacific Battlefield

The first opportunity for Australians to make a direct visit to Guadalcanal, in the Solomon Islands, where one of the great battles of the war in the Pacific was fought from August, 1942, to February, 1943, will be offered in an Orient Line cruise from Sydney next year.

The 28,000-ton Orcades will sail from Sydney on March 9 for a 20 days' 6,700-mile tour of British island territories in the Pacific, calling at Hayman and Green Islands in the Barrier Reef, Fiji and Tonga, and New Zealand's North Island cities of Auckland and Wellington.

At Guadalcanal, Orcades will call at Honiara, near the famous Henderson airfield, where much heavy fighting took place in the latter part of 1942.

Jaycee Flag Presented to "Strathaird"

The Junior Chambers of Commerce of Australia will present a "Jaycee" pennant to the captain of the P. & O. liner "Strathaird". The pennant will be flown at the ship's yardarm in August and September during her next voyage to Australia, when she will be carrying British families as migrants sponsored by the Junior Chambers under the "Bring-out-a-Briton" campaign.

There are 133 Junior Chambers of Commerce in Australia, with a membership approaching 7,000, and practically every Chamber is participating. Already about 100 British families have applied for nomination under the scheme, which will guarantee jobs and accommodation for migrants.

Australian Refinery Capacity Grows

By 1962 the crude oil capacity of Australia's oil refineries is planned to exceed 15 million tons a year, says the Petroleum Information Bureau (Australia). This will represent an increase of 31 per cent. on the current capacity of 11.4 million tons a year. In 1958, Australian refineries processed 89 per cent. of the nation's requirements of petroleum products.

New additions to Australian refineries in the next three years will be a doubling of the present capacity of the Kurnell (N.S.W.) refinery, bringing it up to 4,100,000 tons a year and the erection of a new 1,550,000 tons a year refinery at Hallett's Cove (S.A.), on which construction work is to begin in 1960.

In addition to providing for a greater through-put capacity of crude oil extensions include the construction of more special refinery units at Geelong, Clyde, Kurnell and Hallett's Cove to meet Australia's growing needs for premium grade oil fuels, kerosene and other products.

Deep Sea Trials of Dracone Flexible Barge

Mentioned some time ago, the first deep-sea trials of a "Dracone" flexible barge—a sausage-like floating container for the carriage of bulk liquid cargo such as oil—have been completed in the North Sea. The "Dracone"—of a type with 40 tons capacity—was unwound from a reel on which it had been transported by lorry and filled through a pipe connection as it lay on the water.

After experimental trials, the "Dracone" was towed by an ocean-going tug for Flushing, the 260 nautical mile voyage being completed at an average speed of 6.8 knots. The Tees Towing Company, owners of the deep sea tug, reported that, although the tug experienced a good deal of rough water, there were no serious problems and the tow-rope loading was far less than they had expected for a container of this size. The "Dracone" towed throughout in a perfectly docile manner, without yawing or snatching.

Officials of Imperial Chemical Industries state that transportations of chemical cargoes in these containers appear to be practicable. It should be possible for a normal cargo vessel to take the containers in tow without materially increasing fuel costs, or reducing speed or conventional payload.

FOR SEA CADETS

CARE and MAINTENANCE

AT the end of the summer boating season, all units should have made plans for the cleaning, painting, and repairing of their boats.

The majority of units are probably well versed in the correct procedure, but it is hoped that the following instructions may be of assistance to many units, and, if conscientiously observed, will ensure that their boats give long and faithful service.

General Maintenance:

1. Cleanliness is the first principle in the care of boats and fittings.
2. Tidiness will follow, if cleanliness is observed.

A boat must be cared for as a personal article if you are to be proud of its appearance and subsequent performance.

If conditions permit, the boat should be removed from the water, drain plugs taken out, and the inside and outside of the boat washed by swamping, i.e., with buckets of water. The hull should then be dry swabbed, drain plugs replaced, and the boat placed under cover in a well-aired, but not draughty shed. If the boat is expected to be laid up for any lengthy period, it should be kept wet with a few buckets of water in the bottom.

It is essential that boats should be well chocked to prevent undue strain on any one part of the hull, i.e., should the boat be supported only in the centre, then hogging of the keel will undoubtedly result, whilst if it is only supported at each end, sagging will occur. Great care is essential, therefore, in the chocking, as too much weight on one side can also alter the shape.

The boat must not be subject to sudden draughts, as timber, irrespective of type, absorbs moisture and constant changes of atmosphere tend to cause one side of the boat to expand unequally to the other, causing splitting of the planking.

A WINTER JOB WORTH DOING

Any preservatives which contain linseed oil, or a similar product, will close the grain of the wood and prevent splits occurring in the planking. Rigging and fittings should be kept dry and clean. Rope, if coiled wet and stored, will rot quickly, and fittings if not properly dried will soon rust and deteriorate.

Oars, masts and spars should be stored lying flat on a rack if possible, or alternatively, stowed upwards and not allowed to take up a permanent bend through lack of support.

In all cases, ventilation is most important, "moving air" but not "draught" is the ideal.

Any boat can be well maintained afloat but should be attended to at least once a week, opened out and cleaned, and the outside also washed down.

If regular weekly maintenance is carried out, the possibility of major defects, and thereby heavy financial expenditure, is unlikely to occur, but neglect in all cases can only aggravate the cause and make maintenance irksome and also expensive.

Painting:

Before painting, boats must be thoroughly washed down in fresh water and allowed to dry out. Where the existing paint is chipped or blistered it must be completely removed.

Removal of old paint can be done by either burning off with a blowlamp, rubbing down with glass-paper or pumice, or scraping off with a paint remover. In the latter case the surface must be washed clean with turpentine substitute before any painting is commenced. Similar treatment must be given to paint which is not adhering well to metal fittings; but in this case, removal can be most easily achieved by the use of a wire brush.

All bare wood that is to be painted should be given one coat of a suitable wood primer, and all bare metal a coat of yellow zinc chromate primer,

(Concluded on page 27)

OUR BEST WISHES FOR SMOOTH SAILING TO THE

H.M.A.S. "VAMPIRE"

FROM

TAUBMANS MARINE DIVISION

Contractors to the Royal Australian Navy
For all Underwater Paints and Compositions
Including the Grey Mercurial Compositions
And the New

VINYL ANTI-FOULING PAINTS

All Taubmans Marine Paints are available through

THE RED HAND COMPOSITIONS CO. AUSTRALIA PTY. LTD.

No. 2, CIRCULAR QUAY EAST, SYDNEY Telephones: BU 6681, BU 6682

JOIN THE NAVY LEAGUE

The object of the Navy League in Australia, like its older counterpart, the Navy League in Britain, is to insist by all means at its disposal upon the vital importance of Sea Power to the British Commonwealth of Nations. The League sponsors the Australian Sea Cadet Corps by giving technical sea training to and instilling naval training in boys who intend to serve in Naval or Merchant services and also to those sea-minded boys who do not intend to follow a sea career, but who, given this knowledge, will form a valuable Reserve for the Naval Service.

The League consists of Fellows (Annual or Life) and Associates.

All British subjects who signify approval to the objects of the League are eligible.

MAY WE ASK YOU TO JOIN and swell our members so that the Navy League in Australia may be widely known and exercise an important influence in the life of the Australian Nation?

For particulars, contact The Secretary, 83 Pitt Street, Sydney, N.S.W.
or The Secretary, 443 Little Collins Street, Melbourne, C.1, Victoria

or one of the Hon. Secretaries at:
- Box 376E, G.P.O., Brisbane, Queensland
- 726 Sandy Bay Rd., Lower Sandy Bay, Hobart
- P.O. Box 90, Darwin, N.T.
- 30 Pirie Street, Adelaide, S.A.
- 62 Blencowe St., West Leederville, W.A.
- 60 Limestone Ave., Ainslie, Canberra, A.C.T.

CARE AND MAINTENANCE

(from page 25)

followed by one undercoat and one or two coats of weather-work paint.

Above the waterline, the exterior woodwork should be given one coat of wood primer, followed by one undercoat and one or two coats of weather-work paint. An overnight dry must be allowed between each coat, and certainly before the boat is brought into use.

Below the waterline, there are two processes that can be used. In the first case, when fouling is occurring, the exterior woodwork can be given two coats of some good marine paint, allowing six hours drying time between coats, followed by one coat of anti-fouling composition.

In the second case, it can be given two full coats of black bituminous composition.

The drying time is four to six hours between coats. Of these two processes, the second is considerably cheaper and can be fully recommended. It also gives first-class resistance in making the boat watertight.

The boat should be placed in the water a few hours after anti-fouling has been completed and not allowed to remain on dry land for long periods.

The interior woodwork should be treated in exactly the same way as the exterior woodwork above the waterline. This process can also be used under the bottom boards, but it is suggested that where softening of the timbers occurs, and in order to improve the watertightness, two full coats of black bituminous composition be used.

It is essential that before painting with bitumastic, all old paint should be removed, and that the bare wood is first treated with some solution such as clear cuprinol.

Oars, masts, spars, etc., should be well washed down and given one or two coats of seaplane varnish. About six to eight hours should be allowed between the application of each coat.

The secret of good painting depends on the time and energy that is put into the preparation, and whilst the stripping and/or rubbing down may prove tedious, by carrying out this part of the work conscientiously, units will find that the final painting will produce a better and more lasting result.

(From "The Navy")

NOTES from Here and There

U.S.A.

THERE is a lot of heartburning in the U.S. Navy at the news that "The Back-bone of the Navy" may be scrapped. Traditionally the back-bone of the Navy are the Warant Officers who at present number some 5,000.

Two factors are militating against the continued existence of Warrant Officers. One is the creation of super chief petty officers whose work and authority are now almost identical with those of Warrant Officers. The other is the lack of strength of the Limited Duty Officers who have been promoted from enlisted men.

There is a movement afoot at the highest levels to abolish Warrant Officer rank and to translate existing Warrant Officers either to Limited Duty Officers (similar to the British Special Duties List) with commissioned rank, or to super chief petty officer status while retaining their former rate of pay.

It looks as if the Americans are going to take a leaf out of the British Book. Warrant Officers in the Royal Navy were abolished some years ago.

FRANCE

THE Israeli destroyers "Jaffa" (or "Yaffo"), ex-H.M.S. "Zealous" and "Eilath", ex-H.M.S. "Zodiac", with the patrol craft "Nogah", have joined the French Fleet in Toulon.

The Czech cargo-boat "Lidice" carrying 580 tons of arms and ammunition, was brought into Oran by a French naval patrol in April. The ship's papers showed that she was bound for Vietnam; but once at sea she received orders to make for Casablanca, which does not look like the shortest course to Asia.

At a recent SEATO conference in New Zealand, Vice Admiral Ortoli of France is reported to have stated that France would develop her naval base in New Caledonia. Noumea already has a naval base and airfield with Wellington bombers, a frigate, a sloop and two mine sweepers.

★ ★ ★

CANADA

THE "Tribal" class destroyer, H.M.C.S. "Micmac" was commissioned at Halifax on 10th March. She was the first destroyer built in Canada, at Halifax Shipyards, and she entered service in September, 1945.

★ ★ ★

H.M.C.S. "Kootenay" Commissioned

HER Majesty's Canadian Ship "Kootenay" was commissioned at Vancouver on 7th March, as the fourth of the "Restigouche" class destroyer escorts and the first of this class to be completed on the West Coast.

The "Kootenay" was laid down at the Burrard Dry Dock Company's North Vancouver shipyard on 21st August, 1952 and was launched on 15th June 1954.

BEST WISHES
TO
H.M.A.S.
"VAMPIRE"
and Personnel
from
WILMOR
PTY. LTD.
1220 BOTANY ROAD
BOTANY, N.S.W.
Telephone: MU 9515

BEST WISHES
TO
H.M.A.S.
"VAMPIRE"
FROM
INDUSTRIAL STEELS LTD.
Railway Parade
Lidcombe, N.S.W.
Tel.: YX 7425

The Economics of PRESENT DAY SHIPPING

MR. Charles W. Aston, the General Manager of the P. & O. Company responsible for financial matters, recently visited Australia studying conditions out here and endeavouring to assess Australian public opinion on a number of economic matters.

In an endeavour to make clearer some of these problems, Mr. Aston gives below a brief outline on shipping economics.

When a man loses his job or finds that his income is reduced, one of his first thoughts is how he can retrench. How can he reduce his current expenditure so as to keep out of the red, and how can he pay for the refrigerator, the washing machine, the T.V. and the motor car that he has bought on the hire purchase system?

Exactly the same problem faces shipping companies the world over, and in England in particular, to-day.

Eight per cent. of the world's shipping is laid up through lack of employment. In the case of the U.K. fleet 6.3 per cent. is laid up. The ships that are still running are suffering from a shortage of cargo and a reduction in earnings.

Owners of cargo liners serving Australia, such as P. & O. and other well-known companies, are not immune from the slump that has overtaken shipping. Contrary to what may be supposed, they do not operate under a cost-plus arangement. Although there is a formula that is used to ascertain the facts before shippers and shipowners begin to negotiate adjustments to rates of freight for wool, meat, fruit and a variety of other Australian products, shipowners are not guaranteed any particular rate of profit, or, indeed, any profit at all. Negotiations in 1956 resulted in shipowners accepting lower rates than would have been justified by the formula; in 1957 a small increase was justified but was waived—so much for guaranteed profits.

Reduced earnings combined with shortages of various types of cargo in different parts of the world have brought about a state of affairs in which many ships on the high seas to-day do no more than cover their out-of-pocket running expenses, without any margin to cover depreciation and interest. There is little scope in ship management for drastic economies in running expenses; upkeep, which is one of the big items of expense, cannot be allowed to fall into arrears without lowering the standard at sea; crew wages and fuel consumption, two other large items, give little latitude for effecting economies, while loading and discharging expenses are largely beyond the control of the shipowners.

Here is clearly a case for the shipowner to watch expenditure closely and cut out everything that is unnecessary. Yet if a fleet of cargo ships is to be kept up to a state of maximum efficiency there must be a policy of regular scrapping of old ships and their replacement by new ones. The owner of a motor car will readily appreciate this. But whereas one can go to a dealer and buy a new car at will, to buy a new cargo ship is something that has to be planned several years ahead.

If the ship is to take its place in a fleet of modern cargo liners, it will have to be specially designed for the particular purposes of the trade for which it is intended. When the details are decided, construction cannot be started until a slip-way is available. If there is a brisk demand for new ships (as there has been ever since the end of the war) it may be two or three years before a vacant slip-way becomes available and then the construction of the ship will occupy at least twelve months or perhaps two years, according to its size and complexity.

So from the time when a new ship is first planned until the time it is delivered, there may be a lapse of four or five years. In the meantime, the state of the freight market may radically alter as it has done in the last twelve months.

Very rarely does he have in hand the whole of the money that is required to pay for a ship before he signs the building contract. A glance at recent published figures of a representative selection of British shipping companies will show that not one of them had sufficient free cash in hand to meet its building commitments, and, of course, building contracts like any other form of contract can only be cancelled on payment of a penalty.

Payment for a ship will usually be spread over the building period, in five instalments, the first being payable when the keel is laid, the timing of the other instalments being determined by the progress made by the shipbuilders. It is normal practice to rely in part at least upon receiving income from existing ships to help in paying for a new ship under construction.

It is true that a shipowner may be able to borrow in the capital market in order to make good the deficiency in his resources. But the present rate of interest payable on such loans would be at least 6 per cent. per annum and who, amongst shipowners, is going to borrow at 6 per cent. unless he can see the ship earning at least that rate of return when she is in the water?

Freights will have to improve a great deal before voyages begin to show profits again. There is not very much that individual shipowners can do to improve matters. By laying up, they reduce the number of ships that are competing in the world markets for available cargoes. But the first to benefit from any resulting rise in freights will be the owners who have kept their ships running. Owners of cargo liners are obliged in any event to continue to serve their established trades and place their services at the disposal of shippers. One of Conference system is that the fundamental benefits of the ships sail in bad times as well as in good, even to the extent of sailing when the voyage can only result in a loss.

So there is the problem facing the shipowner who has ordered a new ship. If work has not yet begun on the construction of the ship and he takes a pessimistic view of the future of rates of freight he may decide to cut his loss, cancel the contract and pay a penalty for so doing.

If the ship is already under construction and is of tramp type intended for general trading, he might be able to sell her on the stocks (but at a loss), and a certain number of such ships, brand new, have been offered for sale in recent months at reductions of as much as 30 per cent. below the building cost.

If the ship is a cargo liner designed for a particular trade she may be almost unsaleable, and the shipowner has no alternative but to hold on, keep his fingers crossed and hope that when he has to employ the ship in the water he will be able to cover his running expenses for the next year or two until the tide turns.

—From "The Maritime Journal"

T.V. "ROMA" T.V. "SYDNEY"
FAST LUXURIOUS LINERS
Superior Service — Monthly Sailings
flotta **LAURO**
OFF-SEASON REDUCED FARES
Calling at Singapore, Colombo, Port Said, Naples, Genoa — Through Bookings to London, New York, etc.
Apply to
LUIGI GARIGLIO & CO., 19 BRIDGE STREET, SYDNEY
or
JAMES PATRICK & CO. PTY. LTD., MELBOURNE, SYDNEY, BRISBANE

BABCOCK BOILERS

. . . are used in 900 POST-WAR MERCHANT VESSELS and for over three-quarters of the British post-war naval programme.

BABCOCK & WILCOX OF AUSTRALIA PTY. LTD. HEAD OFFICE & WORKS: REGENTS PARK, N.S.W.

Best Wishes to H.M.A.S. "Vampire"

from

KEPPIE MACMAHON PTY. LTD.

Composition Floor Layers

37 ALFRED STREET, ROZELLE, SYDNEY

Telephone: WB 2465

Congratulations

to COCKATOO DOCK and ENGINEERING CO. PTY. LTD.

on a job well done in building & fitting out

H.M.A.S. "VAMPIRE"

Good Luck to all who sail in her

AUSTRALIAN ALUMINIUM CO. LTD.

THE RECORD GROWS

By "Atticus"

The Service has been fortunate in its historians. Both Arthur W. Jose and G. Hermon Gill have dealt in a distinguished manner with the story of the Royal Australian Navy. Although their work is separated by nearly forty years, the books of both these authors should be read together, because the tale they tell has a prevailing patten.

The development of the R.A.N. falls neatly into sections. From the line-of-battle ship to a battle-cruiser covers a period in naval history as revolutionary in thought and technical achievement, as is likely to be seen in the coming nuclear age. Sail gave way to steam, electronics introduced a wider field, yet none of these things altered the basic principles of sea power. As Thermistocles said, "he who commands the sea has command of everything," and the how and why of it are incidental.

In the days of sail a shipmaster was his own master, until the claims of Empire led to sea lanes running between dockyards or coaling stations. As briefly described by Jose in his "History of the R.A.N. (1914-18)", the way in which an Australian navy emerges from the colonial commitments of the Royal Navy has all the fascination of a boy's adventure book. It's a heartening story, too, for the idea was never forced upon Australia. Local opinion demanded a navy, and in the end achieved one.

The expansion of German interests in the Pacific led as it was bound to do, to that bright, clear October morning in 1913, when, as Jose puts it, the battle-cruiser "Australia" passed through Port Jackson Heads. "Within a year," he continues, "she passed out again to capture German colonies and drive a German squadron from the Western Pacific."

It's a grand tale, still remembered as "a short spectacular period when ships of the R.A.N. acted together or under a single command." Then as now, Australia's sea communications were of vital concern, and the elusive Von Spee and his German-China Squadron remained a threat until brought to action and destroyed in the Falkland Islands. That too was inevitable. We had command of the seas.

It is at this stage that G. Hermon Gill, the official Naval Historian of the Second World War, takes over the record. Fully documented and extremely well written, his account begins with a chapter summarising those troubled years, when an Empire wearied to the verge of exhaustion tried to preserve itself with words alone. One might be reading about the present day.

In the fog of indecision that hung about the League of Nations, public opinion in Australia boxed the compass. It is the more surprising therefore to find that the country still persisted in a naval programme, which, both in ships and men, provided a solid foundation on which to build when events in 1939 called for rapid expansion. Moreover, officers graduated from the Naval College had by that time reached a stage in seniority, that gave to the R.A.N. the character which the people of Australia had always wanted.

There was no enemy at hand as there had been in 1914. There was none of that "short, spectacular period" that Jose spoke about. But the pattern remained the same. Australia's naval units did what they had done before; assumed the place required of them in the Royal Navy, and on account of a close association in times of peace, did so in such a way that in the next couple of years, a cap tally required careful scrutiny to pick out the letters "H.M.A.S.".

Gill's work is as wide in scope as the war itself. The heroic days of the Tobruk Ferry Service, of Crete and Calabria and the high spot of "Sydney's" engagement with "Bartolomeo Colleoni", are woven into the long dull days that everybody knew. The rhythm of events leads on to Singapore, and a shorter focus that centres upon the arc of islands that became Australia's front line.

Step by step the record grows. With the decline of Germany, Australian ships and personnel return to clinch the matter on their home ground, and with them comes a reciprocal movement of British naval units. If not exactly ruling the waves, Britannia still continued to ride them with accustomed ease.

As always happens, those with knowledge of the subject approach war histories from the angle of their own experience. The historian cannot afford that luxury. He must unravel what is often contradictory evidence, and sift it time and time again. It is a lengthy business requiring research in naval archives all over the world.

Hermon Gill began his two-volume task in 1946, and, with one volume published, is about one-third of the way through the second one.

Together they will complete a story of interest to all readers of "The Navy".

LATEST FROM CHILE

TWO very fine destroyers of substantial size and comprehensive armament are being completed for the Chilean Navy in Great Britain. Both ships were built and engined by Vickers-Armstrongs, Ltd.

The two new ships are the "Almirante Williams" and the "Almirante Riveros" which have a standard displacement of 2,730 tons and a full load displacement of 3,300 tons with an overall length of 402 feet, a beam of 43 feet and a maximum draught of 13 feet 4 inches. Their armament consists of four 4-inch automatic guns in single mountings, six 40 mm. anti-aircraft guns, five 21 inch torpedo tubes in a quintuple set, and two triple-barrelled anti-submarine depth charge mortars of the "Squid" type.

The layout and general arrangement of the ships are rather conventional with two funnels, and the main armament disposed two guns forward and two aft. The 4-inch have a range of 12,500 yards, or over seven miles, and an elevation of 75 degrees.

Best wishes to H.M.A.S. "Vampire"

INGOT METALS LTD.

6 HUNTLEY STREET, ALEXANDRIA

Telephone: MX 3471

CONTRACTORS TO ROYAL AUSTRALIAN NAVY

THE WORK GOES ON

Opened on July 1, 1957, the "IGY" is officially over. But after eighteen months of unprecedented scientific explorations on an international scale, tens of thousands of documents will have to be analyzed and classified and many of the 4000 principal geophysical stations will pursue their observations. There is still so much to be done. And since the scientific co-operation during the last 18 months has proved so profitable it will continue during this year, not as a "year" but under the designation "International Geophysical Co-operation 1959."

The aim of the IGY had been to record what is going on in our planet and its atmosphere. It had been chosen because this particular period of 1957/58 was one of maximum solar activity. Its results are extremely valuable though they may not, with the exception of artificial satellites and space-travel, seem spectacular.

Popular imagination has been stimulated by the launching of artificial moons during the IGY, and even more so by the first man-made missile sent out into space beyond terrestrial attraction. This latter event took place, in fact, right after the IGY had officially ended, but the difference of a few days is irrelevant.

What is more important is the practical result that may be achieved in interplanetary travel. The oceanographers have found out that life exists in the deepest oceans, even beneath the sea bed, and that currents circulate on the floor of the oceans. This may be important for the solution of the problem of dumping atomic waste material. Such waste from industrial reactors is being dropped into calm waters of the Seven Seas. But if these waters are not so calm as they were thought to be, it may prove useful to jettison the dangerous atomic waste into outer space. If it is possible to send missiles into the solar system, why not load them with atomic waste and thus get rid of it?

One of the main objects of the IGY was to gain better knowledge of the structure of the Antarctic, its influence on climate and weather. It can now be assumed that Antarctica is not just a "continent," a single land mass, but a complex of island and mountain chains, since it seems to be lower in some places than the level of the seas. Another fact is that its glaciers are slowly melting. (So are the glaciers of Scandinavia). Observation discloses that Scandinavia is rising at a rate of about a centimetre a year, while the territory of The Netherlands is sinking at the same rate.

A vast mineral-rich region has been discovered in the Pacific, with millions of square miles laden with manganese, iron, cobalt and copper. An intense band of radiation, increasing in intensity with altitude, was discovered at a height of 250 miles. On the other hand, a British scientist formulated a theory according to which the terrestrial atmosphere extends to an altitude of about 112,000 miles — that is, about half the distance from the earth to the moon. He believes that the sun's atmosphere extends to the earth and encompasses the whole of the solar system. But it can be assumed that gases, if they do exist at such distances, have merely an atomic form, which means that there are only atoms far apart from one another.

It may be many years before the data already obtained during the IGY will have yielded all their hidden meaning. Research goes on. But beyond its scientific results the IGY has already achieved something whose importance cannot be rated too highly: international co-operation among 66 nations. In this respect, the IGY has been a "happy year."

(From "World Veteran")

"VULCATEX" Caulking Compound
"HORNEX" Rubber Concrete
"HOLZON" Pigmented Rubber Paint
"ADFAST" Rubber Adhesive
"RUBBATEX" Plastic Rubber Underlay

Sponsored by

FORBES, RANKEN & SONS PTY. LIMITED

24 BOND STREET, SYDNEY, N.S.W.

'Phones: BU 3461-2, BU 3807

"The Lady and the Deep Blue Sea". By Garland Roark. (Hodder & Stoughton). Aust. price, 18/9.

FOR the captain of a full-rigged ship to keep a wife at his elbow to comfort and advise him and make just the right suggestions at the right time all sounds a little larger than life, until it is remembered that, as late as 1948, the skipper of the four-masted barque "Pamir had his wife on board when the ship's time from Wellington (N.Z.) to tide-water in the river Thames was eighty days five hours. But the lady in Garland Roark's yarn sailed with her husband in the 'fifties, when clipper ships were ocean greyhounds whose sailing times became legends. Jenny was the red-headed wife of Philip Broadwinder, skipper of the "Calcutta Eagle"; a man known in every port as the "Prince of Sea Captains". Some said that luck rode with him. But Jenny knew that luck was not the name for it, and this becomes more and more apparent as the "Eagle" and the "Emperor" spread their towering canvas during a race from Melbourne to Boston around the Horn. A book worth reading.—B.H.

* * *

"We Joined the Navy". By John Winton. (Michael Joseph). Aust. price, 17/-.

IF anyone has wondered why he joined the Navy, here are the answers; all of them. "An intelligent man never makes a good naval officer. He embarrasses everyone". Thus spoke the Admiral presiding at the Admiralty Interview Board. One may take his word for it and salute Lieutenant Commander Robert Bollinger Badger (known as the "Artful Bodger"), whose air of detachment and splendid war record are somewhat overlaid by an inability to say the right things to the right people at the right time. What he does say, however, is both apt and witty and well calculated to put the feet of the shower of cadets who arrive at Dartmouth firmly upon the slippery path that leads to brassbound splendour. For Dartmouth read anywhere the Navy trains its young. It's not necessary to be a "College" man to appreciate John Winton's first book; the funniest one to come our way for a long time.—B.H.

* * *

"February Dark". By Anne von Bertouch. (Constable). Aust. price, 22/6.

"Lantana Lane". By Eleanor Dark. (Collins). Aust. price, 18/9.

THESE two books have a lot in common. In "February Dark" two young school teachers, Peter and Helen Rokeby, decide to retire from the world of class-room competition and stage their own contest with Nature and Lake Bambulini, somewhere north of Sydney (N.S.W.). It's "On Our Selection" on balloon tyres; the place, the people and particularly the prawns suggest a film for everything about them is a trifle zany. They are an off-beat, amusing community, who only seem to come to life when the moon is full. That's when the prawns run, and the description of how they do so provides an exciting climax to a perceptive and charming bit of writing.

Substitute pineapples for prawns and place the scene a couple of hundred miles further north, and Eleanor Dark's setting amongst the lantanas not far from the Queensland coast, concerns people who work their pineapple plots along the blind bush road that is Lantana Lane. Intent on finding something they had missed elsewhere, they do what everybody thinks of doing at times, and how they fit in with the locals and what effect these new experiences have upon themselves and their neighbours is the day to day chronicle of an assortment of characters, ranging from a French woman to the kind of mother-of-all-living type who makes the world go round. It just depends whether you prefer pineapples or prawns.—B.H.

NUTTALL

"DEPENDABLE AND TRUE"

ALL GEARED

CENTRE LATHES

PRECISION • ACCURACY

for

MAINTENANCE AND PRODUCTION

DISTRIBUTORS:

MODERN TOOLS PTY. LTD.

414 BOTANY ROAD

ALEXANDRIA, N.S.W.

MX 4327

ATLANTIC STORY

"Empire of the North Atlantic". By Gerald S. Graham. (Oxford University Press).

PROFESSOR Graham's study of rivalry and expansion in the maritime history of the North Atlantic is too well known among historians to need more than a reminder that the book is now available again in a second edition.

To those students of sea power who have not yet made the acquaintance of this book, this is the chance to fill an obvious gap. Professor Graham is a recognised authority on this subject, and anything from his pen warrants attention and study. But this, of course, is a major work, written with an interpretative skill which commands the admiration of every reader. It is a tribute to the author's scholarship and historical judgment that this second edition needed no more than a very few minor corrections, and a measure of the book's worth that much critical reading since its first publication leaves it substantially unaltered.—R.C.T.

★ ★ ★

SURPRISE ATTACK

"By Sea and By Stealth". By Burke Wilkinson. (Peter Davies).

COMMANDER Burke Wilkinson, U.S.N., has collected some examples of surprise attack by unconventional weapons, and has described them in his new book. By unconventioned weapons are meant midget submarines, chariots, limpet mines, and the like. In a second, and perhaps less satisfactory, part of the book he describes surprise attacks by other means, such as Prien's penetration of Scapa Flow in 1939, and the German naval assault on Oslo in 1940. In this category of surprise attack, there are perhaps more noteworthy examples where the lesson can be more forcefully pointed.

That such a book is worthy of study is obvious, for we can only learn new techniques of attack and new methods of defence from our study of the past. And although Commander Wilkinson has little that is new to tell about the various operations which he describes, he has the knack of keeping the reader's interest high and consequently of making these episodes memorable examples of the lessons he wants to preach. His book can, therefore, be warmly welcomed on two counts, that of the normal interest and excitement which always pertains to deeds of great daring, and also the need of constant preparedness against surprise attacks of this nature, always so difficult to foresee and to counter.—J.H.R.

Best wishes to
H.M.A.S. "VAMPIRE"
from
CEMAC PTY. LTD.
695 GARDENERS ROAD, MASCOT, N.S.W.
Tel.: MU 3696
Manufacturers and Distributors of "Permanised Seaply"
Suppliers of Fireproof and Rotproof Seaply to Royal Australian Navy

CONGRATULATIONS TO ALL CONCERNED ON THE COMPLETION OF H.M.A.S. "VAMPIRE"

During the construction of H.M.A.S. "Vampire," J. Pierre Couve & Co. Pty. Ltd. were proud to suppy Flexible metal tubing.

This Flexible metal tubing of many different types has been perfected for innumerable uses, including conveyance of steam, oil, water, tar, gas, chemicals, etc., for use as exhaust pipes, covering of electric cables, for reading lamps, vacuum cleaners, and so many other applications.

CONNECTIONS for the above are another special line, all types being available.

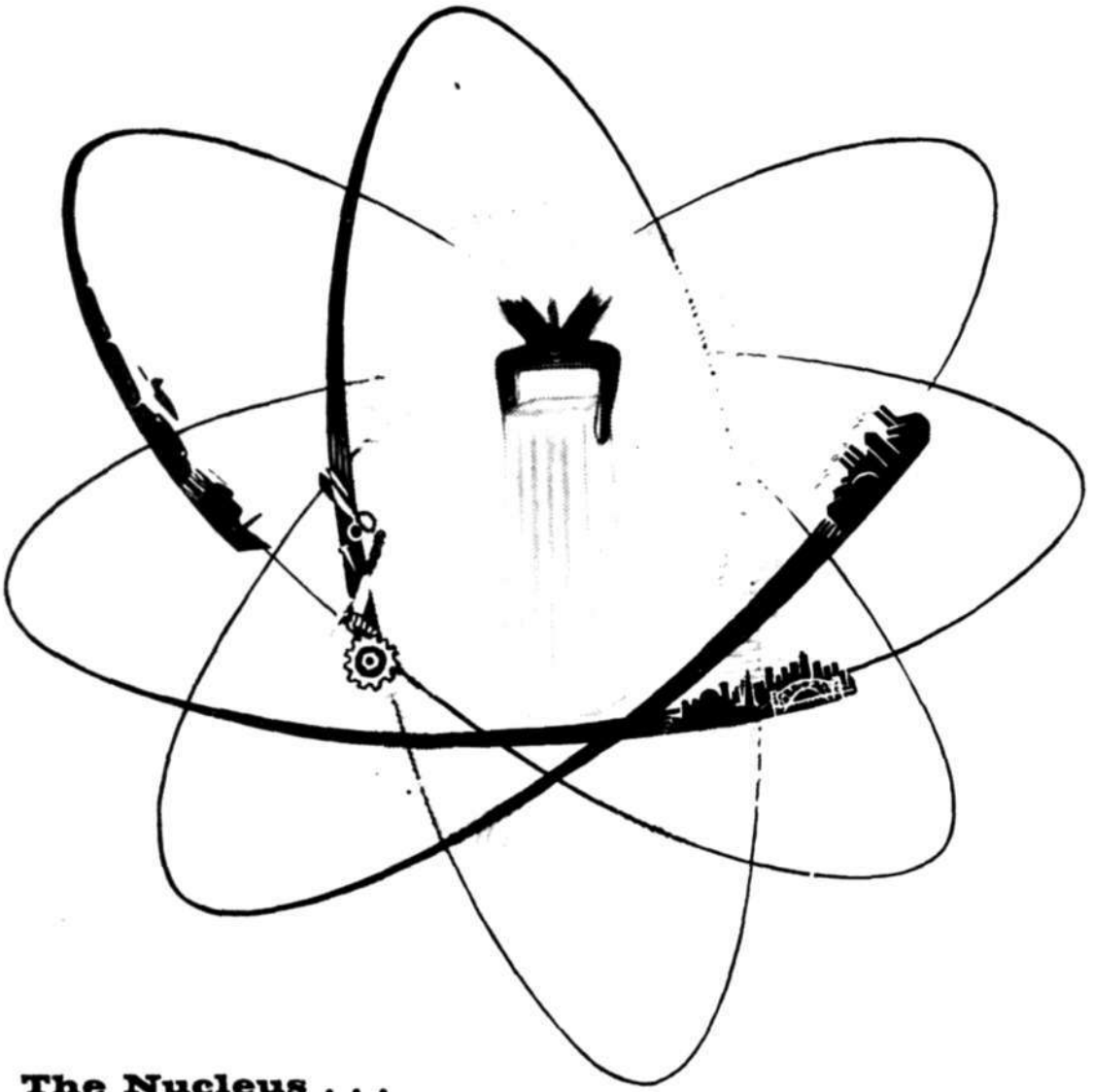
FLEXIBLE SHAFTING for rotary driving, both inner core and outer case.

J. P. COUVE & CO. PTY. LTD. 40 Cook Rd., Marrickville N.S.W. 'Phone: LM 8662

Best Wishes to
H.M.A.S. "VAMPIRE" and PERSONNEL
FROM
BEARING SERVICE CO. OF AUSTRALIA PROPRIETARY LIMITED
SYDNEY — MELBOURNE — BRISBANE — ADELAIDE — PERTH — TOWNSVILLE — TOOWOOMBA — IPSWICH — LISMORE — WOLLONGONG AND BUNBURY
CONTRACTORS TO ROYAL AUSTRALIAN NAVY

BEST WISHES TO H.M.A.S. "VAMPIRE" and Personnel
FROM
STEWART & LLOYDS (Distributors) Proprietary Ltd.
SHELL HOUSE
CARRINGTON STREET, SYDNEY
Tel.: BX 2407
Suppliers to Royal Australian Navy
Distributors of: Steel Tubes and Fittings — Malleable Fittings — Saunders Valves — Ermeto High Pressure Valves and Fittings — Copper Tubing — Electrodes and Welding Machines — Bolts and Nuts — all types of Steel Sections — Plastic Pipes — B.T.M. Tubing

BEST WISHES TO H.M.A.S. "VAMPIRE"
JOHN WHILE & SONS PTY. LTD.
SPRING MAKERS
65 CRYSTAL STREET, SYDNEY
Telephone: LM 6331



The Nucleus . . .

At the core of our complex industrial structure is steel, the most useful metal in the world.

Steel provides the basic raw material of our modern living, for it is well nigh impossible to think of any product or service which does not require steel in some way . . . our buildings . . . machines . . . ships . . . the thousands of everyday products we take for granted, evolve from the steel ingot

Australia is fortunate in having a highly efficient steel industry; by supplying steel to the nation at reasonable prices it is playing an important part in our national development, and through its vigorous expansion programme, will continue to serve our surging, national progress.

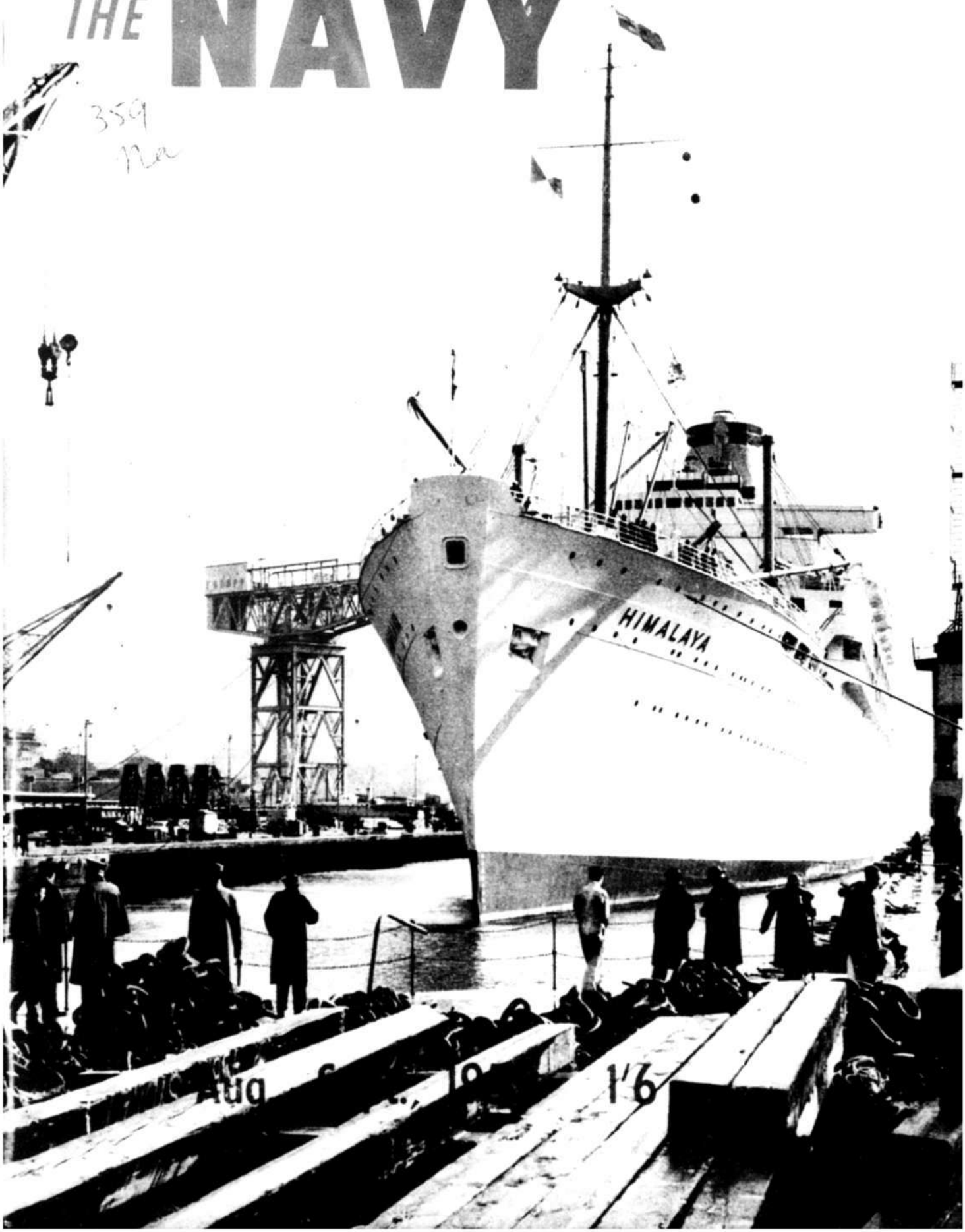
THE AUSTRALIAN
STEEL INDUSTRY

THE BROKEN HILL PROPRIETARY CO. LTD., AND SUBSIDIARIES

Printed by Shipping Newspapers Ltd., 16 Bond Street, Sydney

THE NAVY

359
Nav



NATIONAL INSTRUMENT COMPANY PTY. LTD.

FOR SPERRY GYRO COMPASS AND SPERRY MARINE RADAR SALES AND SERVICE—*TELEPHONE*

390 FLINDERS STREET, MELBOURNE — MB 5281
MELBOURNE AIRPORT, ESSENDON — FX 1528

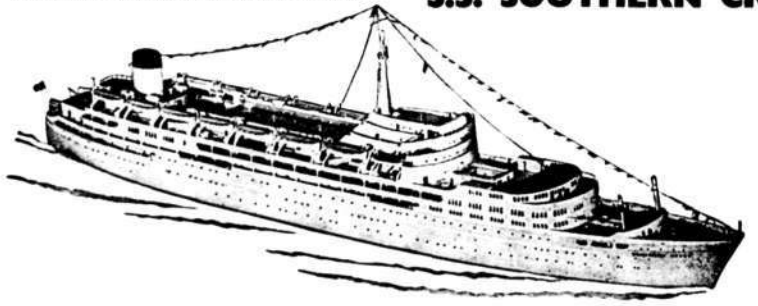
Sydney - - - - - B 0229
Brisbane - - - MW 2068
Adelaide - - - - W 4840
Perth - - - - - - 21-3728

NC9 59

SALES AND SERVICING AGENTS FOR SPERRY MARINE GYRO COMPASSES AND SPERRY RADAR

TO ENGLAND *VIA* PANAMA *OR* SOUTH AFRICA

aboard the 20,000 tons all Tourist Class liner **S.S. SOUTHERN CROSS**



Emphasises the modern trend in travel with the latest in amenities.

TRAVEL SHAW SAVILL

THE NAVY

Vol. 22 AUGUST-SEPTEMBER Nos. 8-9

CONTENTS

Published by The Navy League of Australia.

N.S.W.: 83 Pitt St., Sydney VICTORIA: 443 Little Collins St., Melbourne.
ADVERTISING: Sydney—61 8784; Melbourne—MU 3123.
SUBSCRIPTION RATE: 12 issues post free in the British Commonwealth, 20/-.

Copies of "Herald" photographs published may be obtained direct from Photo Sales, "Sydney Morning Herald," Hunter Street, Sydney.

SUBSCRIPTION FORM

To "The Navy"
Box 4819, G.P.O.
Sydney, N.S.W.

I enclose 20/- (postal note, money order or cheque) for 12 issues of "The Navy," post free, commencing from

(Please add exchange where applicable)

Name .....

Street .....

City ..... State .....

Date .....

Always ask for . . .

SHELLEY'S FAMOUS DRINKS

Obtainable from leading shops and saloons

CORDIAL FACTORY

SHELLEY & SONS

PTY. LTD.
MURRAY STREET
MARRICKVILLE
N.S.W.
'Phone: LA 5461

Cockatoo Docks & Engineering
CO. PTY. LTD.
•
Shipbuilders, Marine and General Engineers.
Contractors to H.M. AUSTRALIAN NAVY
•
Inquiries Invited
Phone: WB1941 (10 lines)

DRIBARM
COMPRESSED YEAST-VACUUM PACKED

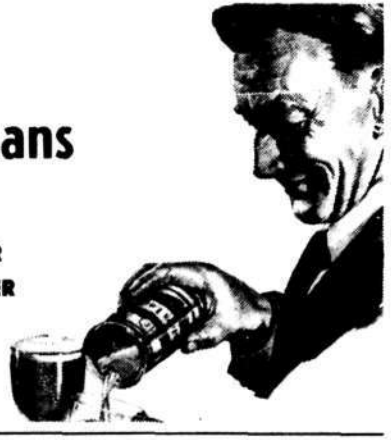
"Dribarm" is a special form of Compressed Yeast, dried under scientific conditions and carefully compounded with a suitable yeast food. Specially suitable when not accessible to, or supplied by, bakers.

Obtainable from: Merchants, Stores, Grocers, or direct from the Proprietors:

MAURI BROTHERS & THOMSON LIMITED
The Compressed Yeast Co.
BOX 31, P.O., WATERLOO, N.S.W.

beer in handy cans

FOSTER'S LAGER
VICTORIA BITTER



THE NAVY LEAGUE OF AUSTRALIA

PATRON:
His Excellency The Governor-General.

FEDERAL COUNCIL:
President: Rear Admiral H. A. Showers, C.B.E. (Retd.).
Deputy President: Cdr. R. A. Nettleford, D.S.C., V.R.D., R.A.N.R.
Secretary: *Comdr. R. P. Middleton, O.B.E.*

New South Wales Division:
Patron: His Excellency The Governor of New South Wales.
President: Rear Admiral H. A Showers, C.B.E.
Secretary: Comdr. R. P. Middleton, O.B.E.
Hon. Treasurer: F. E. Trigg, Esq.

Victorian Division:
Patron: His Excellency the Governor of Victoria.
President: Lieut.-Comdr. A. N. Boulton, R.A.N.R.
Secretary: H. E. Touzel, 443 Little Collins Street, Melbourne.

South Australian Division:
Patron: His Excellency The Governor of South Australia.
President: Surgeon-Comdr. R. F. Matters (Retd.).
Hon. Sec.: R. Sutton, Esq., 30 Pirie Street, Adelaide.

Tasmanian Division:
Patron: Vice Admiral Sir Guy Wyatt, K.B.E., C.B., R.N. (Retd.).
President: *W. E. C. Hodgman, Q.C., M.H.A.*
Hon. Sec.: Comdr. G. E. W. W. Bayly, O.B.E., V.R.D., R.A.N.V.R. (Retd.), 726 Sandy Bay Road, Lower Sandy Bay, Hobart.

Western Australian Division:
Patron: His Excellency The Governor of Western Australia.
President: D. W. Brisbane, Esq., C.B.E.
Hon. Sec. - Hon. Treas.: K. Olson, Esq., 62 Blencowe Street, West Leederville, W.A.

Queensland Division:
Patron: His Excellency The Governor of Queensland.
President: Comdr. N. S. Pixley, M.B.E., V.R.D., R.A.N.R. (Retd.), Ryan House, Eagle Street, Brisbane.
Hon. Sec.: G. B. O'Neill, Esq., Box 376E., G.P.O., Brisbane.

Australian Capital Territory Division:
President: His Excellency, G. E. L. Alderton, C.M.G. (High Commissioner for New Zealand).
Hon. Sec.: Lieut. D. M. Blake, R.A.N.V.R., 60 Limestone Avenue, Ainslie, A.C.T. 'Phone: J 3237.

Northern Territory Division:
Patron: His Honour the Administrator, J. C. Archer, Esq., O.B.E.
President: Captain S. H. K. Spurgeon, D.S.O., O.B.E., R.A.N. (E/L).
Hon. Sec.: Miss G. Gordon.

AUSTRALIAN SEA CADET COUNCIL:
Representatives of the Naval Board:
Director of Naval Reserves, Capt. G. D. Tancred, D.S.C.
Comdr. H. L. Gunn, O.B.E., D.S.C.
Representatives of The Navy League:
Comdr. R. A. Nettlefold, D.S.C., V.R.D., R.A.N.V.R.
L. G. Pearson, Esq.: L. Forsythe, Esq.
Lieut.-Comdr. P. G. Evans, R.A.N.V.R.
Hon. Sec.: Comdr. R. P. Middleton, O.B.E.

MANNING THE FLEET

A Problem in Quantity and Quality

By REAR ADMIRAL W. H. HARRINGTON, C.B.E., D.S.C.
Second Naval Member of the Commonwealth Naval Board

LIBRARY
6 SEP 59

THE essence of this problem is to provide at the right time the correct number of officers and ratings trained to skills appropriate to the requirements of the Fleet and shore establishments, where more men are trained to man ships.

Under present conditions we need something of the order of ten years' notice to make radical changes in the officer structure and of the order of five years for changes in the rating structure. Therefore, the size and composition of the Fleet must be known years ahead if the personnel authorities are to be able to meet the commitment. Furthermore, if the officers and men are to be appropriately trained, the skills which they will need must be predicted and instructional facilities provided accordingly.

Given the above factors, i.e., the number and type of ships and therefore the number of officers and men of each branch, together with a statement of the knowledge required to be imparted to each branch, we have the size and shape of the problem. There are, of course, many complementary aspects. For instance, if the officers and ratings are career men the continuing requirement for training is smaller than if they serve for short periods only, and, if they bring with them on joining a sound basic education, the task is reduced.

In an over-simplified approach we might say that officers need to know the capabilities of their equipment, why it works and, as far as possible, how it works. In the case of ratings, the need is for them to know how the equipment works and as far as possible why it works. Ideally, it would be desirable for everyone to know all about the equipment, but the training to meet such a requirement would be so expensive as to make such an aspiration impracticable. At this stage, therefore, it is convenient to begin to deal *separately with the training of* officers and the training of ratings.

The officer entry for the Royal Australian Navy is made in an age group between 14½ years and 19 years. There is also provision for young men up to the age of about 30 who are already at a University to enter as technical officers in their own professions, e.g., Engineering, Electrical, Medical, and Dental. Young men who are not already at a University begin their training as General List officers at the R.A.N. College, into which they are accepted at two educational levels; *one at the Intermediate* level (Normal entry) between the ages of 14½ years and 16½ years, the other at the Matriculation level (Matriculation entry) below the age of 19 years.

Having completed at the R.A.N. College either three years in the case of the Normal entry or one year in the case of the Matriculation entry, they proceed to sea in a training ship for about six months, and are then sent to the United Kingdom, where they spend a further 16 months at the Royal Naval College at Dartmouth studying the more technical aspects of their profession. They then return to Australia, where they complete their basic training by proceeding to sea with the Fleet for about 12 months.

	THE R.A.N.	Total personnel
1921		4,843
1939		5,440
1945		39,510
1958	(PN.F.)	14,000

It will be observed that up to this stage the training of all officers is largely common. Basic training completed, the officers diverge into their various specialisations — Seaman, Engineering, Electrical and Supply, and at the age of about 24 years may be said to be fully trained professionally. They continue to serve in the ranks of Lieutenant, Lieutenant-Commander and Commander in their own technical branch in which they may subspecialise — the Seamen in Gunnery, Torpedo, Anti-Submarine, Air, etc., the Engineers in Mechanical, Ordnance or Air Engineering. On achieving the rank of Captain in their 40's, however, they again converge to form a common pool of senior officers of the General List.

The reason for a General List is that about this level

in the Navy, as in many other professions, the requirement becomes largely administrative — and good administrators are to be found in all branches. It is true that in many senior appointments specialist knowledge is still necessary, and many appointments can only be filled by officers whose training and experience has fitted them for the particular requirement of the appointment.

In general, officers make a career of the Navy and serve until they are obliged to retire by virtue of having achieved the retiring age for their rank. This is not the case with Naval ratings, of whom only about 50 per cent. are career men. From the point of view of expense, this is unfortunate because the training commitment is enlarged.

Nevertheless, it is logical to accept this fact with equanimity because, although service at sea is attractive to most young men while they are single, and they join the Navy for the most part at the age of 18, it is only to be expected that, having married and acquired a family, a large proportion will wish to settle down ashore. In any case, if they do not wish to do so their wives often persuade them. And who will blame the wives?

The situation is not without its advantages, so long as sufficient Chief Petty Officers and Petty Officers are retained, in that the average age of the ratings remains young, and experience in war has shown that those best suited to Naval Service are men between the ages of about 20 and 35. It also ensures that there remains in the community a reserve of fully trained, experienced, and relatively youthful men who are available for immediate mobilisation. After discharge they remain in the Royal Australian Fleet Reserve for five years, and are considered to retain a state of efficiency for this period. In any case, the education, technical skills and discipline gained in the Service remains a national asset, spread as it is throughout the community.

The age bracket for entry of ratings is between 17 and 26, and, in the case of tradesmen, up to the age of 28. In fact, almost all ratings enter at the age of 18, and the commissioning of the Naval Apprentice Training Establishment will, after 1960, remove the requirement to enter many tradesmen direct from shore.

The rating enters into an initial engagement to serve for 9 or 12 years in a particular branch. If he proves to be unsuitable for the branch in which he enters, he may transfer to another branch, but if he does not wish to transfer he must be released from his engagement. His basic training, which is common to all recruits, is carried out at the Recruit School in H.M.A.S. "Cerberus" at Westernport, in Victoria, and lasts for 8 weeks. He then proceeds to his technical school for 12 weeks at least, where his knowledge is brought to the minimum level in his specialisation, at which he will become useful at sea. He is then drafted to sea and puts into practice what he has learnt. His further training depends on his branch and aptitude.

It has been found that of those who offer themselves as recruits only about one in four is finally entered into the Navy. The reasons for non-acceptance are mainly physical disability, lack of sound basic education or psychological unsuitability. Every man who offers himself and who is physically fit is assessed by the Psychologist. Those who are entered must be suitable educationally and appear to have an aptitude for the branch in which they desire to serve.

Experience has proved the efficiency of the system of recruitment, and results show clearly that any attempt to increase the numbers entered by lowering the standards is uneconomic, since borderline cases result only in failures to qualify for sea service or extensive backclassing, a waste of money and effort spent in their training. On the other hand, when sufficient men offer to make it possible to raise the entry standards there is a very apparent improvement, not only in the failure rate, but in the disciplinary and moral aspects also.

* * *

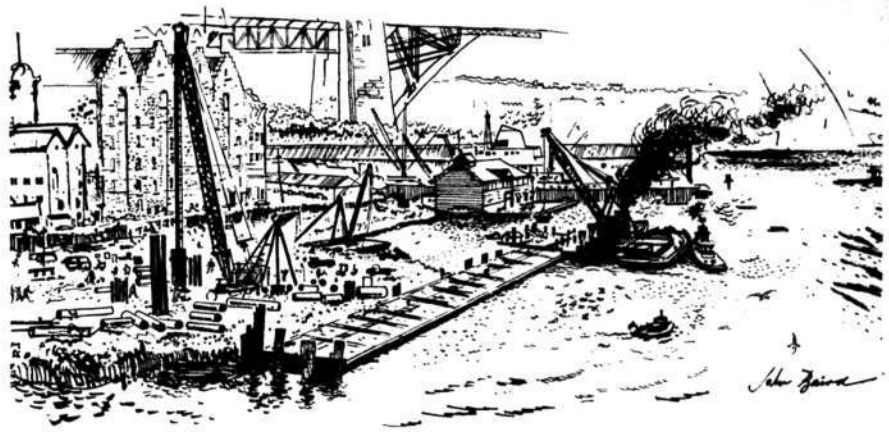
A further instalment of Rear Admiral Harrington's thoughtful and far-seeing views on the manning requirements of the R.A.N. will appear next issue. Editor.

Schweppes

DRY

GINGER ALE

In a class by itself in a glass by itself — or with a kindred spirit



Engineers Remake the Cove

By JOHN KENNY

By courtesy of the author and the "Sydney Morning Herald"

THE progress of the construction by the Maritime Services Board of the new £1 million overseas passenger ship terminal on the western side of Sydney Cove is a *fascinating engineering spectacle.*

The two-and-a-half years' project began in January last year and is now about a year off completion in June, 1960, when the £15 million 40,000-ton Oriana will open a new era of travel by super liners between England and Australia.

No harbour project since the Bridge, completed in 1932, and Captain Cook Dock built in World War II, has had such public interest or required such a variety of engineering techniques and equipment. It involves the reclamation of about two and a half acres of Sydney Cove with a quantity of sand and rock fill that would cover an era more than twice the size of Hyde Park to a depth of a foot. The sand is being dredged from the "Bank" near the entrance to Port Jackson and the hard fill comes from demolished buildings and excavations for the A.M.P. Building at *Circular Quay and the Eastern* Expressway alongside Macquarie Street.

CLOSING IN

Sydney Cove in its 171 years' history has given up an extensive area for reclamation. The head of the cove originally was nearly a quarter of a mile away from the present shore line. Walls were built around the cove in the 1840's.

The broad concept of the terminal project is to extend the western wall into the cove by a length of 700 ft. and an average width of 156 ft. and to erect wharfage and buildings on the reclaimed area. The underlying rock contours of the site made this form of construction preferable to the erection of wharves and buildings on piles. Piledriving would have entailed drilling holes in the rock for many of the piles and the costs would have been excessive because rock is relatively *near the surface over* most of the area. Another factor is that maintenance costs of wharfage of the solid quay type is less than for the piled type.

To give effect to their plans, engineers adopted the caisson method of wharfage construction. They built reinforced concrete caissons — virtually concrete tanks — and by filling them with sand sank them to form a new shore line and enclose the area to be reclaimed. This is the first extensive use of the caisson method in Australia. Victoria and Tasmania have lesser examples of it. Some Japanese ports have adopted caisson-type wharves and there are some in European ports.

Sydney Cove has always been

Australia's busiest centre of water traffic, but it has never had the varied activity which the equipment and materials required for the construction of the new terminal have given it. Floating cranes and pile drivers, dredges, barges, tugs, work boats and divers' punts have cluttered the waterfront. Ashore, motor trucks have unloaded fill, bulldozers have pushed it further and further into the cove, and they have jostled with mobile cranes, mobile pile-drivers and excavators.

The parade of sea-going construction equipment began with bucket dredges which stripped material overlying rock where a level trench had to be excavated for foundations for the caissons. The rockbreaker, Cyclops, fractured rock on the line of the trench by dropping its 15-ton steel needle on a predetermined pattern of spots as often as 15 times on some of them before the required fragmentation was achieved. A ladder dredge removed the fractured rock to form the foundation trench. The special foundations had to be laid because the existing rock could not provide satisfactory foundations.

CAISSONS USED

The making of the foundations required the services of as many as four divers at a time—for nearly seven months. By using two-way telephones, they carried out the filling of the dredged trench with ballast and assisted in the placing of 14 caissons in position.

These divers were thus associated with one of the most exacting phases of the project. They spread the ballast delivered from barges through a pipe and then levelled it with a device made of rails which winches pulled along the trench.

The caissons were themselves a novel feature of the project. They were similar to, though smaller than, the concrete caissons used to construct Mulberry Harbour for the D-day invasion of Normandy.

For the construction of the caissons the board built a special "shipyard" at the head of Rozelle Bay, 3 miles away from the terminal site. It has two launching ways and two overhead travelling cranes to handle materials for the caissons, which were launched at fortnightly intervals and towed to a fitting-out berth, and then to the site at Sydney Cove. The caissons measured 50 ft. x 37 ft. were 41 ft. high and weighed 1,200 tons. Construction of them began three weeks behind schedule and finished five weeks ahead of it.

In their position at the terminal, the top of the caissons is three feet above low water level. A concrete beam seven

(Concluded opposite page)

THE UNITED SHIP SERVICES PTY. LTD.

GEELONG MELBOURNE PORTLAND

VICTORIA AUSTRALIA

The largest organisation in Victorian ports for the supply and erection of fittings for the carriage of every description of cargo. Bulk grain fittings a speciality. Dunnage supplied, holds cleaned. Decks caulked. Carpenters, joiners and shipwrights supplied.

88-102 NORMANBY RD., SOUTH MELBOURNE

Telephone: MX 5231 Telegrams and Cables: "FLEETWAYS," Melbourne

A HAND FOR THE HOWLER

EVERY so often someone comes up with a query as to whether the educational standard required of naval personnel is set too low. It could be, of course, that examiners aim a bit too high; that originality of thought is not given the credit it deserves, and that it is really the perpetrator of the "howler" who deserves the bag of nuts.

Most trick cyclists will agree that it is not the dull boy who scrambles his meaning. It takes a lively imagination to describe the equator as a menagerie lion running around the earth, or to think of a parable as a heavenly story with no earthly meaning.

At first glance these howlers seem a bit too good to be true. Can anyone imagine the kind of brat who believes that a monologue is a conversation between two people such as husband and wife. Sounds like the breakfast table of a naval household the morning after a party in the wardroom; a different kind of home to the one that produced the young hopeful who believes that Christians are only allowed one wife — which is called monotony.

In an age of TV and science fiction there is bound to be the budding space traveller who thinks of dew as being caused by the earth revolving on its own axis and perspiring freely in consequence. Every child knows that an aircraft flying at supersonic speed generates enormous heat, and, as for the wearing effects of self-indulgence, nursery teaching is undoubtedly responsible for the historical notion that "Thomas a'Becket lived a dissipated life. Three nights killed him."

Slap the new entry down for that and he's had it from the start.

The End Has Come

Mention of Thomas a'Becket, brings to mind the sad fact that there is a connection between the Mercer's School in England and the murder of the Archbishop. Both are now a matter of the past tense, for after 789 years the school has closed down and a promise made to Henry VIII is broken.

When Thomas a'Becket, Archbishop of Canterbury, was murdered in 1170, his sister, Agnes, founded the hospital of St. Thomas of Acon in Cheapside. Dick Whittington, Lord Mayor of London in 1397, was a pupil at the hospital's school.

In 1542, King Henry sold the school to the Mercer's Company, who promised to educate 25 boys there for ever. In 1894, this London Trade Guild bought the fourth century Barnard's Inn Hall in Holborn and rebuilt it to accommodate 300 boys. In 1957 the loss on the Mercer's School was £23,000, and the end has come for a foundation of great historical interest.

(from page 8)

feet high will be cast along the 700 ft. length on the top and will become the edge of the new shoreline 10 ft. above low water level.

The next stage in the project will be the erection of the steel framework of the terminal building. Steel piles for the foundations of the building are now being driven into the fill in the reclaimed area enclosed by the caissons.

NEW F.O.C.A.F. APPOINTED

Rear-Admiral W. H. Harrington has been appointed Flag Officer Commanding the Australian Fleet.

The appointment was announced by the Minister for Defence (Mr. A. G. Townley).

Admiral Harrington will take over from Rear-Admiral G. G. O. Gatacre on December 22.

Admiral Harrington at present is Second Naval Member of the Australian Commonwealth Naval Board.

Admiral Gatacre's new appointment has not been announced.

NICOL BROS. PTY. LTD.

INCORPORATING

PENGUIN HEAVY LIFTING PTY. LTD.

&

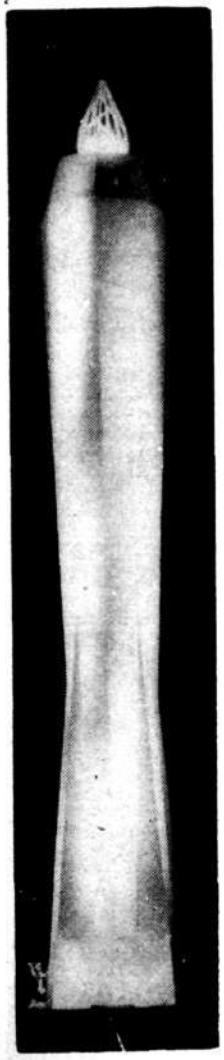
PENGUIN PTY. LTD.

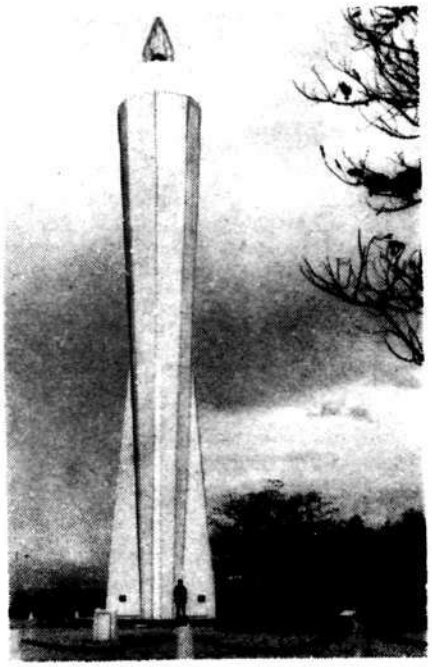
ALL CLASSES OF STEAM, DIESEL AND GENERAL ENGINEERING
BOILERMAKERS, OXY-ACETYLENE AND ELECTRIC WELDERS
PLUMBING AND ELECTRICAL WORK
FLOATING CRANE AVAILABLE AT ALL TIMES (20 TON CAPACITY)
ALL CLASSES OF MARINE EQUIPMENT FOR SALE

10-20 WESTON ST., BALMAIN EAST

'Phones: WB 3121 — 3 lines
After Hours: UM 9485, WM 3225, FM 5708

Day and night views of the £18,000, 90 ft. concrete lighthouse erected at the entrance of Madang Harbour, New Guinea.





The Coast-watcher's Memorial

ABOUT the time this number goes to press, an interesting ceremony will take place in New Guinea. Erected on Kalibobo Point at the entrance to Madang Harbour is a light house in the form of a "torch of freedom," which is a memorial to those who either "went bush" when the Japanese invaded New Guinea or, at a later stage, volunteered to go behind the enemy lines and report the movements of shipping and aircraft.

Originally organised by the R.A.N., the pre-war members of what was then the Naval Coastwatching Service spread its web around the Commonwealth. In New Guinea, coastwatchers were drawn from the ranks of local officials, planters and traders. They were civilians when war broke out who were enlisted and given Service status in their absence, badges of rank being dropped to them by aircraft circling over jungle hide-outs. As time went on, both army and R.A.A.F. personnel were absorbed into an expanding organisation, which from the beginning to the end fought a lonely war with the utmost vigour, while providing information of the greatest value to those directing Allied operations.

But the work of these men was of far greater consequence than was apparent at the time. In the darkest days, their presence in New Guinea was

(Concluded on page 28)

The Future of The ROYAL NAVY

INTERVIEWED in the course of a B.B.C. television session, Lord Mountbatten, whose appointment as Chief of the Defence Staff closes more than forty years' service with the Royal Navy, looked back as well as forward. The interview took the form of question and answer and is here quoted from "The Listener" in much abridged form.

Q. Even with increased hitting power, it would seem that the Royal Navy has fewer ships in numbers.

A. Numerically, yes. I suppose that is true. When I joined, the biggest ship, which was a battleship or battle-cruiser, had about 800 men on board. Nowadays, a ship like the "Ark Royal" or "Eagle" has 2,500 men — nearly as big as a battle squadron. A destroyer at the time I joined had 70 or 75 men, now it has up to 300. So arithmetically you can see that for the same number of men you have fewer ships at sea. I think we had before the First World War some 600 ships or more; now we have just over 200. Yet we have only one-quarter less men than we used to have.

Q. How about submarines . . . why is it that we are so long developing a nuclear submarine of our own?

A. Well, after the war the decision was taken — and rightly in my opinion — to concentrate on erecting nuclear power stations that could produce fissile material and generate electricity. And it was only about four years ago that there were enough atomic scientists to start work on a naval reactor, which has to be the pressurised water type. Then there was interdependence with the Americans, who started giving us information that was useful for our experimental station at Dounreay. Finally we were allowed to buy a propulsion unit like the Americans have in their latest and finest submarine "Skipjack." We have our own submarine design to put it in, and that's going ahead very fast. I prophesy that we'll have our first nuclear submarine at sea long before some of the gloomy prophets think.

Q. Supposing the nations of the world start hurling hydrogen bombs at each other, what can the Navy do then?

A. The Services are there not really to fight a global war; they are there to prevent it happening. They are there to deter it. Now, the deterrent is made up of two quite different forces. First, there is the V-bomber and the hydrogen bomb, supplemented by the ballistic missile with the nuclear head. But the other force is the sea, land and air forces of NATO, which is called the NATO Shield. Both these forces are needed if the deterrent is to be effective all the time. One backs up the other, and if an aggressor were to try a probing action it is just as likely that he would probe on the sea, or even under the sea, as on land or in the air; and if it's at sea then it's the Allied navies who have to stop it.

Q. What part in the Navy's share in this does our nuclear-powered "Dreadnought" play, when she comes to sea?

A. It isn't so much the "Dreadnought" that is essential, although she would be there to take on enemy submarines. The important thing is that if you do get this nuclear devastation, there'd still be millions of people left alive. They have to be fed and provided with livelihoods, and that's where the navies come in, because it's our job to keep the sea lanes open; to convey essential foodstuffs and survival stores through in face of huge submarine fleets, and it's the knowledge that the navies can, and would, do this which I feel helps the deterrent really to deter.

The "Dreadnought" is there as a killer submarine. She is, in fact, there to take on the enemy nuclear submarines — because, make no mistake about it, this nuclear propulsion isn't just a new form of propulsion, it's an absolute major breakthrough in naval strategy. It's a complete turning point. One of these nuclear submarines can go, submerged, faster than any ship on the surface except in calm weather. She can remain submerged for weeks, if necessary for months, and there is no real answer yet — except, I think, another nuclear submarine. That's why we had to get into the game. We've simply got to have nuclear submarines if we're going to survive as a Navy.

Q. After forty-six years, Admiral, you can look at the Royal Navy from the outside. Would you say that it still offers a worthwhile career?

A. Absolutely. So long as we remain an island and the centre of a Commonwealth, we've got to have a Navy or give up. We want young men with a spirit of adventure deep inside them, the sort of spirit that made this country great in the old days. We want them in the Navy as officers and men, and the right man with this burning fire in him will

(Concluded on page 16)

The Great Ocean Mystery

By DAVID FRITH

(By courtesy of the author and the Sydney "Sun")

JUST a few miles off the coast flows the great East Australian Current.

Warmer than the surrounding waters, it sweeps down from the direction of Fiji, swings south near Brisbane and heads towards New South Wales.

With it come the fish, basking in the warmth and enjoying the plentiful supply of food: plankton for the little fish, little fish for the big fish.

Sometimes the whole sea is stained brown with plankton. At other times it is as dark and empty as the rest of the lonely Pacific.

Exactly where the current comes from no one knows. Where it goes is an even deeper mystery, for just south of Sydney the trail disappears.

Yachtsmen racing down to Hobart sometimes pick up traces of it, and, hoping for a better speed, check thermometers they have fitted into boats' hulls for just that purpose.

But others, sailors and scientists, have seen signs of it swinging back to the north-east. Why, they do not know.

Permanent

It is just one of the problems that R.A.N. and C.S.I.R.O. scientists hope to solve in the next few years.

In October, H.M.A.S. Gascoyne will leave Sydney to follow a zig-zag course through the area bounded by the East Australian coast, New Zealand and New Caledonia.

At the same time H.M.A.S. Diamantina will leave to investigate the Indian Ocean between Fremantle, Timor and Cocos.

They will be away about six weeks before returning home to study results. Then there will be two more cruises next year.

After that? "We're hoping it will become a permanent set-up," says Dr. G. J. Humphrey, head of the C.S.I.R.O.'s oceanography division.

"These trips are going to put Australia up with countries like Russia and the U.S. in the front line of an attack on the mysteries of the sea.

"More and more countries are realising that comparatively cheap ocean study can yield far more practical results than space travel can hope to do."

Here are some of the questions the scientists will study:

- What is the course of the East Australian Current and how fast does it flow? How deep is it? What food does it carry?
- How "old" is deep water—that is, how long has it been separated from the surface—and what part of the world did it come from?
- How deep is the Indian Ocean? How tall is the "mountain range" in the Pacific about 100 miles east of Sydney?
- Does water in really deep "basins" stay there? Would it be safe to dump our radio active wastes in them?

To get their results they will use some of the oldest and some of the most modern equipment in the world.

Some will sound the depths with "tallow-armed" leads on lines in much the same way as sailors have been doing for centuries. Others will use the very latest in echo-sounding gear.

A completely new device will be used to gauge the flow of ocean currents. Electrodes towed behind the ship will measure the electromotive force developed by the water passing through the earth's magnetic field.

(The old idea of anchoring ship and measuring the flow of water past it does not work when you have 20,000 ft. of water in which to drop your anchor.)

Trawl Nets

Plankton specialists will trawl small cone-shaped nets behind the ships. Instruments in the mouth of each net will tell what volume of water produced the trapped plankton.

Other scientists will drop heavy bottles to collect samples of water at various depths. Laboratory tests for salinity and mineral and oxygen contents will tell the "age" of the water and from what region it has come.

These Australian cruises are part of a world-wide awakening interest in the sea. Behind it all is the belief that exploration of the ocean may solve some of the problems posed by the world's rocketing population.

Some scientists are finding increasing evidence to indicate that ocean farms and mines may some day supply the world with vital food and metals.

A programme of "aquafarming"—scientific cultivation of fish stocks, transplanting fish from one area to another, fertilisation of sea water—has already been mapped out by a U.S. oceanographic committee.

Minerals

And a routine I.G.Y. expedition last year charted vast submerged fields of metal-bearing rocks, or nodules, in the South Pacific.

According to Mr. John Mero, a research engineer at the University of California, the nodules known at present would yield 40,000 million tons of manganese and 1,000 million tons each of nickel, copper and cobalt.

Mr. Mero has estimated the minerals could be sucked up to the surface by existing methods and marketed at a profit, though land-mining would still be cheaper.

Another reason for the growing interest in ocean research is military. With the development of missiles that can be fired from submerged submarines, many planners figure that the battlefields of any future war will be under water.

But there is still another reason for studying the depths. The ocean floor, untouched by the destroying influence of the atmosphere, is a wonderful book of primeval history.

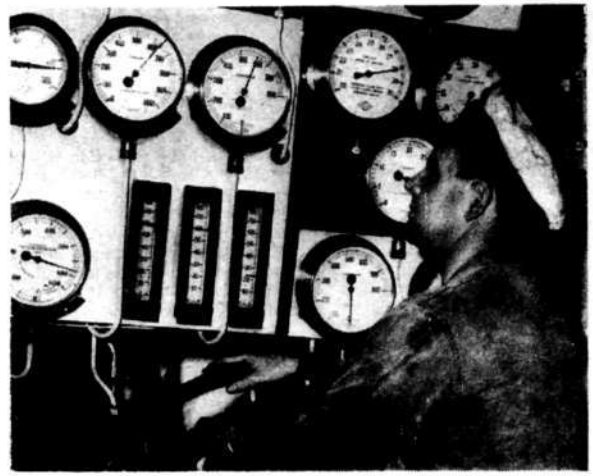
Some day, scientists hope, expeditions like the Diamantina-Gascoyne cruises may even yield clues to the mystery of the origin of life.

MELBOURNE STEAMSHIP CO. LTD.

Head Office:
31 KING ST., MELBOURNE
Branches or Agencies at all ports

Managing Agents for
HOBSONS BAY DOCK AND ENGINEERING CO. PTY. LTD.
Works: Williamstown, Victoria
HODGE ENGINEERING CO. PTY. LTD.
Works: Sussex St., Sydney
and
COCKBURN ENGINEERING PTY. LTD.
Works: Hines Rd., Fremantle
Ship Repairers, etc.

THE DRIVER'S SEAT



Above: Engineroom artificer B. V. Rice watches the throttle controls in the "Vampire's" "A" engineroom. Her top speed is over 30 knots.

POOLE & STEEL LTD.

43 STEPHEN STREET, BALMAIN
N.S.W.
Telephone: WB 2511

General Engineers, Boilermakers, Shipbuilders, Dredge Builders

Plans, Specifications and Estimates prepared for Mining Dredges and Plant of all kinds. Electric Welding and Oxy-acetylene Work.

Telegrams:
"POOLSTEEL," BALMAIN, N.S.W.

British Admiralty Charts

A WORLD SERVICE

THE Hydrographic Department (then called Hydrographic Office) of the Admiralty was established in 1795 under Earl Spencer, and the first Hydrographer of the Navy was Alexander Dalrymple who was in the East India Company's service. In 1779 Dalrymple had been appointed by the East India Company to examine their ships' journals and to publish charts and nautical instructions which eventually numbered 58 charts, 740 plans, 57 views of land; altogether 855 plates; and also 50 nautical memoirs. Thus he became the first East India Company's Hydrographer. In 1808 he was succeeded as Hydrographer at the Admiralty by Captain Thomas Hurd, R.N., and since that time this position has always been held by officers of the Royal Navy.

Very few, if any, reliable charts had been constructed or published in England before the first of Cook's voyages made in 1768-71, but as far back as 1750 the Admiralty had employed private individuals to make surveys of various coasts. In 1795 the newly set up Hydrographic Office consisted of one Hydrographer, one assistant and one draughtsman but at this time the Navy had no recognised Hydrographic surveyors. Commander Matthew Flinders was the first naval surveyor employed abroad under the auspices of the Hydrographic Office, and this was in about 1800, but not until Sir Frances Beaufort became Hydrographer was the naval surveying service properly established under the Hydrographic Office.

Sir Francis Beaufort was appointed Hydrographer in 1829, when he was still a Captain, and kept this office till 1855. He had had much practical experience of surveying, chiefly in Greek waters and off the Syrian coast. The work of surveyors in those early days was extremely hazardous for amongst other dangers they had to contend with pirates and all kinds of attack. In 1812 while surveying the Syrian coast Beaufort and his party were attacked by a band of Turks and he was so severely wounded that it was miraculous that he survived. When he was appointed Hydrographer Beaufort found that the department was little more than a map-office. Maritime surveying was just beginning and the Hydrographer was considered the supporter rather than the guide or originator of nautical surveys. Very shortly after his appointment, however, Beaufort had made his office into a model on which Copenhagen, St. Petersburg and many European countries based their own. The state of the surveying service at this time was also very unsatisfactory, there being almost no foreign or colonial surveys in existence, and even the coasts of England were only partially sounded.

Beaufort, however, began a great series of works in which he intended to comprise all the maritime surveys of the world. He knew when he took office that there was scarcely a correct chart of any portion of the globe in existence, but he had an able staff of surveyors and they were sent to all parts of the world. South America, the West Coast of North America and of Mexico, the west coast of Africa, the northern coast of Australia and New Guinea, Falkland Islands and the River Plate, New Zealand, Palawan, China, the West Indies, St. Lawrence and Nova Scotia, the Greek Archipelago, the North Sea, the Irish Sea and various parts of the United Kingdom were among the surveys he organised. "The master mind of Beaufort which directed these efforts for quarter of a century did more for the advancement of maritime geography than was effected by all the surveyors of European countries united."

It was not until 1831 that the Hydrographic Office was formed into a separate department under the Admiralty. The first published set of Admiralty Tide Tables were issued in 1832, and Officially Guaranteed Notices to Mariners were issued from the Admiralty for the first time in 1834. In 1849 the Hydrographic Department published 92 charts and plans, besides books and tables.

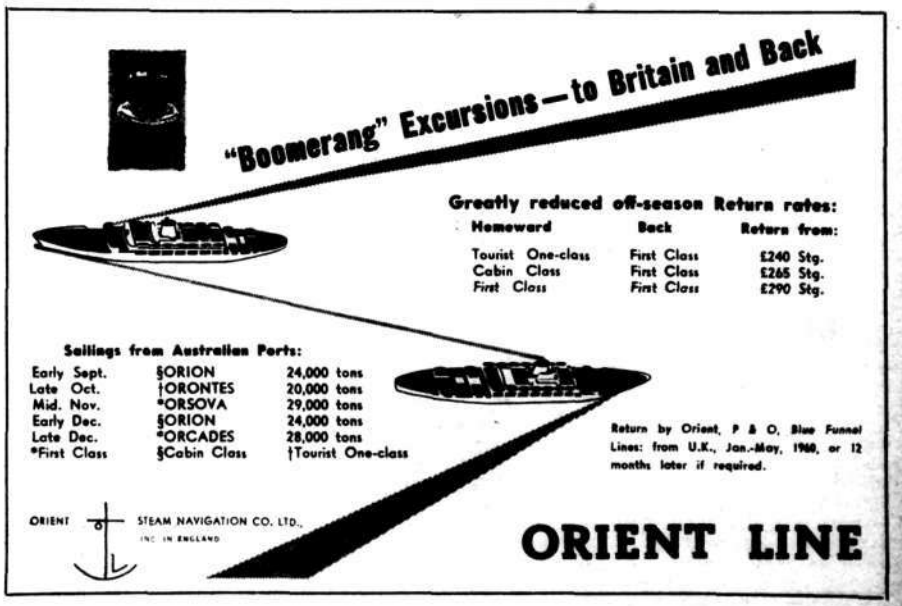
Before the last war British Admiralty charts were used more widely than any others. All the Scandinavian countries, Russia, Germany, Italy and Japan used British charts except for the charts of their own coastal waters. America also used some 800 British charts. In recent years too Britain has continued to help various countries by charting their waters for them. For example the west coast of Siam was done by arrangement with the Siamese government and was completed about 1936. The original surveys made by Britain are still being used for many of the South American charts and those of the Grecian Archipelago, Turkey and China.

The surveying of the coasts of all the Dominions was naturally done by Britain in the early days but Canada has been charting her own waters for 40 years or more, and Australia began to do her own charting in 1925. Britain still does the surveying for New Zealand and most of South Africa. The Royal Indian Navy has had two surveying ships for a very long time, and it has been responsible for a great deal of the surveying in that area — India, Burma, Andaman and Nicobar Islands and the Persian Gulf. Originally the East India Company had done a considerable amount of the surveying of these waters.

The Hydrographic Department today numbers over a thousand, and it issues and keeps corrected some 4,000 navigational charts covering all the oceans and coasts of the world. Every year before the war over a million copies were printed, and the present output is over 5 million charts a year. The Department's collection of charts and maps is probably the largest and most valuable in the world and has been estimated to number about a quarter of a million. Among them are some which are nearly 300 years old.

Admiralty charts are published with a view to meeting the needs of seamen in all parts of the world. For generations these charts have been famous for their accuracy. Some of the charts now in use are based in the surveys made 50 years ago, but they have to be revised continually. Much of the information changes rapidly and the task of keeping the charts corrected has assumed enormous proportions since the beginning of the war. Navigational dangers, the promulgation of which is urgent, such as sunken wrecks, changes in the position of a minefield or a buoy are notified to all chart users by the daily issues of Admiralty Notices to Mariners which are available gratis at any shipping office. Nearly 3,000 of these Notices are issued yearly. Minor alterations on the charts are made by hand and when a considerable number of corrections have been made the charts are reprinted. Admiralty charts are available at ports and depots all over the world. They are not translated into foreign languages, this being unnecessary.

During the last war, it was the task of the Hydrographic Department to compile the necessary charts for the various amphibious operations, and it is the Hydrographic Supplies Establishment, which prints



The R.A.A.F.

Avon Sabre Jet . . .

. . . these, too, use

Golden Fleece

GOLDEN FLEECE

". . . proud to be Australian"

and supplies copies to all ships. Bigger warships are supplied with a many as 1,500 to 2,000 charts, and for the invasion of Sicily the Establishment had literally to supply tons of charts for the 3,000 odd vessels taking part.

The Admiralty, in addition to supplying charts regularly to Washington, supplied navigational charts and publications to all United States warships. Combined Operations ships and craft and many U.S. shore establishment and bases concerned in the invasion and liberation of France. The number of charts alone involved in these issues is nearly 150,000, while the number of publications runs into many thousands.

In such a brief survey it is impossible to give many details of the arduous, and in the early days hazardous, work which has been and is still carried out in all parts of the world by the Officers and men of the surveying service. But the contributions of these early pioneers and adventurers has been invaluable, and it was largely due to their efforts that the British Hydrographic Department has for so long been able to give the seamen of the world the accurate Charts necessary to sail the seas in safety.

THE FUTURE OF THE ROYAL NAVY

(from page 11)

have a wonderful life. I know we have our problems: we'd like to have more ships. But on the whole, with all my knowledge of forty-six happy and thrilling years in the Navy, and with the knowledge I have of what the future holds in store for the Navy, I'd have no doubt whatever. If I was a youngster and they'd have me, I'd go straight back into the Navy.

NAVAL AFFAIRS

from All Compass Points

NEW THIRD NAVAL MEMBER

THE third Naval Member and Chief of Construction of the Australian Naval Board (Rear-Admiral C. C. Clark, C.B., O.B.E., D.S.C.) will retire from the Royal Australian Navy on August 21st and be succeeded in his appointment by the Deputy Chief of Construction and Director of Technical Planning (Captain K. Mc. K. Urquhart, A.D.C., R.A.N.), who will be promoted rear-admiral

Rear-Admiral Clark had been Third Naval Member and Chief of Construction since September 15th, 1953. Captain Urquhart had been Deputy Chief of Construction since December 8th, 1958.

ROYAL AUSTRALIAN NAVY PROMOTIONS

THE following promotions date from 30/6/59:

To be Captains: Acting Captains I. K. Purvis and D. C. Wells.

To be Commanders: Acting Commanders R. H. Thompson, D.F.C.; M. H. Fowler; B. L. Cleary; G. Kable; K. W. Shands.

Engineering Specialisation—To be Captain: Commander J. F. Bell. To be Commanders: Acting Commanders J. C. W. Kennedy and H. J. Bodman.

Medical Branch—To be Surgeon-Captain: Acting Surgeon-Captain R. M. Coplans. To be Surgeon-Commander: Surgeon-Lieutenant-Commander S. F. H. Haughton.

Royal Australian Naval Reserve — To be Commander: Lieutenant-Commander E. B. Hopkins. To be Lieutenant-Commander: K. G. Wilson. To be Lieutenant-Commander (SP): Lieutenant B. R. Nield.

NEW R.A.N. APPRENTICE GROUP

FIFTY boys from all States have been selected to enter the Apprenticeship Training Establishment at Quaker's Hill, near Parramatta (N.S.W.). At the termination of a five years course, these apprentices will become highly skilled artificers and shipwrights in a rate equivalent to that of Petty Officer.

The training provided under this scheme is the best available, and enjoys the blessing of leading trades union officials and of the N.S.W. Apprenticeship Commission.

WASH AND BRUSH UP

ON completion of a shake-down cruise of 24 weeks' duration, H.M.A.S. Vendetta has returned to the Williamstown Dockyard for the normal manufacturer's refit. Since she left the yard in February, Vendetta has visited New Zealand, New Guinea and New Caledonia; her engines have been worked in and her equipment tried out. In every respect the ship has met expectations. Vendetta is due to go to sea again early in October.

MALAYAN RESERVE RATINGS TRAIN IN R.A.N.

THIRTY Malay ratings of the Malayan division of the R.N.V.R. have just completed a fortnigh's sea-training in the R.A.N. destroyers Tobruk and Anzac, which are serving in the Far East in the British Commonwealth Strategic Reserve.

One of the reservists, who was serving as an engine-room artificer in the Tobruk was awarded a boiler-room watchkeeping certificate.

ATOMIC SHIP NEWS

TWO items of atomic ship news concern the dry docking of the Nautilus, world's first atomic submarine, and the launching of Savannah described as the world's first atomic-powered merchant ship.

The former goes into dock at Portsmouth, New Hampshire, for an overhall that will include replacement of the nuclear core, which has propelled Nautilus countless miles in ocean depths. The core has been turned over to the Atomic Energy Commission for evaluation.

At Camden, New Jersey, the 21,840 ton merchant ship Savannah was launched by Mrs. Eisenhower. Named after S.S. Savannah, first ship to cross the Atlantic under steam in a 29 day voyage from Savannah, Georgia, to Liverpool, England in 1819, the total cost of the ship to date is estimated at £18,303,000. She is about 70 per cent. completed, and is not expected to go into service before 1961.

GLIDING RECORD

WELL known for his gliding skill, Commander Goodhart, R.N., flew his Skylark III sailplane a distance of 358 miles from Lasham, in Hampshire, to Portmoak near Kinross, and beat by ten miles the existing British record set up by Sergeant Andrew Gough of the R.A.F. a year ago.

Having announced his destination before starting, Cmdr. Goodhart also broke the British goal flight record, and in doing so averaged 55 m.p.h. over a 500 kilometre course, the first United Kingdom speed record.

QUEEN'S COLOUR FOR THE SUBMARINE SERVICE

THE present year, the 58th of the British Submarine Command, will be remembered as the year in which H.M. the Queen recognised its growing importance by presenting the first Queen's Colour to the Submarine Service.

A ceremony which took place at H.M.S. Dolphin, the Gosport headquarters of the Command, included a Royal Guard of 100 men drawn from Submarine Squadrons serving in British, Mediterranean, Canadian and Australian waters. Amongst those watching the ceremony were eight officers who won the VC—some during the First World War—while serving in submarines.

U.S. NAVY TO SEE LATEST RADAR

H.M.S. VICTORIOUS is visiting Norfolk, Virginia, this month, to show U.S. naval observers the Royal Navy's latest radar equipment. Known as Type 984, this is a new three-dimensional system which provides simultaneous information on the height, range and bearing of aircraft.

Described by Admiral of the Fleet, Earl Mountbatten as "the finest in the world", a more complete and readily understandable picture of the air situation around the carrier is provided than has been possible in the past. Above the carrier's island, the well-known "giant dustbin" which collects the information weighs 27 tons.

INDONESIA

THE submarine chaser or patrol vessel Pierre, PC 1141, has been acquired from the United States Navy and renamed Tjakalang. Turned over to the Indonesian Navy at Pearl Harbour, Hawaii, recently, this vessel has a full load displacement of 450 tons with an armament of one 3 inch dual purpose gun, one 40 mm. anti-aircraft weapon, and two 20 mm. anti-aircraft pieces as well as four depth charge throwers. Two General Motors two-stroke diesels of 2,880 brake horse power turning two shafts give her a speed of 20 knots.

THE GOOD OIL

SERVICE canteens have been integrated under the heading of A.S.C.O.—Australian Services Canteens Organisation. According to press reports this has led to some variation in prices. Apparently it costs more to drink a glass of beer in some messes than it does in others.

In the Navy, where canteen prices are only partially integrated, there has been a considerable reduction in the price of many canteen lines. One frigate, it is said, cigarettes are down by 7/6 a 1,000. A navy spokesman spreads the glad tidings that in 99.5 per cent. of cases the prices have dropped in navy canteens. The price of beer has not risen.

The "QUEENS"

THE announcement by Col. Bates in the Cunard Line Statement provides some solid facts about the prospective replacements for the "Queens". They will be of much the same length and beam as the existing ships, and of almost the same gross tonnage. The major dimensional difference will be in draught: the replacements are planned to draw 30 feet instead of 39 feet, enabling them to enter and leave Southampton at any state of the tide.

Dimensions of this order indicate that it is intended to use considerable quantities of light alloys in the vessels' superstructures. The saving in top weight which these alloys permit can be applied in various ways depending to some extent on the amount of saving involved. It may result in a finer hull form and higher speed; in reduced power required to drive the ship; in lengthened or heightened superstructure; and so on. In this case it is clear that the saving will be used largely to reduce draught with gross tonnage kept up to approximately the same as in the present ships by additional superstructure. There will also be a small reduction in power and a slightly higher speed.

Col. Bates was definite, however, that the first ship, to replace the Queen Mary, will be powered by conventional engines. She will be needed in the comparatively near future, before nuclear systems are likely to have proved themselves economic. When it comes to replacing the Queen Elizabeth, however, there may be a different story to tell: Cunard are keeping an open mind on the matter.

Surprise has been expressed in some quarters at the intention to build 80,000 tonners when most Atlantic operators are thinking in terms of something a good deal smaller: Cunard, however, know their trade very well indeed, and are certain to have considered the pros and cons very carefully. How they will use the space and tonnage available will be their secret for a long time to come. Meantime it is perhaps worth remembering that an American, Mr. Detwiler, is working on a project for four one-class liners of 108,000 gross tons, to be built by Verolme in Holland. Admittedly they are designed to capture the tourist trade; but the project is one which cannot be wholly overlooked in any plans for the Atlantic passenger trade during the next few years.

H.M.A.S. "Australia," the first flagship of the Royal Australian Navy, was sunk under the terms of the Washington Treaty on 12th April, 1924.

A GRAVEYARD OF SHIPS

By CAPTAIN C. W. T. HENDERSON, First-class Pilot

(By courtesy of the author and Maritime Services Board of N.S.W.)

ABOUT eighteen nautical miles east and south from Sydney, slightly outside that section of the continental shelf which is shown on Admiralty Charts by a continuous serpentine dotted line, indicating a depth of 100 fathoms of water, lies a circular area of ocean five miles in diameter designated by the Commonwealth navigation authority as a disposal area for the sinking of ships at sea. This specially defined area is the "graveyard of ships" and its centre is fixed by observation of Macquarie Lighthouse, which, perched atop of the sandstone cliffs at South Head, should bear from the observer 299 degrees.

Listed in terse, unimaginative phraseology, in prosaic official records, lies the ignominious fate of many a noble vessel ranging from outmoded H.M.A. ships and former mail and passenger liners down the list through coastal freighters and an ex-pilot vessel to condemned colliers, decayed dredgers and rusting wrecks of paddle tugs and harbour lighters. They lie 100 fathoms deep in a sea once pounded into fine spray by the same bows as they ploughed through many a black sou'easter.

With tug boat ahead, and assisted as far as the Heads with tugs alongside, the condemned hulk is taken seaward on a lengthened towline, steering a course to her final destination E by S a-half S. The distance having been run, the position is checked to ensure that there is no risk of the vessel failing to sink sufficiently deep to avoid fouling fishermen's trawls, and then the explosive charge is fired or the seacocks breached, which sends the old hulk to the bottom.

Amongst the more distinguished of the company sharing this ocean grave is H.M.A.S. "Australia," the first R.A.N. ship of that name, which was sunk under the terms of the Washington Treaty of 1922. Many will recall the day in 1913 when thousands of people lined North and South Heads and the harbour foreshores to see the "Australia," first flagship of the newly formed Royal Australian Navy, lead the other units — "Sydney," "Melbourne," "Encounter," "Parramatta" and "Yarra" — proudly up the harbour. A battle-cruiser of more than 19,000 tons displacement and 44,000 horse-power giving a speed of 25 knots, the "Australia" was launched at the Clyde and carried eight 12-inch guns.

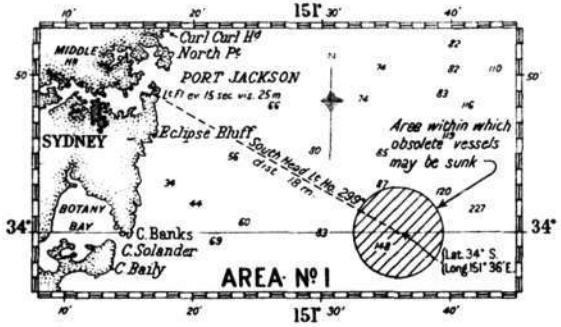
In the earlier part of World War I she participated in the raid on Rabaul and assisted in the capture of the Bismark Archipelago, Samoa and King Wilhelmland, and it was undoubtedly due to her presence in home waters that Australian

coastal cities were saved from being shelled by Admiral Von Spee's ships. Serving from 1915 to 1918 in the North Sea, where she was flagship of the Second Battle-Cruiser Squadron, the "Australia" was unfortunate enough to miss the epic Battle of Jutland as a result of being rammed by her sister ship, H.M.S. "New Zealand." However, she took part in the German surrender in November, 1918, and returned to her home port in 1919.

When the old "Australia" was towed outside the Heads on 12th April, 1924, she was accompanied by the "Melbourne," "Brisbane," "Adelaide" and the destroyers "Anzac" and "Stalwart." The Australian flag and the White Ensign which went down with her were those which she bore throughout her career, and her decks were covered with a mass of floral tributes sent by people who were proud of their first Australian flagship.

The sad fate of being towed outside and sunk off the Heads 18 years to the day on which she had fired the first shot for the R.A.N. in World War I was the lot of H.M.A.S. "Encounter," a second class protected cruiser of 5,800 tons displacement and 21 knots, built for the Royal Navy at Devonport in 1902. When the R.A.N. was first formed in 1912, the "Encounter" was serving on the Australia Station and was acquired by the Australian Government, spending the remainder of her days as a unit of the R.A.N.

Following the removal of her armament, when peace was restored, she was renamed "Penguin" and served as a depot ship at Garden Island, becoming a familiar sight over the years to harbour ferry travellers. The gradual reduction of Defence estimates around this time necessitated her destruction, and, in 1929, she was stripped at Cockatoo Island and eventually, on 14th September, 1932, battered and rusted, the old warrior was towed out to be dispatched to Davey Jones' Locker.



Next in order of rank in condemned naval ships were the torpedo - boat destroyers "Yarra," "Success," "Swordsman" and "Stalwart." H.M.A.S. "Vendetta," a destroyer of a later class, met the same fate in August, 1948, after an incident-filled career. Launched in 1917, the "Vendetta" was in action in the same year and affected the rescue of 430 of a total crew of 470 from the mined and sinking H.M.S. "Cassandra" in the Baltic by going alongside in heavy weather. After the war, she escorted captured German destroyers from Scapa Flow to Rosyth, and, in 1920, she was selected to act as escort for the body of the "Unknown Soldier" from Ostend to Dover.

The "Vendetta's" crew were again called upon to uphold their tradition for valour at sea, when, in 1923, a volunteer crew manned the Aberdeen lifeboat, and, with superb seamanship, rescued the crew of the doomed steamer "Imperial Prince" after previous attempts by local lifeboat crews had failed. In 1925 she was singled out for the honour of escorting the Royal Yacht "Victoria and Albert" during the Mediterranean cruise of King George V and Queen Mary. From 1933 she served in home waters, but shortly after the outbreak of World War II in 1939 she entered the Mediterranean, and was the last of the original five Australian destroyers to leave in 1941.

During General Wavell's advance along the Libyan coast, "Vendetta" escorted forces bombarding enemy short defence positions, as well as escorting convoys to Malta, Greece and Crete. Amongst her many exploits was a record of 24 night runs into Tobruk Harbour, a feat not equalled by any other destroyer; the towing of a ship in dire distress and rescuing 450 men from a beach being heavily shelled.

Of all the ships which have graced our harbour and have finished their careers at the end of a towline, perhaps one of the most admired and the best known was the pilot steamer "Captain Cook" — second of the series to bear that name.

The original "Captain Cook," a wooden, straight-stemmed ship of 185 tons, served on the Watson Bay Station from February, 1877, until she was replaced in 1893 by her namesake and successor, a steel vessel of 396 tons cap-

(Concluded on page 29)

An Historic Signal

Former Chief Yeoman of Signals, Leonard Branson ("Sal") Harding, R.A.N., who died recently in the Heidelberg Hospital (Victoria), was the man who passed to H.M.A.S. "Sydney" the signal that led to the destruction of the German cruiser "Emden" off Cocos Island in the First World War. Retired in 1949 after forty-one continuous years of service, Harding was on duty on the bridge of H.M.A.S. "Melbourne" when the W/T station at Cocos Island flashed the news that a strange warship was approaching.

It was the 9th November, 1914. H.M.A.S. "Melbourne" was in charge of the convoy of 20,000 ANZAC troops proceeding to the Middle East; by far the largest convoy ever to have left Australian shores. There was some anxiety as to the whereabouts of German warships, particularly the "Emden," who had carried out a highly successful raid upon Penang at the end of October, and remained a potential danger until dealt with.

The thirty-eight transports and their escorts, "Melbourne," and "Sydney" plus the Japanese cruiser "Ibuki," were on course about fifty miles south of Cocos Island and due to pass about dawn, when strange wireless traffic was intercepted by several vessels as well as by the W/T station on Cocos itself. This message was a signal made by "Emden" to her attendant collier "Bursek" arranging a rendezvous, and the last thing the Commanding Officer, Captain von Muller, expected or desired was the arrival of a British cruiser instead. His intention was to destroy the cable and wireless station on Cocos, and the certainty that the operators would get off a warning was accepted in the belief that help could not reach the island in time.

It turned out otherwise, however, and within moments of picking up the S.O.S., "Melbourne" swung sharply towards the threatened island and increased speed. But she had to give it away. As senior escort her responsibility remained with the convoy, and so it was that "Sal" Harding passed the signal to "Sydney" to go in and do the job alone. The rest is history.

Close-up of 24-ton damaged propeller of P. & O. liner "Himalaya". Damage occurred in Suez Canal on July 12. —"S.M. Herald" photo.

THE MERCHANT SERVICE

"OIL AND THE RED DUSTER"

THE touchy political situation in the Middle East over the past few years, which took the control of the Suez Canal away from the Western allies, has underlined the world dependence on oil and oil tankers. This, coupled with the forecast that the annual consumption of oil will double in the next ten years, has caused the major tanker-owning companies to review their policies and building programmes.

British Petroleum, through its two subsidiaries, B.P. Tanker Co. and B.P. (Clyde) Tanker Co., owns the largest fleet of vessels under British registry, both by number of ships and by tonnage, and one-quarter of all tankers under the red ensign.

This fleet, before the war, consisted of 93 ships with a carrying capacity of just under one million tons, composed mostly of 8,000- and 10,000-ton vessels, with a few 12,250 tons, which were then believed to be the most useful type of oil-carrying vessel. It now owns 149 ships, ranging from 8,000 tons to 42,000 tons, and hires an average of 90 ships from British and foreign owners.

Improved facilities have now made it possible for ships of 16,000 tons to distribute the refined products, which was once the task of the 10,000 and 12,250 tonners, while the smaller type of vessel has been returned to serve the smaller ports.

The temporary loss of Abadan prompted a policy of refining the crude oil near strategic marketing centres rather than near the well-heads. This called for a class of vessel designed purely for the carriage of crude whose size need only be limited by the ports they serve, a fact that has been given full consideration in the siting of new refineries and the expanding of existing ones.

In 1951 the first of the new 28,000-ton vessels was commissioned. They were so much bigger than anything known before that they were termed "super tankers" in the oil trade. They were quickly followed by orders for ships of 32,000 and 35,000 tons, which the former Suez Canal Company believed would be the biggest they could handle after their programme of widening and deepening the canal had been completed.

By CAPTAIN H. W. WHITE
late Marine Superintendent at the P.P Oil Refinery, Kwinana, W.A.

These huge ships brought with them problems of design, construction and operation of their own. In particular, economy in running and steerage in the Suez Canal demanded vessels of a single screw, and as diesel engines of a suitable size and power were not available, the less economical steam turbine with water-tube boilers was introduced. However, this permitted the installation of steam turbine cargo pumps by which an entire cargo could be discharged in sixteen hours.

In operation the bigger vessels showed the greater economy and the temporary closing of the canal showed that we might be forced to use the Cape route in time of war, so that even bigger tankers would be needed to prevent the time lost from affecting the amount of cargo delivered. It was then that orders for vessels of 50,000 tons and upwards were placed and negotiations were put in hand to develop Milford Haven in Wales as an additional port for receiving them.

The B.P. Tanker Company's present building programme includes 7 ships of 65,000 tons, 7 ships of 42,000 tons, 14 ships of 15,500 tons), 9 ships of 50,000 tons, 19 ships of 34,000 tons, 1 ship of 49,000 tons, 5 ships of 32,000 tons; a total of 62 ships with a carrying capacity of 2,271,000 tons.

Even so the limit of the world's demand for oil is not yet in sight, treble and quadruple the present annual consumption can be anticipated in the years to come. If by then the atomic propulsion of ships is an accomplished economical fact, we may not be too far from even larger tankers which sail beneath the sea, where, with sufficient power, even greater speeds than those on the surface are possible.

Far below the stresses of storm and wave, perhaps they will even be safe from attack by atomic weapons. The red ensign may even yet follow in the wake of the Nautilus.

* * *

PLASTICS HULL FOR SAILING DINGHY

In manufacturing the hull of the Alpha racing dinghy, the Bristol Aircraft Company has achieved one of the first successful commercial applications of a new method of reinforcing large glass-fibre structures. In this process, the reinforcement is provided by rigid plastics foam, the constituents of which are injected into the internal cavity of the structure. It is claimed that even if the dinghy were cut in two both parts would float safely.

The all-plastics hull is being made by Bristol to the order of Bossoms, of Oxford, who are producing the Alpha 12-footer. Two large one-piece glass-fibre mouldings make up the main structure of the dinghy hull. One moulding is the outer hull and the other is the inner hull, consisting of the decking, cockpit and gunwale surround. If large-scale production is required, injection moulding methods perfected by Bristol could be used for building these components. To make the complete hull, the inner and outer sections are brought together and bonded around the gunwale.

Into the complex cavity between the outer and inner skins the constituents of the foam filling — polyester resin and Diisocyanate—are injected in carefully controlled proportions. The material to be injected is in the form of a highly viscous fluid, and the injection process has to be completed rapidly, as the foaming reaction follows almost immediately upon the mixing of the constituents. This filling strengthens and stiffens the entire hull structure, greatly increasing its resistance to impact damage. The plastics foam filling has a second and equally important function. As well as being strong, this material is extremely light and it, therefore, acts as a permanent and indestructible buoyancy medium.

The Alpha 12-footer is a thoroughbred racing dinghy, its hull shape having been drawn by the well-known dinghy designer, Ian Proctor. It is claimed to be the first racing dinghy specifically designed for glass-fibre construction, and in its production full advantage has been taken of the special qualities of this material. The result is a robust, durable and easily-handled craft, needing the absolute minimum of maintenance.

CONVERTING FROM STEAM TO DIESEL

Since they first started converting ships from steam to diesel power some months ago, the ship repairing company of C. H. Baily Limited, Newport, England, have received enquiries from all over the world.

The conversion work entails the removal of one main boiler and all main engines, also some of the auxiliaries. A Mirrlees

WAILES DOVE BITUMASTIC PRODUCTS

BITUROS SOLUTION AND HARD ENAMEL

THE WORLD'S BEST PROTECTION

for

FRESH WATER DRINKING TANKS

J. WILDRIDGE & SINCLAIR PTY. LTD.

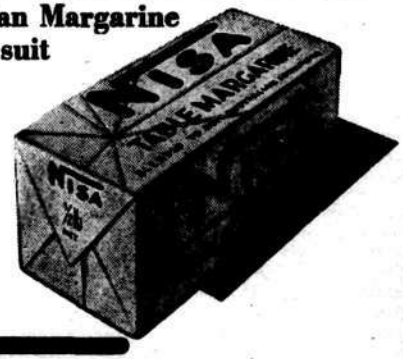
97 PITT STREET, SYDNEY, N.S.W.

MELBOURNE BRISBANE

AGENTS:

ADELAIDE — GIBBS BRIGHT & CO.
PERTH — FLOWER, DAVIES & JOHNSON
HOBART — R. L. MILLIGAN

an Australian Margarine blended to suit Australian conditions



NISA IS NICER

NISA TABLE MARGARINE

SEA SCHOOL

(Courtesy of the Melbourne "Age")

Recently seen in Australian ports, the "City of Lucknow" is a cargo vessel that has been converted into one of the best training ships in the world. Aged between 16 and 20, British cadets of a type seen above study every aspect of ship life during three years' course.

0 0 0

British diesel engine, working through a gearbox into the original shaft, is fitted in place of the old main engines.

A small auxiliary boiler will work from the exhaust of the main engines and there will also be fitted additional ancillary equipment, such as compressors for starting the main engines and for other purposes.

One original main boiler will remain for use mainly while the ship is in port. Owners of small vessels converted from steam to diesel report satisfactory results, combining an increase in speed with greater economy.

BOWLER HATTED

When the Harbour Trusts new slipway at Geelong, Victoria, was being tested in July, the bowler hat worn by the trust's foreman shipwright, Mr. J. Skene, stood out a mile. There is a story behind that hat.

In England it is said to be a condition of employment in the shipyards, that foremen and above in rank must wear bowler hats at work. When one of the Geelong Harbour Trust's officers (Mr. A. E. Pritchard) was in England attending the trials of the two tugs "Spencer Nall" and "Geelong", the dock master at Cammell Laird's shipyards on the Mersy wore a bowler hat, which he eventually gave to Mr. Pritchard.

An indispensible adjunct to the British shipbuilding industry therefore found its way to Australia; a symbol of authority and tradition—and sometimes a parting gift as well.

BRITISH DEVELOP CABIN CATAMARAN

A British boat-building firm have carried out trials on what is believed to be the first accommodation type catamaran to be built in the country. Named the **Flamingo**, the craft has twin 36 ft. hulls. An extensive cabin built over the hulls sleeps six people comfortably, still giving reserve for another four people. On initial sailing trials the craft made passage against a stiff wind of from force 4 to 6, showing remarkable windward ability. Timed runs have given an average speed of 12½ knots for 2½ miles. It is estimated that speeds of over 20 knots are possible in good conditions.

FOR SEA CADETS

The Royal Yacht

USED by H.M. the Queen on the occasion of the opening of the St. Lawrence Seaway in June, the Royal Yacht "Britannia" has carried Her Majesty around the world. The vessel berthed in Australian ports, an honoured and respected guest. But she was challenged in Torres Strait.

While steamers make frequent use of Torres Strait, the islands that lie between Australia's most northerly point, Cape York, and the southern coast of New Guinea are more or less a closed area to strangers. The Torres Strait islanders, numbering about 6,000, have rights and privileges in their own domain, and the Department of Native Affairs of the Government of Queensland see to it that these are preserved.

There is a patrol vessel based on Thursday Island which doubles the part of stores ship and passenger transports: a comfortable beamy old party whose chief characteristic is a sort of roll, bowl or pitch action in a Torres Strait lop. Amongst other duties is that of watch dog, and when one hot morning the skipper saw a graceful three-masted ship passing at a fair clip, he quite properly asked her to identify herself. The answer he received is something he talks about to-day

People are always talking about the Royal Yacht, seen during this Reign further afield than ever before. Size, shape and what it's like inside are things the public want to know, and in an old copy of "The Navy", Nowell Hall, of the English "Daily Telegraph", wrote of the ship as a Sovereign's facility dating from the time of the Stuarts.

He says that the first Royal Yacht was probably the "Mary"—a present from Amsterdam to Charles II. "In his diary," Nowell Hall continues, "Pepys, writing on 15th August, 1660, records that he visited Whitehall after dinner and found "the King gone this morning by 5 of the clock to see a Dutch pleasure boat below the bridge." The King, who in some quarters had the reputation of rarely spending a penny when a shilling would do, had at one time no fewer than 15 yachts in commission.

The Georges also had their Royal Yachts. George I came to England from Holland in the "Peregrine Galley", a small man-o'-war used as a yacht. In 1773 and 1781 George III reviewed the Fleet at Portsmouth in his principal yacht, the "Princess Augusta". There was the "William and Mary", built at Deptford in 1794, and sold in 1801. The next "William and Mary" lasted until 1849.

Queen Victoria carried on the tradition with the "Victoria and Albert", the third of which was succeeded, after many years, by the present "Britannia".

Built by Messrs. John Brown & Company Ltd., Clydebank, this vessel, with a full load dis-

The vessel is constructed in ⅜ in. marine plywood on frames, seam battened fore and aft on ¾ in. x 1½ in. spruce longerons. Main beams and cabin bulk-heads are box beams made up with ⅜ in. ply and spruce spacing timber. Stems, carlings, cabin roof beams, etc., are in mahogany. The mast is silver spruce. It has one wood centreboard in each hull, and twin drop rudders. Steering is from the cockpit with the two tillers connected by a cross bar.

The catamaran has a cutter rig, the sails being of terylene. It has a beam of 16 ft. and with centreboards down, a draught of 4 ft. 9 in. The sail area with working jib is 450 sq. ft.; alternatively with large jib it is 611 sq. ft. The vessel weighs about 4,000 lbs.

COMPAGNIE DES MESSAGERIES MARITIMES

Head Office in Australasia

36 GROSVENOR STREET, SYDNEY

'Phone: BU 2654

Regular Passenger and Cargo Services from Australia to France, New Caledonia, New Hebrides and Tahiti.

General Agents for

Cie de Transports Aeriens Intercontinentaux (T.A.I.)

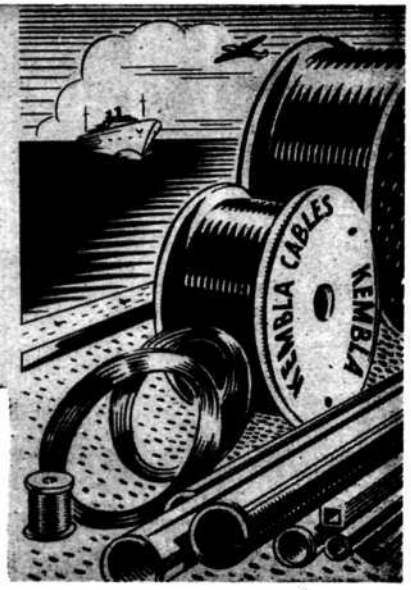
"KEMBLA"

COPPER, BRASS AND OTHER NON-FERROUS WIRE CABLES & TUBES

METAL MANUFACTURES LTD.

PORT KEMBLA, N.S.W.

SELLING AGENTS
(with Distributors in all States)



TUBES AND BRASS WIRE

KNOX SCHLAPP PTY. LTD.

Adelaide, Brisbane, Melbourne, Sydney, Launceston.

WIRE AND CABLES

BRITISH INSULATED CALLENDER'S CABLES LTD.

Melbourne, Albury, Sydney, Newcastle, Wollongong, Brisbane, Hobart, Launceston Adelaide.

JOIN THE NAVY LEAGUE

NAVY LEAGUE — I KEEP WATCH

The object of the Navy League in Australia, like its older counterpart, the Navy League in Britain, is to insist by all means at its disposal upon the vital importance of Sea Power to the British Commonwealth of Nations. The League sponsors the Australian Sea Cadet Corps by giving technical sea training to and instilling naval training in boys who intend to serve in Naval or Merchant services and also to those sea-minded boys who do not intend to follow a sea career, but who, given this knowledge, will form a valuable Reserve for the Naval Service.

The League consists of Fellows (Annual or Life) and Associates.

All British subjects who signify approval to the objects of the League are eligible.

MAY WE ASK YOU TO JOIN and swell our members so that the Navy League in Australia may be widely known and exercise an important influence in the life of the Australian Nation?

For particulars, contact The Secretary, 83 Pitt Street, Sydney, N.S.W.
or The Secretary, 443 Little Collins Street, Melbourne, C.1, Victoria

or one of the Hon. Secretaries at:

- Box 376E, G.P.O., Brisbane, Queensland
- 726 Sandy Bay Rd., Lower Sandy Bay, Hobart
- P.O. Box 90, Darwin, N.T.
- 30 Pirie Street, Adelaide, S.A.
- 62 Blencowe St., West Leederville, W.A.
- 60 Limestone Ave., Ainslie, Canberra, A.C.T.

placement of 4,715 tons, was laid down in June, 1952, launched in April, 1953, and completed in January of the following year.

With few structural alterations, the "Britannia" could, if it were unhappily necessary, quickly be converted to the war-time rôle of a hospital ship. The accommodation aft, now devoted to the Royal and State apartments and for members of the Royal Household and staff, would be adapted as the wards, operating theatre and the specialist departments; the helicopter platform would be used for the transference of "stretcher" cases. Working spaces, such as the galleys and laundry, all grouped amidships over the main machinery so that exhaust ventilation can escape through the single funnel would serve the needs of patients, the Naval medical staff and men. The accommodation forward, where now live the Royal Yacht's complement, could readily be adapted to the requirements of Merchant Navy personnel who would then man the ship. Incidentally, the "Britannia" has Denny-Brown stabilising fins to minimise rolling.

The ship is equipped to undertake long ocean voyages, and has a range of 2,400 miles at an economical speed of 15 knots. On trials her continuous cruising speed was 22.75 knots. She is a much more seaworthy and useful craft than her predecessor, the two-funnelled "Victoria and Albert", scrapped in 1954. Unlike the "Britannia", the old "Victoria and "Albert" was purely a Royal Yacht.

Unquestionably, the "Britannia" is now one of the most famous ships afloat. She is identified the world over with Britain and her much beloved and respected Royal Family. She is a symbol of Britain's prestige, and because she is associated with our Royal Family, she is a tangible link in the comity of nations. It would not be easy to contemplate an English sovereign "making do" without a Royal Yacht, or a nation content that he or she should do so.

I have watched the Royal Yacht at sea on many occasions. For instance, when the Queen was inspecting the Home Fleet—probably the last with the Home Fleet in its present form—at Cromarty two years ago; and when Princess Anne and Prince Charles sailed in her to Tobruk to meet their parents who were returning from their World Tour. One will not readily forget the impression made by the ship's arrival at Malta and Gibraltar on the way home through the Mediterranean, or when the ship came alongside with the Queen and Prince Philip smiling and waving on the bridge.

How immaculate the ship looked, and what a wonderful picture when she hove in sight! Her shining blue enamelled hull, her buff-coloured masts and funnel and white superstructure, the Admiralty flag at the foremast, the beautiful Royal Standard at the main and the Union Flag on the mizzen—all bright in the sunshine—these were lasting impressions. As the "Britannia" came alongside the quay at Gibraltar there were three unrehearsed incidents. The first, which amused the waiting crowds, was that Princess Anne stood on the sun-deck, pointing excitedly to the dock-side crane manœuvring the gangway into position and asking lots of questions of a tall sailor standing just behind her. The second was that, so mirror-like was her blue hull as the "Britannia" came up the harbour, that the subsiding white bow-wake was reflected in it. The third was that, when the yacht was alongside, a rating quietly leaned over the rail with a pot of enamel and deftly painted out a minute scratch on the hull. There is nothing second-rate about the Royal Yacht. This unobtrusive little action, which, as far as could be seen, anticipated an order, is typical of the efficiency of everybody on board and the pride they have in their ship.

This is an exceptional H.M. ship. Since commissioning, the yacht has steamed about 150,000 miles and has circumnavigated the globe. The Royal Coat of Arms on her prow and the Royal Cypher on her stern distinguishes her wherever she goes, as do her two saluting guns on the compass platform. One of the links with the past, and a reminder that the "Britannia" is the latest of a distinguished line of Royal Yachts, is to be found on the verandah deck. There is installed a compass binnacle from the nineteenth century Yacht "Royal George". It is now fitted with a gyro-compass card and repeater. In the wheelhouse, fitted to the modern steering system, is the wheel of George V's racing yacht.

Yet another link with the past is the very title of Flag Officer, Royal Yachts. It is a reminder of the days when the Sovereign had not one, but several of these vessels for his exclusive use. The present Flag Officer is Rear Admiral P. Dawnay. Incidentally, the holder of this post is the only Admiral in the Royal Navy who is directly responsible for the handling of the ship and the safety of all in her.

The full "Royal" complement is 22 officers, about 225 ratings and a Royal Marine band of 20. Officers normally serve in her for two years, but the ratings, who are volunteers from general service, can, after a period of probation, remain in the yacht for the rest of their service careers. When a "yachtsman" commits an

offence a preliminary investigation is held on board. If a case exists the man is forthwith drafted away from the yacht for disciplinary action. In the event of his leaving he is no longer entitled to wear the special uniform or the treasured cap ribbon bearing the words "Royal Yacht" separated by a crown. Nor can he wear again the rating's No. 1 uniform with its gold badges, a jumper tucked inside trousers creased down the sides and not in the normal R.N. "concertina" folds. All "yachtsmen" wear special lightweight shoes with their No. 1's. Royal Marines have white tropical uniform, not khaki.

Those serving in the Royal Yacht must observe a long-standing tradition of silence while at work. There is no internal broadcasting system and no piping. Orders are quietly given and obeyed and *no one runs*. While at Gibraltar, for example, I watched a Petty Officer on deck giving orders. He "talked" to a rating who was aloft by rapid hand semaphore signals. Incidentally, both were wearing soft-soled canvas shoes.

In past days, as can be seen from records at the National Maritime Museum at Greenwich, the complement included a Yacht Fiddler, but, no doubt, in the interests of tranquility on board and modern well-oiled efficiency, he was cast over the side long ago! For the record, the post has now lapsed."

They could probably furnish a fiddler in Torres Strait. Anyhow, "Britannia's" return some day is looked forward to by all—especially by that spinner of good yarns, the skipper of the Government Patrol Vessel, whose home fort is T.I.

SEA CADET NOTES

In Victoria, the Sea Cadet Colour was transferred from T.S. "Bendigo" to T.S. "Avalon" at Geelong Grammar School on 12th July, 1959. The Reviewing Officer on this occasion was the Naval Officer-in-Charge, South East Australian Area, Captain G. L. Fowle, D.S.C., R.A.N.

Training Course at F.N.D.

A course of closer units will be held this month at the Flinders Naval Depot.

Empire Training Course

Leaving Sydney on 15th January next year, M.V. "Wanganella" will carry two Cadet officers and twenty-two Cadets to an Empire Training Course to be held in New Zealand. Cadets will be drawn from Divisions in every State, and will be chosen from those who are not less than 16 years of age. They must have passed for the rating of Cadet Able Seaman.

PAY AS YOU EARN

An unusual oil deal transacted off the coast of Western Australian is reported by the "Petroleum Gazette".

Bound for Kwinana from Melbourne to load diesel fuel, the 12,000-ton tanker "Thornaby" found the Fremantle-based crayfishing boat "Sputnic" adrift with a broken fuel line and empty tanks. The *unladen tanker had not a drop* of fuel to spare herself, but later in the day she sighted the 3,900-ton freighter "Bulwarra" and put the problem to her.

"Sputnic's" payment? To quote third mate Ray Kinsel—"a nice feed of crays!"

Coastwatcher's Memorial

(from page 10)

in itself a guarantee that the white man whom the natives had known in peacetime had not forsaken them. In many cases, the natives rallied to these ragged detachments of Europeans who were cut off and entirely on their own. Skilled in bush tactics and afraid of no one, parties of natives led by European coastwatchers caused many casualties amongst the Japanese. These mixed groups were feared and hated by the enemy, but amongst themselves a mutual respect grew out of close association, which by and large has carried over into the days of peace.

Simogun Peta, B.E.M., a native policeman in pre-war days and a jungle fighter of note with the coastwatchers, is one of the three nominated native members of the Papua-New Guinea Legislative Council, serving the cause of his countrymen as surely now as he did in time of war. Scattered about the Territory there are others like him: getting older but proud to display their medals when the occasion offers.

Built by public subscription, there are some well known names amongst the subscribers. One of them is the Vice-President of the United States, Mr. Richard Nixon, who served as a U.S. naval officer in the Pacific. Another is the late Admiral "Bull" Halsey, U.S.N., who made the remark on one occasion that it "was the coastwatchers who saved Guadalcanal and Guadalcanal which saved the Pacific."

"Watson" Shows Its Wares

HIGHLIGHTED by the marking of the site of the new chapel by Rear Admiral Farncomb, C.B., D.S.O., M.V.O., assisted by the Mayor of Woollahra, Alderman A. D. Frost, the naval establishment, H.M.A.S. "Watson" was At Home to the public on 9th August.

"After leaving your car in the Car Park which, incidentally, is the Helicopter Landing Ground" the visitors were informed, a varied programme included displays of Anti-Submarine Mortar Firings, besides an act turned on by naval frogmen who cleared an "enemy" beachhead in Lady Bay, and later gave a demonstration of how steel plates are cut under the waterline, on occasions when a vessel has been damaged in action and requires immediate repairs.

It was an occasion with a purpose. "Watson" is building a chapel, a stage in which was reached when the Lieut.-Governor of N.S.W., Sir Kenneth Street, lit the Cross which will be illuminated *nightly until the goal* of £27,000 needed to build and equip the chapel has been achieved. The chapel will serve the spiritual needs of the living, and at the same time perpetuate the memory of those men of the R.A.N. who died fighting to preserve the *freedom which the country* still enjoys. They gave all they had; those of us who remain must give what we can.

Something of what goes on there in a working day was shown to the public, who must surely have been made aware that the Navy not only devotes its attention to the physical development and technical training of the young sailor, but also accepts responsibility for the care and character-building of those who wear a naval uniform. It is on that account that "Watson" is building a chapel, and now asks the support of all who have the welfare of the Service at heart.

A GRAVEYARD OF SHIPS

(from page 20)

able of a speed of 12 knots. After 45 years of faithful pilotage service, during which she achieved many creditable rescues, as well as performing valuable fire and salvage work, this, the second of the "watch-dogs of the Heads," vacated the berth at the buoy in Watson Bay in favour of the third ship to bear the name. Her fine figurehead removed and renamed "Captain Phillip," this veteran rendered further service as a training ship for the Australian Sea Cadet Corps, and later for personnel of the Australian Army Water Transport Section.

In October, 1947, having outlived her usefulness, she reluctantly followed the diesel tug "Boray" outside the Heads at the end of 720 feet of towing hawser, where the firing of a charge of 20 pounds of gelignite sent the yacht-like little ship to grace the realm of King Neptune, 100 fathoms below.

In all, some 80 ships have joined this ghostly assemblage of once staunch craft, proud handiwork of shipwright and builder and cherished commands of zealous masters and naval officers. There, untroubled by the shrieking of the winds or the pounding of the seas, they rest "beneath the waves, hard by their native shore."

CORROSION

Zinc provides economical control of corrosion by means of:

METALLIC ZINC COATINGS—ideal protection for iron and steel by:

hot dip galvanising ● electrogalvanising ● metallising ● sherardizing

ZINC PIGMENTS—in metal protective paints:

zinc dust-zinc oxide paints ● zinc chromate paints ● zinc-rich paints

High grade Electrolytic Zinc (guaranteed 99.95%) is produced by

ELECTROLYTIC ZINC COMPANY OF AUSTRALIA LIMITED

390 LONSDALE STREET, MELBOURNE

MOMENTS IN HISTORY

THE FLAGSHIP GETS THE NEWS

A STEWARD turned the wireless off; the Commander called for a second cup of coffee and the war was done. In the wardroom of H.M.A.S. "Shropshire" we had just heard the Prime Minister of Great Britain announce that Japan had surrendered unconditionally but, when someone at the Sub's table made a witless crack, a dozen pairs of eyes glanced coldly at him from above the dog-eared papers that were two months old. The Navy seldom talks at breakfast.

Of course, it was not altogether unexpected. A week, a month or two; no one knew when it would come, but it was evident that Japan could not take the aerial pasting she was getting now, and orders to deal with this or any other eventuality were already out.

If the enemy threw in the towel, the Royal Australian Squadron was to "pipe down" for the day. Nothing but essential jobs were to be performed, and now it looked like a Sunday dog watch. Sailors flopped where they stood; to sleep, to yarn spasmodically about this "after the war" business that was reality at last. Unbelievably, it had caught us in the Philippines on a windless morning that promised heat.

Away in the distant reaches of Subic Bay, a couple of merchantmen were disposing of a few smoke floats. Here and there coloured flares were trying to make their presence felt against a stronger sun but, for the most part, people were thinking of what the day would mean at home. A lot of them were writing letters.

On the messdecks there was a special dinner of the turkey and ham variety, with a bottle of beer for every man. In the wardroom the officers entertained the stewards, and while this was going on the duty boat was called away to cut greenery ashore. You could tell that something was in the offing, because the electricians began to loop the place with something no one but the older hands had even seen. Questions as to how these strings of coloured lights came to be on board at all were met with studied silence. If the Squadron was to be At Home to the officers of the British and American ships with whom we lay in company, it was to be the sort of party that carried with it all the fixings of a peacetime show.

Greenery and fairy lights filled in the awning stantions, while far overhead the outline of a huge kangaroo was picked out in coloured globes. There was blood in that animal's eye if a scarlet bulb meant anything. It was just the touch the evening needed.

As the sun went down, the beams of searchlights joined hands with others thrown up from Manila fifty miles away. Flares of various colours traced cascades of light against the loom of Luzon hills. The whole code of visual signalling was in the air at once, as guests began to arrive.

It was a good party by any standard. It was not the eats or the drinks. It was not the blokes from the R.N. submarines, or the half-dozen nursing sisters from the British hospital ship "Oxfordshire," or the strains of "Old Towler," the regimental march of the Shropshire Light Infantry, that had become the theme song of the ship as well. None of these things made the occasion by themselves, but together they harmonised with a lovely night made brighter still by the reflections of the lights across the water. There was no black-out *now*. This was *the* beginning of a saner world.

The guests were in great variety. There was someone from Sussex discussing farming with someone from the Middle West, while someone else chipped in knowledgeable comments on a sandwich filling of Australian cheese. Most sentences began with "do you remember . . . ?" And memory proved endless.

Commissioned into the R.A.N. in April, 1943, to take the place of H.M.A.S. "Canberra," lost by enemy action in the Solomons a year before, "Shropshire" had steamed 364,000 miles by the time she reached the Pacific. Of that, 220,000 miles had been covered since the beginning of the war.

As a unit of a U.S. Task Force, the ship took part in eight major landings, and had been well in the van during that high speed night action in Surigao Strait, when the Japanese Fleet made a last despairing throw. On that occasion, "Shropshire" fired 836 shells from her main 6-inch guns, leaving her mark on the doomed battleship "Yamashiro." While not strong in numbers, Australia was certainly there, for in the torpedo attack that developed, one of our "Tribals" had to be ordered back as she was fouling the range!

A succession of thumbnail sketches that could be amplified for hours, there was lots to talk about and laugh over. True or not, someone was bound to mention the time when, hard on the heels of the Japs, the Task Force commander politely asked whether "Shropshire" could make the speed. Later, he instructed the ship to keep station when she was drawing ahead, and that signal was not nearly so polite. *The Americans never took* those triple funnels seriously.

There was nothing serious about this party either. There was a general atmosphere of fun and games, and even a bit of gate-crashing. Unnoticed at the time, two intrepid souls who had eaten that "special" dinner on the messdecks at noon, believed that it put them in the promotion zone as well. Borrowing the trappings of wardroom rank they were having the time of their lives, until "Flags" passed the word that the Commodore would be greatly displeased if those two young officers did not remove their caps. That was a bad break, but worse was to follow, for the eye of authority now fell upon them. The game was up and, in a subsequent function in which the Captain was involved, conversation proceeded on these lines:

"Have a good time?"

"Yes, Sir."

"I'm glad you thought it was worth it. The mess share is sixteen shillings and eight pence, and the Treasurer will receive your contributions as soon as it's convenient."

What a scandalised Jaunty said when he saw a formal receipt made out on the ship's notepaper is not recorded. What could he say, when it was made out to "Temporary Honorary Lieutenant (E)....."

But with a rancher from Texas performing lariat tricks with a boat fall, and an international glee party making the night hideous elsewhere, all this passed unnoticed at the time. As has been said, it was a good party; one that only finished when the last guest had flung his cap over the side and jumped overboard to rescue same.

But it was not so good next morning. Eggs and bacon had the queerest taste, and there was a hasty retreat behind the breakfast newspapers, as the band struck up "Old Towley" and a heavy-footed guard marched overhead to Colours. Even the kangaroo seemed to think the noise unnecessary, for he too leant with a slightly jaded air against a bulkhead. He was all right, though — and so was the Squadron.

WATSON & CRANE PTY. LIMITED

- ***MANUFACTURERS & DISTRIBUTORS of***
  All Standard and Special Brassware Fittings, including the "WATCRANE" Spring Cock, for the Plumber and Hot Water Engineer.
- ***SUPPLIERS of***
  Full range of Gunmetal, Cast Iron and Steel Valves for Water, Air, Oil and Steam; Baths, Basins, Lowdown Suites, Heaters and "IDEAL" Hot Water Boilers.
- ***ELECTROPLATING SPECIALISTS in***
  Chrome, Silver, Nickel, Cadmium and Tin.
- ***FOUNDERS of***
  Non-Ferrous Castings and Hot Pressings, etc., in Brass, Gunmetal, Phosphor Bronze, Aluminium Alloys.
- ***DIE MAKERS***

WORKS AND FOUNDRY:
Fairfield Street, Villawood, N.S.W.
'Phone: YU 7171

WAREHOUSE:
1037-1047 Bourke Street, Waterloo, N.S.W.
'Phone: MX 5761

THE A.I.B.

"Spy Ring Pacific," by Allison Ind. (Weidenfeld & Nicolson, Aust. price 26/-).

A WELL qualified writer tells of some of the activities of the Allied Intelligence Bureau during World War II. As Deputy Controller, Colonel Ind had a front seat and his book has the ring of authenticity.

Some of the actions he writes about will be familiar to many, particularly those of the Coastwatchers, who were mostly Australians. But there is much that is new in accounts of various parties inserted by submarine into the Philippine Islands.

In this type of unorthodox warfare, only meticulous preparation will bring results. The Coastwatchers in the Solomons are a case in point. The author traces their growth back to 1919, when Captain C. J. Clare, R.A.N. organised planters and officials into a chain of observation points throughout Pacific Islands coming within the boundaries of the Australian Naval Station. The dividend paid is now history.

At the other end of the scale, parties of insufficiently trained men suffered disaster. Col. Ind tells, for example, of the ill-fated attempt to insert a watcher station into Mindoro Island in the Philippines.

Of necessity, the author paints a loosely knit picture, taking isolated instances of intelligence work that ranged over the vast Pacific theatre for almost four years. The complete account has yet to be written, and one hopes that Col. Ind, or someone equally well informed, will some day attempt the task.

Despite its occasional lapse into a somewhat precious style, Col. Ind's book makes fascinating reading, and is a must for any student of the Pacific War. It is particularly refreshing to read of the close and amicable co-operation between Allies (to whom Col. Ind pays a handsome tribute) which in a very real way contributed to the undoubted success of A.I.B.

—A. K.

* * *

FREDOM FICTION

"A Kind of Fighting," by Patrick Cruttwell (Dent), Aust. price 18/9.

This is not everyone's book, but Patrick Cruttwell at least does something to explain why countries, regarded before the war as contented and prosperous members of a British Commonwealth, suddenly elected to go their own way in a blaze of nationalism.

In the form of a narrative told by an English teacher in a university in a thinly disguised part of South East Asia, the story follows the development of one of his pupils. In the 'thirties this lad began to read the works of Marx, Laski and the productions of the Left Book Club. He was groping for something even then and, with the coming of the Japanese, it seems natural to discover him as the commander of a local "Freedom Army," who in the end becomes the leader of his country in the first stage of its independence.

It's not a nice story; there are too many uncomfortable undertones. But it is a brilliant bit of characterisation written by a man who knew the place and the people both in peace and war. If such words as "loyalty" and "patriotism" take other meanings, it is because shifts and betrayals on both sides were "the kind of fighting" that the time demanded. Like it or not, there are implications here that anyone can see.

—B. H.

* * *

BALTIC CRUISE

"Vikings' Wake." By Richard J. MacCullagh. (Van Nostrand.)

For those to whom the Baltic is an enchanted sailing ground —and this reviewer is one of them—this book is a "must". It tells the story of the author's cruise in his "Maid of Mourne", a Bermudan sloop which he bought after the war in Germany, from Flensburg, up through the Belts and Sound and Kattegat, down the Skagerrack, along the coast of Jutland, and home across the North Sea. This, however, is putting the story baldly for the author, besides being able to sail, can also write. And besides being able to write, he can also draw. And, moreover, if it was his camera that took the photographs, he can add the claim of being a first-rate photographer to his other accomplishments.

All this adds up to a truly delightful book, one to read and to treasure. And as if this were not enough, Mr. MacCullagh adds at the end of each chapter a batch of relevant pilotage notes which are a model of clarity and conciseness. More often than not, 40 shillings as the price of a book puts it out of court for a large number of readers, but here is a case where two pounds is not too much to pay, for this is indeed a book which stands out boldly and challengingly among the mass of literature which this sport of sailing attracts.

P.K.K.

* * *

UNFOUNDED RUMOUR

"The Mystery of Lord Kitchener's Death." By Donald McCormick. (Putnam).

On the afternoon of 5th June, 1916, only five days after the battle of Jutland, F.M. Earl Kitchener of Khartoum, The Secretary of State for War, sailed from Scapa Flow in H.M.S."Hampshire," on the first stage of his mission to Russia. Some three hours later Hampshire sank off the west coast of Orkney with the loss of her famous passenger and all but 12 of her company.

The sudden death of a national hero, the circumstances of the disaster and the subsequent reticence of the Government in answering questions on the loss soon gave rise to wild rumours and speculation which continued for many years.

After a brief description of the sinking (in the best style of "A Night To Remember"), the author proceeds to an intriguing analysis of these rumours and we are soon plunged into a World War I spy story fully reminiscent of the exploits of Sir Edward Hannay. Mr. McCormick has clearly been to great lengths to examine every source of material and has interviewed those still alive who played any part in these events. The result is an interesting, and at times exciting, narrative, rounded off by a clear and balanced conclusion. Mr. McCormick has some hard things to say about the Navy and although his criticisms of the naval authorities in Orkney on that fatal night may seem to be justified, many will object to his attack on Jellicoe. Lack of security, poor staff organisation and inadequate appreciation of the available intelligence are the main reasons why "Hampshire" was routed through a possible minefield; and although any Commander-in-Chief must take his share of blame for these short-comings, he cannot be held personally responsible for their results, however fatal.

M.G.C.

* * *

LITTLE SHIPS

H.M. Small Ships." By Warren Armstrong. (Muller.)

The story of Coastal Forces is an inspiring one, as all stories of fights against odds must be. One has only to think of some of the major operations in which they played a part—Zeebrugge and Kronstadt in the first World War, Dunkirk and Normandy in the second—to say nothing of the host of smaller actions, to realize the tremendous part they played in the story of the naval war. More often than not, particularly in the Channel and North Sea actions against enemy E- and R-boats, they had to fight heavily outnumbered.

Mr. Armstrong, in his account of them, has adopted partly a factual and partly a fictional method of telling something of their story. One could have wished for the wholly factual method; in an account which is presumably meant to be historically accurate, imagined conversations are out of place and can only detract from what otherwise could have been an interesting story. Few of these conversations, moreover, run true to form; there is a slickness about them that suggests the journalist rather than the naval man.

—C.C.M.

ST. NAZAIRE

"The Greatest Raid of All," by C. E. Lucas Phillips (Heinemann, Aust. price 23/-).

Five Victoria Crosses were won as a result of the raid carried out on the French port of St. Nazaire in March, 1942, by a mixed force of 611 British navy and army personnel. No need, therefore, to stress the nature of an undertaking that put the 1,148-foot Normandie Dock out of action for the rest of the war, thus denying a refuge to the German battleship "Tirpitz," the most powerful warship in the world.

What Lucas Phillips has written is an unforgettable story of one of those combined operations that have appeared in modern text books. It was the First War raid on Zeebrugge over again, with the important difference that spectacular results were achieved with a handful of men. To some it is the personal problems of these men that will appeal. Others may find more interest in the staff work that led to the ramming of the dock cassion by the old U.S. destroyer, re-named H.M.S. "Campbeltown," carrying 4½ tons of explosive fused to detonate after eight hours' delay. Commando troops engaged had the additional task of demolishing essential dock facilities. That only took half an hour.

Like most effective wartime enterprises, success was due to a number of different things, but principally to the courage and determination of the men concerned. Given the code name of "Chariot," the Chief of Combined Operations, Earl Mountbatten, says of this episode that "of all the operations with which I was concerned, this is the one I am most proud to have been associated with." The reader will share his pride. —B. H.

Model of Chapel on Display

W.R.A.N. Sylvia White, of H.M.A.S. "Watson" and R.A.N. Chaplain the Rev. J. Trainer are inspecting the model of the proposed chapel to be built at Watson's Bay. Built to a scale of ½ an inch to the foot, the model will be on display at H.M.A.S. "Watson" on October 5, and at Garden Island on October 10.
—"S.M. Herald" photo.

A New Sextant

◆

OF interest to all sailors is a new type of sextant described in "Guild News" the official organ of Merchant Service Guild of Australia. From this it learned that Collins Radio of Iowa, U.S.A., has announced the development of a radio sextant which it claims can track the moon and the sun continuously under all weather conditions.

Dr. Gene Marner, head of the company's radio-astronomy group, said the importance of the sextant lay in its ability to pick up extremely weak signals from the moon.

Present sextants required a clear sky to obtain a "fix" from the moon and stars, but the radio sextant could track both the moon and the sun under all weather conditions.

Dr. Marner said that when using the radio sextant, approach to fog-bound ports would be easier.

In wartime, ships could rendezvous at any point with complete radar and radio silence.

The sextant uses a five-foot parabolic dish type antenna and the most sensitive receiver of its type ever construced.

A research official, Dr. David McCoy, said secret experiments since late last year had yielded the first continuous tracking of the moon in history.

Sandblasting the hull of a big liner in the port of Sydney

Sandblasting and chemical inhibiting of ships' plates has brought a new era to ship's husbandry . . the most positive, flexible and economical means of removing rust and the old paint that tends to hide the inroads of erosion. The speedy and lasting process we apply in the port of Sydney to vessels of all kinds rates higher in ships' maintenance than any other form of rust elimination.

MARITIME MAINTENANCE PTY. LTD.

ANTI-CORROSION ENGINEERS — SANDBLASTERS SHELL HOUSE, CARRINGTON STREET, SYDNEY

FOR SPEEDY DELIVERY

WILHELMSEN LINE

Modern fast cargo liners operating regular fortnightly service direct from Continental Ports to Australia via Suez—and return via the same route.

AUSTRALIA—WEST PACIFIC LINE

Modern cargo liners operating a regular service from Japan to Australia—and returning via Manila and Hong Kong.

Regular fast service from U.S. Atlantic Coast Ports and Gulf Ports to Australia via Panama—and return—via the same route.

AMERICAN PIONEER LINE

Fly SAS

S.A.S. introduces the "40-minute travel hour" with new CARAVELLE jetliners and cuts flying time by a third. S.A.S. now serves more cities by **pure jet** than any other airline. Reservations now open: book now and fly S.A.S.

SCANDANAVIAN AIRLINES SYSTEM

WILH. WILHELMSEN AGENCY PTY. LTD.

30 Pitt Street, SYDNEY
Phone BU 6301

William Street, MELBOURNE
Phone MA 3031

Printed by Shipping Newspapers Ltd., 16 Bond Street, Sydney