THE NAVY

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Vice Admiral Sir William Creswell, K.C.M.G., K.B.E.

IN April, 1933, died the man who more than any other will always be associated with the Royal Australian Navy.

Sir William Creswell retired from the Royal Navy in the rank of lieutenant, and in that rank was gazetted into the South Australian Defence Force in 1885. It was a significant period in the country's affairs. The initial stage of separate defensive arrangements was closing, and one of the duties of the new C.-in-C., Rear Admiral Tryon, was to open negotiations with the State Governments, with the object of formulating a scheme of naval defence acceptable to Australian feeling as well as to the requirements of Admiralty.

The immediate result was an Auxiliary Australian Squadron of five cruisers and two torpedo gunboats. The new ships arrived in 1891, the same year that Creswell attained the rank of Commander. Appointed to the Queensland command in 1900, a wider sphere grew still more enlarged with the coming of Commonwealth Government, and the ultimate transfer of State naval forces to unified control.

As an interlude in what was to become years of administrative work, it fell to the lot of Captain Creswell as Senior Officer of the Australian naval forces, to take command of the old South Australian gunboat "Protector", which, manned by personnel from New South Wales and Victoria, was specially commissioned in the Royal Navy for service in China. Together with the three new cruisers and a naval landing force, this was Australia's contribution to the "Boxer" uprising.

Much was to happen in the next five years. The old Naval Defence Act of 1887 expired and was replaced by an agreement to subsidise a Royal Navy squadron in Australian waters. The Commonwealth Defence Act came into being in 1904, when Creswell was given command of the Commonwealth Naval Forces, and, when Navy Board was re-constituted in 1911, there was only one logical choice for the position of director.

> **"GUARDED WITH SHIPS AND ALL OUR SEA OUR OWN" —**
>
> Edmund Waller.

Thus far and in all that followed, Creswell's singleness of purpose gave him standing in a situation that was always fluid. Many distinguished officers devoted thought and energy to working out the part Australia and New Zealand were to play in Empire defence, but, for the most part, they were officers of the Royal Navy temporarily attached. Creswell's value at this time lay in his permanence. A man with the same background as the others, he thought along the same lines, and could still be depended on to harmonise proposals that at times did not agree.

In the years leading to the First World War, Creswell's direction of naval affairs was largely responsible for providing the Commonwealth with a first line Fleet made up of a battle cruiser, three cruisers and a number of destroyers. In support was a comprehensive range of smaller ships and establishments, which included a Commonwealth Dock at Cockatoo Island, a Naval College and boys' training ship. Work was beginning at Westernport; there were depots and W/T installations as good as the best, and out of all this was growing the pool of trained men who make a fighting service.

It was a respectable effort by any standing, and one unlikely to be duplicated in any part of the British Dominions. When Vice Admiral Creswell stepped down in 1919, the Royal Australian Navy had become an integral part of the nation's life.

MAN AND MACHINE

Writing in "American Aviation", the American Assistant Secretary of the Navy (Air) said that among the principal elements of Navy striking power are the attack carrier forces and the amphibious groups, tailored for action in a limited war. The manned aeroplane will continue to be essential to these forces. There is no weapon development in sight which will replace the piloted attack aeroplane for precise discriminating delivery of the needed fire-power under changing tactical situations and in support of troops. In nearly every facet of naval operations we see now and foresee in the future, the manned aeroplane is an ever-important link in the chain of naval strength . . . "

LOOK TO YOUR MOAT

FOR centuries Britain's strength has been that of an island fortress. Attack could only come by sea or air, but invasion was impossible while the Royal Navy commanded the moat surrounding Britain's shores. Writing in the "Sunday Times" (London), Sir Arthur Bryant examines the present situation against the background of the past, in that thought-provoking manner that makes him one of England's great contemporary historians.

"The first article of an Englishman's creed is that he believeth in the sea," wrote the great Lord Halifax. In quoting that remark, Sir Arthur says that rich and poor accepted this as axiomatic. They never forgot that their security, wealth and liberty depended on their Fleet being able to bar the narrow seas. However starved of men and arms the Army may be, the Navy was never kept short. When, in the heyday of triumphant Liberalism, the Kaiser made his injudicious bid to outbuild the British battle fleet, the slogan "We want eight and we won't wait" swept the country. For when it came to the test the whole nation subscribed to the words enshrined for 500 years in the Articles of War: "It is the Navy whereon, under the good providence of God, the wealth, safety and strength of the kingdom chiefly depend."

By
SIR ARTHUR BRYANT
in
"The Navy"

It was behind this moat of sea power that the British love of freedom grew. It enabled us to avoid centralisation and develop a policy unattainable by those who live in constant danger, in which authority is exercised only after full debate, and subject to the right of every man within lawful limits to criticise and oppose the Government.

Nor has it been Britain's liberties alone that have depended on her control of ocean. Sea power cannot be used to conquer the world, but it can be used to prevent any one Power from conquering it. Twice in our lifetime British command of the seas has stopped a seemingly omnipotent military despotism from imposing its rule permanently on a vanquished Europe. On the second occasion, in 1940, the Navy needed the help of the Royal Air Force, yet, with its aid, performed the same fundamental service as in the days of the Kaiser, Napoleon, Grand Monarque and Philip of Spain.

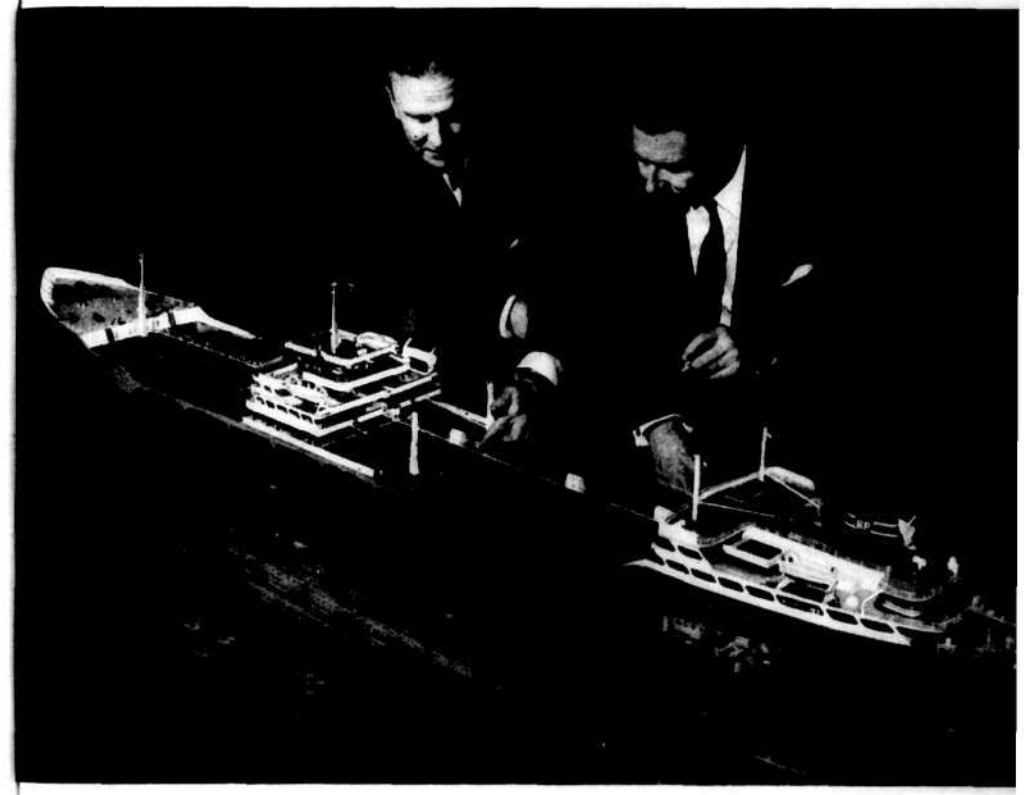
The coming of the air weapon changed, at least temporarily, the means of commanding the seas; but it changed in no way the need to do so. Never in our history has sea power mattered so much as in 1939-45. Fortunately for the world's liberties and our own, both in 1914 and 1939, ill-prepared as we were in other ways, we had at least the wisdom to retain the means to guard the sea.

We do so no longer. Our Navy is weaker to-day than at any time since the Dutch sailed up the Medway after England's rulers had economised by laying-up the battle fleet. This year it will consist of three aircraft carriers, six cruisers, 24 destroyers and 30 frigates in commission; by 1960 it will be still smaller. Nor is it even adequately modernised; neither the first escort vessel with missile projectors nor the first nuclear-powered submarine has yet been laid down.

All this is due to many causes: to the exhaustion wrought by two world wars, to reliance on the air weapon and on the U.S. and N.A.T.O. navies, and to a general weariness of electors at bearing global burdens.

(Continued on page 21)

"BRITISH DUCHESS" IN MINIATURE



Shown above is a model of the "British Duchess", one of B.P. (Australia) Pty. Ltd.'s latest tankers. Built to a scale of ½ inch to the foot, the fibreglass and plastic model was made by Mr. Michaelson, the originator and presiding genius of the H.D.M. Model Co., Victoria. Employed for a number of years by the Department of the Navy in the Naval Construction Branch, Mr. Michaelson now makes his hobby a full-time business. Besides orders from the British, New Zealand, Indian and Pakistan navies, his cut-away models are used by the R.A.N. for training purposes. Models have also been made for the Orient Line, Shaw Saville, Lloyd Triestino and other commercial shipping lines. The model of the "British Duchess" was forwarded to London recently in "Arcadia", and forthcoming models of Mr. Michaelson's are to be six ⅛ inch scale versions of the "Iberia" to be used for publicity purposes in Australia.

But the chief cause of our decline at sea is a conviction that we cannot afford both a Welfare State and the insurance premium for defending it, and that the atom bomb—the ultimate deterrent—makes war impossible and a fleet superfluous.

This conviction may prove an illusion. It is not shared by Russia, who since the war has built up a fleet of more than 40 cruisers, 150 destroyers and 500 submarines—a far more formidable threat to our food supplies and trade than the Navy faced in either the first or second world wars. Since this great armada cannot exist merely to defend Russia, it can be for only one purpose: to intimidate an island nation that depends on the sea. Half our food comes from across oceans, and the whole of our oil supplies; with the Atlantic trade routes lost, we should be as helpless as Japan in 1945.

Nor, in such an event, would the possession of the ultimate deterrent afford us much comfort. If nuclear weapons can destroy Russia, they can destroy Britain. At what point in a conflict in which our enemies used sea power against our trade routes and refrained from atomic war should we resort to the deterrent, knowing that the inevitable retaliation would wipe out our cities and civilisation?

Yet the opportunities for a new model at sea have never been greater. The advent of the nuclear-powered submarine and the voyage of the "Nautilus" herald a greater revolution in naval affairs than the change from oak to iron and sail to steam. It is one in which a Britain true to her sea traditions and destiny can share. We cannot be strong both on land and sea; we must return to the rule that in the past made us "rich, free and quiet."

To-day sea power is not exercised by ships alone; a close link between Royal Navy and R.A.F. is now imperative. Yet the first duty of both is to guard the seas that are our gateway and lifeline. While Russia has the ultimate deterrent, its possession by the West is essential. But for Britain, dependent on the passage of the seas, it is not enough. To the question, "What shell we do to be saved in this world?" there is no other answer but this, "Look to Your Moat."

As for the deterrent itself, a nuclear-powered submarine is less vulnerable than any launching site and, being able to strike from any point round an aggressor's seaboard, presents a harder threat to parry than batteries of rockets or squadrons of bombers. It fulfils Nelson's definition that the best defence for the country is to lay one's ships against the enemy, and enables its possessor, in Drake's words, "to seek God's enemies and Her Majesty's where they may be found."

New Honorary Commodore, R.N.R.

HER Majesty The Queen has been graciously pleased to approve the appointment of His Royal Highness The Duke of Gloucester, K.G., K.T., K.P., G.C.B., G.C.M.G., G.C.V.O., as an Honorary Commodore in the Royal Naval Reserve with effect from November 1st, 1958.

The "warmest congratulations" of the officers and ratings in the Naval Reserve on his appointment have been conveyed to His Royal Highness by Vice-Admiral W. K. Edden, C.B., O.B.E., Admiral Commanding Reserves. In his reply the new Commodore said that he deeply appreciated the message and that he was honoured to become a member of the Royal Naval Reserve.

The rank of Honorary Commodore in the Royal Naval Reserve was established by Order in Council in April, 1915. Sir Richard Williams-Bulkeley, who as an Honorary Captain, R.N.R., was in command of the Naval Depot at the Crystal Palace, was then appointed to that rank. After World War I, the rank was granted to a limited number of Senior Captains of the R.N.R in recognition of particularly good service. H.R.H. The Duke of Gloucester was appointed Honorary Captain in the Royal Naval Volunteer reserve in May, 1937.

BOARD EXPRESS APPRECIATION TO RESERVES

THE amalgamation of the Royal Naval Reserve and the Royal Naval Volunteer Reserve became effective on November 1st. To mark the occasion, the following message to the Fleet has been issued by the Board of Admiralty:

"The unification of the Naval Reserves affords Their Lordships a welcome opportunity to express their appreciation of the services rendered in the past by the officers and ratings of all branches of the Reserves, both in war and peace.

"Their Lordships are confident that the fine spirit of volunteer service shown in the past will continue to increase as a result of this new partnership and that the re-organised Royal Naval Reserve will grow in efficiency to meet the ever-changing needs of modern warfare."

QUEEN'S COLOUR LAID UP IN THE ADMIRALTY'S PARISH CHURCH

ON November 6th, on Horse Guards Parade, and in the Church of St. Martins-in-the-Fields was enacted the final chapter in the 200-years-long history of the East Indies Station. First the Colour with Guard and Royal Marine Band was paraded before the hundredth and last Commander-in-Chief of the Station, Vice Admiral Sir Hilary Biggs, K.B.E., C.B., D.S.O. After the inspection the Guard, with bayonets fixed, escorted the Colour into St. Martins-in-the-Fields, there to be laid up in perpetuity in what is traditionally the parish church of the Admiralty.

In the congregation were no less than nine former Commanders-in-Chief of the Station and six members of the Board of Admiralty, including the First Lord, the Earl of Selkirk, who read the lesson, and the First Sea Lord.

After the singing of the sailors' hymn "Eternal Father", the Queen's Colour of the East Indies Station, borne by a lieutenant marching at the slow and escorted by two leading seamen and a chief petty officer, was brought to the chancel steps, where it was taken by Vice-Admiral Biggs. As the escort presented arms, the Admiral slowly bore the Colour to the altar rails and there delivered it to the Vicar, the Reverend Austen Williams, using the time-honoured words,

"Reverend Sir, this, the last of the Queen's Colours carried in the Services of the Queen's Commonwealth by the East Indies Station, Royal Navy, I now deliver into your hands for safe custody within these ancient walls."

The first naval ships were sent to the East Indies in 1744 at the request of the Honourable East India Company. In command of them was Commodore Curtis Barnet, first of one hundred officers, including such famous names as Boscawen, Vernon, Byron and Cornwallis and more recently Sir James Somerville, to command the East Indies Station.

The flag of Admiral Biggs was hauled down on September 7th and at that moment the Command, which embraced northern and central parts of the Indian Ocean and the naval bases at Trincomalee, Bahrein and Aden, ceased to exist. Its responsibilities are now divided between the Commanders-in-Chief of the Far East and the South Atlantic and South America Stations and the Commodore ot the newly-formed Arabian Seas and Persian Gulf Station.

THE BLUE ENSIGN

THE least common of the group, the Blue Ensign is one of three Ensigns that may be worn by British ships. The White Ensign is worn by all H.M. ships in commission; the Red Ensign by all British ships except warships in commission, and those allowed by warrant to wear special Ensigns.

Qualifications for this warrant have recently been changed. By Admiralty Regulation, merchant ships of the British Commonwealth may apply for a warrant to wear the Blue Ensign when a minimum of two naval reservists comprising the master and one other officer are carried. Hitherto, the number was five, consisting of the master and four other members of the crew.

The amended regulation applies to officers of any rank or branch on the retired and emergency lists of the Royal Navy or other Commonwealth Navies, and to active and retired officers of these Reserves.

Some interest attaches to these Ensigns, for they date from the 17th century, when Fleets of the Royal Navy were known as red, white and blue squadrons, and distinguished by a flag of appropriate colour. The system was abolished in 1864.

MOMENTS IN HISTORY

(Contributed)

SOMEONE felt that the Service had been silent long enough. Somebody with a little gumption came to the conclusion that a small news sheet would interest and amuse all hands. And so "DIT . . . the R.A.N. Bulletin" was born on a monthly basis. The first issue is in front of me. It is dated September, 1944.

Put together by the staff of the newly-created Naval Information Section, I've always believed that "DIT" had milestone status. So far as I'm aware, authority to publish was the first admission that there might be something in that new-fangled nonsense called Public Relations.

The name itself was the outcome of a lot of head-scratching. You've guessed it . . . we spun it . . . and, finally, we had to sell it. Fortunately, the then Chief of the Naval Staff, Admiral Sir Guy Royle, was on our side, and to him the venture owed a great deal. In wishing "DIT" success on its maiden voyage, the Admiral hoped that something larger would come out of "these modest beginnings."

They were modest enough. There was very little money to play with. Not much newsprint either, and no easy means of getting at what talent might be spine-bashing in the Mess Decks.

None of that worried the enthusiasts. The whole thing was taped; we simply had to copy form. In England the authorities were turning out publicity matter by the ton, and most of it was written by extremely good men. On the naval side, accounts of the war at sea were outstanding examples of what could and should be done; cool, objective and very telling. The R.A.F. had their own technique. They produced a quaint character named Pilot Officer Prune, whose idiocy was in itself a lesson that might save a life. The Americans had an extraordinary creature called Sadsack, as well as endless films and news sheets, designed to tell the folk back home what it was all about. A good many plough shares were being beaten into fountain pens at that time. We were competing with the best, and it would be idle to pretend that "DIT's" appearance left its rivals dumb.

If toil and sweat meant anything we should have stopped 'em in their tracks. Those of us who helped "DIT's" early steps worked long and hard and earnestly. We felt that we were doing something to tell the world that the R.A.N. was well up with hounds, on a red-hot scent that was setting in the direction of Tokyo.

About then, "Swan" was bombarding Wide Bay in New Britain, and Allied troops were on the point of landing at Morotai in the Halmaheras. The whole show was hitting it in top when "DIT" made its first — and dashed nearly last — appearance. Something frightful had happened, and on the front page, too. We published the photograph of a couple of sailors with their caps on flat-a-back. It was a clanger of historical proportions.

The fact that Stokers H. Chesterfield and J. C. Aubusson of "Napier" were a nice looking pair didn't matter in the least. A principle was involved, and, as a halting memory recalls, orders were issued for all copies of "DIT" to be collected forthwith for burning by the Public Hangman. The editorial staff were white and shaken. After weeks of work the whole thing looked like being a flop. It was awful. I shudder even now.

Of course, we lived it down in time; even mustered a tentative grin, when some kindly soul mentioned that the war was going our way in spite of all. Liberal-minded persons went further still in admitting that we were impeccable on page two, where there was a capital article on the R.A.N. in the prideful days of 1913. Alongside it were a few caustic comments on the use to which the Japs were putting their submarines, but I don't know why the Editor felt bound to state that "he did not necessarily agree with the views expressed." He may have remembered the yardarm that recruits are told about,

SEAS BATTER WRECK ON VICTORIAN COAST

An aerial picture of the "Winston Churchill", the yawl-rigged auxiliary yacht belonging to the Victorian Minister for Transport, Sir Arthur Warner, lies a few yards off Wreck Beach, near Wonthaggi, Victoria. Struck by some water-logged object early in April, the port side planking opened up, and "Winston Churchill" just made the beach. Distress signals sent off resulted in one of the largest air-sea rescue operations seen for some while, but, by that time, the Minister and his crew of six had got themselves ashore. The yacht (valued at £10,000) has since been brought to Melbourne by road.

—Sydney Morning Herald photo.

but whatever it was, he played a safe card in cutting into the four-column lay-out an itemised account of what Britain had given Russia in the way of equipment and arms.

The best of the offerings come under the heading of "Ships and Shipmates," a collection of odds and ends picked up from anywhere at all. I notice that some mastermind served up the fact that eighty-five per cent. of R.A.N. vessels were in operational waters, and that twelve and one-half per cent. of the entire R.A.N. personnel were actively engaged in the landings at Hollandia. That's not my effort. I'm not the sort to define words like "actively engaged."

Kindly reference is made to the W.R.A.N.S., who seem to have got mixed up with the R.A.N.N.S. in one place. The survey group, **Benalla, Shepparton** and others of their kind get a few lines, and in a central box is a list of decorations and awards.

Here **Arunta** is in evidence. Commander J. C. Morrow adds a D.S.C. to his D.S.O., and Lieutenant Ken Meyers ("Ping Low") collects a D.S.C. as well. Recipients in other theatres are also noted, but in the main it's a Coastwatcher's benefit. Lieutenants Wright, Horton, Josselyn and Waddell all get their D.S.C.'s; a coder and an A.B. the D.S.M., and several others are "Mentioned." The B.E.M. goes to Hon. Third Officer Ruby Boyle, W.R.A.N.S., the wife of the manager of the kauri timber outfit on Vanikoro Island, who declined to leave her coast-watching job when things became a trifle sticky just before the Battle of the Coral Sea. Incidents like that are worth remembering.

The well known writer Vance Palmer contributed a story, and from another source altogether comes the information that the aboriginal word for Crib Point is "morradoo," meaning powder and shot. Is that really true?

I wish I knew more about such things. I wish I knew the name of the author of the ditty pinched from the pages of "Kangaroo," which was privately printed for H.M.A.S. **Australia**. The first verse goes like this:—

"I don't want to buy any postcards,
Badly developed erotic photography.
Underclad, over-developed pornography
Is not what I'm seeking at all.
So imshi. Oh, imshi, I just want a dragoman
To guide me, to aid me, to steer
My fathering feet to a little round table
And a large mug of icy cold beer."

"DIT" also carried a limerick about a cypher girl in Malta; there was a pin-up type who obviously came of decent parents, and a couple of good drawings — girls again. I don't know why. It isn't all like that. On the last page we slugged our readers hard and heavy, and I wonder now how many took a great deal of interest in a scholarly column on the Education Scheme; or well-meant bits about some of the artists who make successive numbers of "H.M.A.S." a delight to browse through at the present time.

We may have been a bit high-minded, but we certainly carried a punch-line in the final par. "Dental decay," it reads, "is affected by diet . . . in wartime this can be counteracted by the use of carrots." Well, blow me down, if that's not spinning a dit!

ANTARCTIC ACTIVITIES

ANTARCTIC AIRPORT NEXT

THE chief executive officer of Qantas (Mr. C. O. Turner) has mentioned Australian interest in an air route to the Antarctic. Already there were regular American flights from New Zealand to McMurdo Sound, but the problem of flying across the continent needs further investigation. The first step is the establishment of an airstrip, probably at Wilkes. In answer to questions about a Qantas service from Australia through Antarctica to South America, Mr. Turner said that distances were such that another base besides Wilkes or McMurdo Sound would be required in Antarctica. This would mean considerable work before the scheme was possible.

WARM UP AT THE POLE

SPEAKING at a press conference in Canberra in March, Rear-Admiral George J. Dufek, U.S.N., said that America would install atomic generators to provide heat, light and power for her Antarctic bases within the foreseeable future.

Admiral Dufek, who has been in charge of U.S. Operation Deep Freeze, stated that his request for atomic power had been approved, and was now awaiting the necessary funds.

Reactors would be installed at McMurdo, Bird, the South Pole and Cape Hallett. Small types of atomic generators could be flown inland as necessary. The reactors would pay for themselves in cost of fuel and transport, and could be used, too, for exploiting the many mineral deposits which so far have been little more than hinted at.

TRADITION

By Vice-Admiral B. B. Schofield, C.B., C.B.E.—from "The Navy"

In 1853, just over 100 years ago, Long-term Service was introduced in the Royal Navy. This overdue reform came about because it was considered that the duties of a seaman had become too complex to be learned by the "volunteers" who officially manned Her Majesty's ships. Preliminary training of some kind had become necessary, and the seeds of specialization, which were to flourish in a way our ancestors could never have imagined, were sown.

Steam had already established itself, despite Lord Melville's gloomy prophecy that it would "strike a fatal blow at the naval supremacy of the Empire" and a new branch — the Engineers — was born. These technical sailors were regarded with some disdain by the die-hard sailors of the old sailing ship navy, but as the prototype of the modern warship emerged and specialization in other branches such as Gunnery, Torpedo and Signals became necessary, the prejudice gradually died out.

It is interesting to recall, however, that long after specialization had been accepted as an integral part of the new navy, we were always taught to be seamen first and technicians afterwards. In his book "Running a big ship on Ten Commandments" the late Captain Rory O'Connor wrote "Specialization is nothing very much by itself, but it is the fillip which helps the 'good' Executive Officer to go ahead in the Service." Many of us can remember the Commander casting a jaundiced eye over Both Watches for Exercise and demanding to know why so few of the Torpedo Party mustered for scrubbing decks, or the delight with which he was able to call on the stokers off watch for General Drill or for hoisting boats.

To-day the opportunities for plain "sailoring" are becoming fewer and fewer and the officers and men who man our ships have to be primarily competent technicians in order to operate and maintain the ever more complicated pieces of equipment which go to make up the modern warship. The oilskin-clad lookout need no longer do his trick on the spray-swept bridge. Down below, warm, dry and comfortable, he scans the dial of a P.P.I.* watching for the tiny blip which will announce the presence of what he formerly would have called an "objeck" but which he now identifies as "an unknown ship bearing so and so." The state of the weather only affects him in so far as the movement of the ship is concerned, and as gyro-stabilisers become general, even this may cease to bother him. Other men perform their duties in compartments lit by the eerie blue-green glow of instrument lights. Day and night are the same to them. The silence of their prison is broken by the drone of an electric motor, the thud of a message carrier ejected from its tube, or the whining call of a telephone. Others again sweep across the sky at a speed approaching that of sound, the cockpit of their aircraft a maze of instruments with the value of all of which they must be well acquainted. And what of those imprisoned within the steel walls of a submarine, which with the advent of nuclear-power need never surface for weeks on end.

Yet, if the physical demands made on the present day sailor are less than were made on his predecessors, the mental ones are much more exacting. Duties involving the handling and interpretation of intricate scientific equipment call for concentration and close attention over long periods, without any of the excitement of being able to see what is going on or even that of a struggle against the elements. But although these duties differ so much from those of his predecessors of even 50 years ago, the modern sailor is still a fighting man and it is as such that he must be trained. The education which he has received to enable him to perform his technical work had for its object the disciplining of his mind, but there is also the kind of discipline which enables him to control his natural instinct for self preservation and allows him to carry on when he senses that his ship or aircraft has been hit.

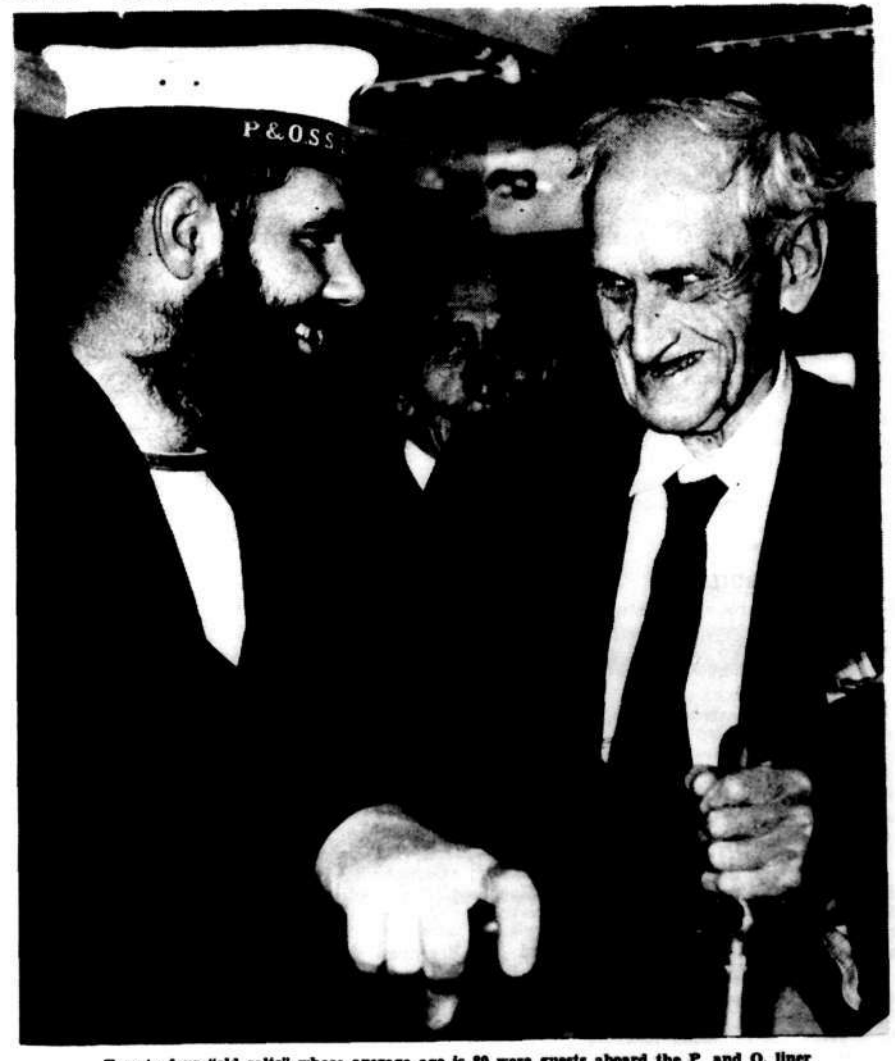
"It is the custom of the English to command at sea."—Charles II to Louis XIV.

It has been said that by giving orders and enforcing them you can control a man's actions, but you cannot control his thoughts. This fact, well known to the Communists, is responsible for the altogether abhorrent system of "brain-washing" practised by them. In a democracy we seek to inculcate the belief that obedience to orders is not incompatible with happiness by means which respect the right of the individual, and in these leadership plays a vital part. Even if leaders are born and not made

(Concluded on page 23)

* Plan Position Indicator.

'OLD SALTS' GUESTS IN MODERN LINER



Twenty-four "old salts" whose average age is 80 were guests aboard the P. and O. liner Iberia at Pyrmont on April 16th. Most of the men, who are from the War Veterans' Home at Narrabeen, served in the Merchant Navy. Gripping the Iberia's wheel recalled memories for Mr. Bill Grant (76), shown here with the ship's quartermaster, Stan Acres.

—Sydney Morning Herald photo.

NAVAL AFFAIRS
From All Compass Points

STRENGTH OF THE RESERVES

FIGURES published in the Defence White Paper "Defence Statistics, 1959-60" give the first indication of the strength of the new R.N.R. which now embraces many of the Volunteer Reserves. It shows the strength on January 1 to be 12,459. Before the merger, the strength of the R.N.V.R. was approximately 10,000 and the old R.N.R. numbered some 3,700 men.

The R.M.F.V.R. has maintained its strength at approximately 1,550 and the R.N.V.S.R. has increased by just over 1,000 to 14,516. The W.R.N.R. bearing at 1,020 is lower by just over 100.

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COST OF BUILDING

FACTS and figures which show the phenomenal cost of building a modern navy were given recently by the First Lord of the Admiralty.

A new aircraft carrier would cost upwards of 40 million pounds, a new frigate from three to four million and the complete modernisation of our amphibious warfare ships might be as much as 20 million. But the percentage of Government expenditure on the Navy is slightly less than it was in 1927-28. The percentage in 1958/59 is 6.7 per cent., a .2 per cent. reduction.

In spite of these phenomenal costs the First Lord has been able to state that in the past three years the following new, or completely modernised, ships have been brought into service: two aircraft carriers, 14 destroyers, 26 frigates, 12 submarines and more than 80 minesweepers and smaller vessels.

During the next two years Lord Selkirk expects from the new construction programme one aircraft carrier, three cruisers, 10 frigates and a number of submarines and small craft. There are 40 ships building at present.

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U.S. NAVY HONOURS BRITISH NAVAL INVENTORS

AT a ceremony in the United States Embassy in London recently, the Ambassador, the Honourable John Hay Whitney, presented United States naval awards to the men who made the operation of modern jet aircraft from carriers not only possible but swift, safe and smooth. The recipients, all British, are the inventors of the steam catapult, the deck mirror landing sight, and the angled deck system, all of which have been adopted by the U.S. Navy.

The Ambassador made the following presentations:

Legion of Merit (Degree of Officer): *Rear Admiral D. R. F. Cambell, D.S.C., Flag Officer Flying Training.

Legion of Merit (Degree of Legionnaire): †Commander H. C. N. Goodhart, R.N. (Admiralty, Naval Air Warfare Division).

Medal of Freedom (with Bronze Palm): *Mr. L. Boddington (Ministry of Supply), †Mr. D. Lean (Royal Aircraft Establishment), ‡Mr. C. C. Mitchell, O.B.E. (Messrs. Brown Bros.).

*Angled Deck System.
†Deck Mirror Landing Sight.
‡Steam Catapult.

UNITED STATES

THE first guided missile nuclear-powered submarine ever built as such was launched 9 1/59 at Mare Island Naval Shipyard. She will have a displacement of 3,555 tons with a length of 350 feet. Named "Halibut," she was designed as a carrier and launched for the "Regulus" II guided missile to be fired from the surface. She is scheduled to be completed in 1959.

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THE atomic-powered U.S.S. "Skipjack" has achieved the highest speed of any United States undersea craft during trials in March. Speed is believed to be in excess of 20 knots.

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FRANCE

THE patrol craft "L'Effronté" (fifth of the name since 1704) was launched in January, while her sister-ship "L'Intrepide" began her trials.

The carrier "Arromanches" succeeded in spite of a very heavy sea, in saving with helicopters only, the 37 men of the American cargo boat "Valiant Effort" which stranded on the Tunisian coast in January.

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GERMANY (WEST)

CONSIDERABLE furore was whipped up recently when it was learned that the former British frigate "Flamingo" had been name "Graf Spee" by the German Federal Navy, yet the renaming of two other former British frigates had passed unnoticed.

It will be recalled that about a year ago Germany bought seven frigates from the Royal

Navy. The first of these to be accepted by the Bundesmarine was the former escort destroyer "Oakley" of the "Blankney" class of Type II of the "Hunt" group, which was taken over at Liverpool on 2/10/58. She was commissioned and renamed "Gneisenau" at Bremerhaven shortly after.

The second vessel to be transferred was the "Black Swan" class frigate "Actaeon." She was later commissioned in Germany as "Hipper." The third ship was the "Flamingo" taken over on 21/1/59.

It is understood that of the remaining four vessels to be turned over to Germany shortly the "Albrighton" and the "Eggesford," former units of the "Albrighton" class or Type III of the "Hunt" group of ex-escort destroyers, will be renamed "Raule" and "Brommy" respectively; and the "Black Swan" class frigates "Hart" and "Mermaid" will be renamed "Scheer" and "Scharnhorst."

Strangely enough, while the well-known names of the notorious German raiders of the Second World War are being bestowed on frigates acquired from Britain, no names at all are being given to destroyers acquired by Germany from the United States. The "Fletcher" class destroyer "Antony" handed over to Germany from the American Navy last year is known simply as "Z.1."

Five similar destroyers are being acquired from the United States and Germany will thus have as quadron of these "Fletcher" class ships. Each of them has a full load displacement of 2,750 tons, an armament of four 5-inch guns, six 3-inch anti-aircraft guns, five 21-inch torpedo tubes, and a full speed of 35 knots. Until Germany completes the destroyers she is building the above ships will be the largest and most powerful in the German Federal Navy.

With regard to the launching of the first A.S. escort vessel of the new German Navy, it will be of some interest to point out that all the armament and electronics for these ships will be made in France.

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GREECE

TWO destroyers of the "Fletcher" class have been acquired from the United States. They are "Charette" and Conner," both completed in 1943. Both ships have lain idle since the end of the Second World War, but were thoroughly modernised before being turned over.

Since 1951 Greece has made a pair of ex-United States destroyers of earlier vintage, the "Doxa" (ex-"Ludlow") and "Niki" (ex-"Eberle"), somewhat smaller vessels of 2,572 tons full load displacement, as well as four former American destroyer escorts of 1,900 tons full load displacement.

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JAPAN

THE destroyers, "Heywood L. Edwards" and "Richard P. Leary," have been acquired from the United States Navy and renamed "Ariake" and "Yugure" respectively. They are the first vessels of the later "Fletcher" class to be turned over to a foreign power by the United States.

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NAVAL DIVERS AID TRAWLER

TWO Royal Naval divers from the frigate H.M.S. "Duncan" worked for two and a half hours in water 13 deg. above freezing point off Iceland during the night of November 20th-21st to free a wire which had snagged the propeller of the Grimsby trawler "King Sol".

The trawler reported by radio to Royal Naval fishery protection vessels patrolling off Iceland that her warp wire had caught round her propeller. She was incapable of moving and the wire was fast to the bottom, 13 miles off the N.W. coast of Iceland.

H.M.S. "Duncan" sent three divers with a support party to assist the "King Sol", and Able Seaman M. Dungay, of King's Lynn, and Able Seaman M. J. Surr, of Grimsby, dived in relays to remove five and a half turns of the three-inch wire from the trawler's shaft and propeller blades.

The Icelandic gunboat "Thor" overheard the plight of the trawler and called up the naval frigate to say she also had a diver on board. The Icelanders said they would be very pleased to tow "King Sol" into an Icelandic port.

Commodore B. J. Anderson, senior officer of the Navy's Fishery Protection Squadron, reported to the Armiralty:

"'Duncan' declined with thanks. 'King Sol' remarked, 'Too right he would like to tow me in'!"

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NEW GUNNERY RANGE

THE crash of a 4-inch naval gun fired by the Minister for the Navy (Senator Gorton) marked the official opening in March of the R.A.N.'s new £1,500,000 gunnery range at West Head near Flinders. The range is equipped with every gunnery system in use in the R.A.N., and plans are in hand for the installation of the latest gun-direction and guided-weapons systems.

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SPAIN

THE new naval base especially built for the U.S. 6th Fleet at Cartagena, has recently been inaugurated. It will offer refuelling and maintenance facilities to the U.S. ships without interference with the Spanish dockyard, though the latter will take advantage of improvements available to both.

THREE RIVER CLASS FRIGATES NOW REFITTING

Men at Garden Island have begun work on three River Class frigates from the R.A.N. "mothball" fleet. Two of the ships, Gascoyne and Diamantina, have been in the reserve fleet for about 12 years. The third, the Barcoo, was paid off in 1955. The three are being refitted and modernised for use as training ships. Lieut.-Commander John M. Nicholas, commander of the Cootamundra and captain-designate of the Gascoyne, said: "Considering they have been in mothballs for 12 years, their condition is really remarkable." Picture shows Lieut.-Commander Nicholas blowing dust off the binnacle of the Gascoyne. Watching him is the refitting superintendent, Commander C. C. Connolly. —S.M. Herald photo.

THE MERCHANT SERVICE

"WESTRALIA" TO END W.A. RUN

The popular passenger motorship "Westralia" (8,174 tons gross) will be withdrawn from the West Australia run in March after 29 years' service.

Announcing this last month, the general manager of Huddart Parker Ltd. (Mr. R. J. Edwards) said that the financial returns of the vessel had been so low that the Company could not afford to continue the run any longer.

During the war the "Westralia" was converted into an armed merchant cruiser and was used for troop carrying in the Middle and Far East.

Prior to World War II, ten passenger ships were continuously employed on the Australian coast, viz., "Zealandia" (sunk during the bombing of Darwin), "Ormiston" (sold to Greek buyers for Mediterranean trade several years ago), "Orungal" (wrecked off Port Phillip Heads early in the war), "Canberra" (sold several years ago, last known as the "Espana" and tied up at the South American port of Cuidad Trujillo), "Katoomba" (also sold several years ago and renamed "Columbia"—laid up at a Greek port since March, 1958), "Manunda" (sold to Japanese buyers a few years ago), with the remaining present four ships, "Manoora," "Kanimbla," "Duntroon," "Westralia," shortly to be reduced to three—a deplorable state of affairs for a young maritime nation.

UNDER the heading "Goodbye, Old Friends," the "Maritime Journal" throws into sharp relief the position of the Australian coastal trade.

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OLD COASTAL SHIP SOLD

One of Australia's oldest coastal vessels, the 823-ton freighter "Woniora," has been sold by Holyman & Co.

The ship, which has been sailing Australia's coastal waters since 1913, was sold to a Hong Kong shipping firm through United Salvage Company.

United Salvage Company representatives said they did not know what future would be decided for the "Woniora" by her new owners.

The "Woniora" has been lying idle at Appleton Dock, Port Melbourne, since last April.

A spokesman for Holyman said the ship would not be replaced. There were four other company ships calling at her ports — the "Lorinna," "Wareatea," "Tarinna" and "Lemana."

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IDLE "RIVER" SHIPS

"River Norman," a £500,000 Brisbane-built ship, has been idle for four months — earning nothing and costing the Australian National Line £250 a week to maintain.

Seven other "River" class ships, sisters of the "River Norman," are idle. They, too, are "moth-balled" — in Sydney and Melbourne.

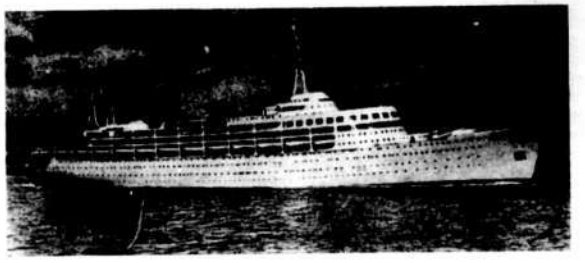
Thirteen "River" ships were built in Australian shipyards during World War II or soon after.

Only five are still sailing. They are hauling coal and iron-ore around the Australian coast.

A spokesman for the Australian National Line said, "They're far too big for general- cargo needs on the coast.

"We used them for bulk cargoes. Last year they did well, hauling wheat to New South Wales and Queensland, but they've been idle since.

"Their capacity is about 8,500 tons. Now we have the 'Lake' ships that will carry 10,000 — like the 'Lake Barrine, and the 'Lake Sorrell,' diesel-powered, designed for bulk cargoes, and cheaper to operate."



"CANBERRA"—The P. & O. Ship of the Future

AN electronic working model of the "Canberra" has recently been on show at the International Trade Fair, Melbourne. The model is of the new 45,000-ton passenger liner "Canberra." Approximately 8½ft. long, it is scaled down from the future ship's 820ft. (100ft. longer than the 30,000-ton "Iberia" and "Arcadia"). "Canberra" will be the largest and fastest ship built in Britain since the "Queens." Her keel was laid at Belfast in September, 1957, and she will be delivered late in 1960.

She has been called the "Ship of the future" because not only will she be the largest turbo-electric liner ever built in Britain, but she is of almost revolutionary design.

Her twin funnels, side by side, and all her machinery will be aft, not only giving her an unusual appearance, but providing extra deck and other space for passengers.

She will provide air-conditioning throughout for her 3,250 passengers and crew, and her speed of 27½ knots (about 34 m.p.h.) will shorten the U.K./Australia return voyage by two weeks.

The display unit for the model embodied a 10ft. illuminated panel illustrating the main compartments in the ship, each of which in the model lights up when the viewer presses a button. There are 20 buttons.

Viewers of the model could also "telephone" the ship. Dialling numbers selected from an illustrated panel and lifting the receiver, they are able to hear a voice in English, French or German describing the part of the ship they have "contacted."

By pushing levers they could also operate on the model ship scale models of novel equipment which "Canberra" will carry when she is completed.

One is a "transporter" device which will be fitted into the for'ard part of the ship to load and unload both cars and cargo horizontally through the ship's side. A miniature car is used to show how the transporter works.

The other is associated with the ship's lifeboats, which will be carried flush with the ship's side, three decks below the traditional "boat deck." A moving lifeboat on the model shows how the davit mechanism slides the lifeboat into position over the water.

NEW TUGS FOR KWINANA

Keels for two £300,000 ocean-going tugs, to handle tankers in Western Australia, were laid in Brisbane in December.

Scheduled for delivery next July, they will be sailed to Cockburn Sound, Western Australia, where they will handle tankers of up to 100,000 tons for the Kwinana oil refinery, largest in the Southern Hemisphere.

Each tug will be 137 feet long, displacement 400 tons, and will be powered by 1,500 h.p. eight-cylinder diesels.

They will be the first Australian vessels to use Kort steering and propulsion nozzles. Each screw will turn in a cylinder, instead of in free water. Added thrust of the "jets" will give the tugs a "free-running speed of 11 knots.

Each tug will have room for a crew of 20, and will be fitted with gull fire-fighting equipment.

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WORLD TANKER FLEET

Oil tankers now comprise 27 per cent. of the world's merchant fleet, according to figures released by the Petroleum Information Bureau (Australia).

Deadweight tonnage of the world tanker fleet at present is estimated to be more than 52 million tons d.w., of which 56 per cent. is owned by independent operators, 37 per cent. by oil companies and seven per cent. by Governments and "others."

The proportion owned by independent operators has risen from 49 per cent. in 1939 and may well rise to 58 per cent. by 1960.

At present there are an estimated 1,060 tankers on order in the world's shipbuilding yards and, illustrating the move towards the bigger, more economical supertankers, more than half of this total comprises tankers in the 30,000 tons d.w. to 50,000 tons d.w. class with eleven now on order of 100,000 tons d.w. or over.

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NEW MARINE FILM STAR

The Orient liner "Orsova," a frequent caller at Sydney, will be featured in a new J. Arthur Rank film, "The Captain's Table," now being made in England.

The film is based on the book by Richard Gordon, author of the famous "Doctor in the House" series. It is about a ship's captain who, after being in command of cargo ships for many years, suddenly finds that he has been appointed master of a large passenger liner.

While part of the film was being made recently, port workers at Tilbury, near London, found they had a strange ship — the "Queen Adelaide" — in the docks.

The newcomer looked suspiciously familiar, but the name "Queen Adelaide" was there on her port side and stern for all to see. It was only on going round to her starboard side that they found the liner's real name — "Orsova."

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LONGEST VOYAGE BY P. & O. PASSENGER LINER

WHEN the 28,000-tons liner "Himalaya" left Sydney on 18th March she was undertaking the longest voyage ever made by one of the P. & O. Company's passenger liners.

"Himalaya," which arrived in Sydney on 14th March from the United Kingdom, via Suez, inaugurated the Orient & Pacific Line's "Japan-Pacific Service," directly linking North America with Japan, Hong Kong and the Philippines.

The voyage took "Himalaya" from Sydney to Auckland, Suva, Honolulu, Vancouver, San Francisco and Los Angeles, thence Honolulu, Yokohama, Kobe, Hong Kong, Manila and Singapore. From Singapore, "Himalaya" returned to the United Kingdom via Colombo and Bombay and the Suez route.

Another P. & O. passenger vessel, "Chusan," 24,000 tons, is also inaugurating the North Pacific Service in the reverse direction; she leaves London on 11th April for the Far East via Suez and then crosses the North Pacific to Vancouver and San Francisco.

FOR SEA CADETS

Management of Power Boats

(Part II)

By G. W. NUTLAND

—from "Sea Cadet"

WE have already discussed the general rules for bringing a power boat alongside either a jetty or an accommodation ladder. Now quite clearly when a Coxswain has done this he must immediately consider what steps are necessary to secure the boat, and, of course, later on, decide upon the best method for leaving the berth.

These two points, however, are closely linked together and the prudent Coxswain will, when securing the boat, give a little thought to the problem of getting under way again. In other words, he must try to secure the boat in such manner as to give the maximum assistance when casting off.

A boat alongside an accommodation ladder normally secures to the boat rope. In fact, she has no real alternative, and does not need one. Under these circumstances she is securely held, and can get under way without difficulty.

However, when lying alongside a jetty the position is different, and requires more thought. One problem, of course, is that conditions often change during the time the boat is alongside. For instance, the tide may turn, or perhaps even more important, the coxswain finds that, although, on arrival, his was the only boat in sight, at the time of departure he is hemmed in by craft of all shapes and sizes.

To anticipate these difficulties is part of the coxswain's job, and as experience is gained they pass unnoticed. However, until this stage is reached unusual situations can be quite disturbing. Therefore, be prepared for difficulties, and be ready at all times to meet them. In this respect the method of securing the boat is important. Often a boat is made fast at a jetty with her head rope well forward, and a stern line leading aft. This method is quite satisfactory, but it can be improved. A boat is generally held more firmly if her head and stern lines are used as springs. This is done by leading the head rope aft, and the stern rope forward, so that they lead towards, or even cross each other. By securing in this way the boat is not only held more effectively, but the coxswain has a decided advantage when he is ready to get under way.

As the departure time arrives the coxswain must take into consideration the general conditions, and make a definite decision over what he intends doing. He must try to gain all the assistance he can from natural sources, such as tide and wind, also take into account any special characteristics of the boat. It is known, for instance, that a single-screw boat does not steer easily when going astern. Owing to the influence of the propeller her stern swings to port, and it is difficult to control this side swing. Therefore, whenever possible, avoid going astern in circumstances that allow nothing to port.

Let us then imagine that a single-screw boat is lying alongside a jetty port side to. Since her arrival other craft have secured ahead and astern, leaving a very limited

TRADITION from page 14.

every man in a position of responsibility should seek to acquire the qualities essential to leadership. Most of these are learnt by experience, but with fewer ships and fewer opportunities for sea-service, how are we to train men to be leaders and to maintain the high standards of the past?

In his book "The Navy of Britain", Professor Lewis, writing of the changes which have taken place in the navy in recent years, asks whether in the face of differences so vast, there is anything left in the new navy which is even remotely related to the old one, and he answers his question in these words: "Indeed there is." But it is not on the material plane: it is on the mental and spiritual. It lies for the most part not in things but in the men. They, whether admirals, officers, or ratings, are out to achieve the same results as were their forefathers for all the different tools which lie to their hands. Most certainly the fact that they cannot do things the same way does not mean that they are not out to do them. And why they are not out to do them — the same old things — may be summarized in one word — "Tradition."

And here too is the answer to our own question. No matter how small or how technical the navy of to-day or tomorrow may be, we can and must keep alive the spirit on which our sea-supremacy was founded. Admiral Sir Reginald Custance's words — "Battles are won or lost by men, not ships" — are as true to-day as they ever were, and the spirit which wins battles is nurtured on tradition.

space for movement. However, she has been secured with her head and stern lines used as springs, and the coxswain's problem now is to clear the other craft as he leaves the jetty.

Under these circumstances the first step is to let go the fore spring, leaving the bow free. As a precautionary measure the after spring may be eased, and if the boat is not too heavy she may be fended off a little. When this is done the engine can be driven slow astern, with the rudder to port. As this happens the influence of the propeller is two-fold. It drags the stern to port, and in doing so swings the bow to starboard. It also induces stern way which is checked by the resistance of the after spring. The result is that the boat is permitted no fore-and-aft movement and the bow swings out. When sufficient clear water appears on the port side the engine may be driven ahead, and the after spring cast off. The boat can then be steered ahead as desired. If the boat is secured starboard side to in a similar situation the same procedure may be followed with the rudder set to starboard. Under these conditions rudder and propeller oppose each other, consequently the bow will not respond so quickly.

The strength of the Australian Sea Cadet Corps as at 24th February, 1959, was: Officers 104, C.P.O. Instructors 16, P.O. Instructors 59, and Cadets 1,479. Total 1,658.

The first stage in this operation is to cast off the after spring. Then, if the boat is lying port side to, the rudder is set to port, and the engine driven slow ahead. The influence of the propeller here is to induce head way and also swing the stern to starboard. Head way is checked by the resistance of the fore spring, and the propeller, assisted by the rudder, quickly swings the stern to starboard.

When performing this operation, care is needed to ensure that the stern has ample clearance on the port side before the engine is set astern to back out into clear water. It must be remembered that immediately the engine drives astern the revolution of the propeller causes the stern to swing portwise. A situation such as this needs handling carefully, but if difficulties arise they can often be overcome quite safely by using the engine with discretion—a short burst induces a little stern way, then throttle down. If this is repeated, steerage way can be maintained, yet, as the revolutions of the propeller fall away the drag on the stern decreases, allowing the rudder to act more readily.

For a boat lying starboard side to the same method may be used with the rudder set to starboard as the engine drives ahead. Unfortunately, under these conditions rudder and propeller action oppose each other and the stern will not swing easily. However, what the coxswain loses here is quickly gained when the engine is reversed. Rudder and propeller then combine forces to swing the stern rapidly to port, and into clear water.

The examples given here illustrate the use of springs for moving a boat in a limited space. If the general idea is understood it is easy to appreciate the value of springs used in this manner. A coxswain may find that he has to force the bow from a jetty against a strong cross-wind, or perhaps swing the bow out sharply to gain advantage from the tidal stream.

EASY MONEY

An example of how to make money and still remain honest is given in the "Maritime Journal," who quote the case of young John Wunderwald, a dock worker of Cairns, Queensland. Last year this young man attended an auction sale for the wreck of the sugar lighter Wortanna, which had grounded at the entrance to Mourilyan Harbour. His bid of £5 was successful and he thus became a shipowner. Early this year he sold the salvage rights to two salvage men for about £600, but retained a 25 per cent. interest. Salvage operations resulted in machinery to the value of £9,000 being recovered. This entitled the 25-year-old Wunderwald to an additional £1,500, which, together with his initial £600, gives him a return of £2,100 on an original outlay of £5.

REVIEWS

ALL FOR THE YACHTSMAN

"Carefree Cruising." By G. S. Selman. (Yachting Press).

Mr. Selman is a naval architect with wide experience of ship design, engines and propellers and his book is a mine of information with illustrations, graphs, formulae and tables.

He and a friend find a 54-foot diesel yacht, *Silver Vanity*, lying for sale in a mud berth in Chichester Harbour. "On deck she looked a bit of a mess" and there was quite a lot wrong elsewhere.

The book gives an entertaining account of her inspection and survey and then the business of reconstruction and fitting out. So much technical matter is included that the book would have been rather indigestible for the average yachtsman but for the narrative style adopted.

A most interesting book especially for the man with a mechanical frame of mind. For any yachtsman it is worth reading and keeping for reference against the time when problems arise.

—F.J.G.H.

★ ★ ★

THE BISMARCK AGAIN

"The Sinking of the Bismarck." By Will Berthold. (Longmans).

It is difficult to know what to make of this book. It is a German account of Operation "Rheinübung" (though the author for some reason calls it Operation "Bismarck"), which was the enemy plan to attack the Atlantic shipping with a powerful squadron comprising the *Bismarck, Prinz Eugen, Scharnhorst, and Gneisenau.* In the event, only the two former ships took part, and the *Bismarck* was sunk six days after leaving Korsfiord, in Norway.

As an account of the operation itself the book is historically valueless. It contains so many errors of fact that one's confidence in it is destroyed in the first few pages, and these errors continue right through until the final sinking. The book, therefore, has to be judged as a work of fiction based on fact. Here, too, the story does not ring true to English readers, though this may be due to the translator's obvious ignorance of naval terms and procedures. It would have been a matter of some interest, for example, to have been on the bridge of H.M.S. *Cossack* during the night attack and to have heard Captain Vian roar, "Turn Away! Zig-zag! Out of the line of fire! Back! Re-form!"

This little extract is, in fact, typical of the whole book, and may perhaps be taken as a commentary on its worth.

—P.K.K.

★ ★ ★

MEMOIRS OF A SUBMARINE C.O.

"One Man Band." By Rear-Admiral Ben Bryant, C.B., D.S.O., D.S.C. (William Kimber).

"One Man Band" is Ben Bryant's account of the exploits of the submarines *Sealion* and *Safari* while they were under his command during the Second World War — exploits which established his reputation as one of the most brilliant of our submarine commanders.

Admiral Bryant is also an excellent writer. His story begins when he joined the submarine branch in 1928 and he makes good use of his peace-time service to familiarise the reader with the normal life and routine in a submarine. Avoiding technicalities, he also explains in his opening chapters her inherent disadvantages and the difficulties and dangers she is likely to be faced with in war. It is thus made easy for the reader who knows little or nothing about submarines to understand the thrilling events described in the later chapters.

Bryant was not lucky in finding many warships to attack, most of the 32 vessels he sank being merchant ships or tankers carrying vital supplies to Rommel. Allied submarines were of the greatest possible help to the 8th Army though unhappily nearly 50 per cent. were lost during the North African campaign. The reader will be thrilled with this fascinating story of heroism and endurance.

—G.P.T.

★ ★ ★

QUITE NATURALLY

"Out of Noah's Ark." By Herbert Wendt. (Weidenfeld & Nicolson)

The matter is simple: Do you wish to read the facts as to whether unicorns existed, whether mermaidens flourished, and who are the abominable snowmen? If so, then "Out of Noah's Ark" is the vade-mecum of the animal world that you need. This is thus an absorbing book with an accent on the wonder of the mutations of animal life on Earth. Here be dragons and sirens (who are most disappointing) and a picture of the hydra with seven heads—all of which look not unlike Hitler.

This is an encyclopaedia in miniature, justly recommended by the Book Society. Its fascination lies not a little in the lay language approach to matters of much scientific import and interest of appeal to young and old alike.

—J.H.

ALL ABOUT THE SEAS

"Book of the Seven Seas." By Peter Freuchen. (Jonathan Cape).

We have all heard of Peter Freuchen, the "Vagrant Viking"; and here is an encyclopaedic book on everything that concerns or has concerned the seas to which his long and fruitful life has been devoted. One can merely pick out a few plums from this variegated pie. It is so up to date that we learn that Iceland is not, as is generally supposed, entirely dependent on fish for her livelihood, for cement plants have been built there to make use of the vast deposits of shells which are found along her shores. It is also, we are told, contrary to general belief that sharks are particularly dangerous, for even if harpooned they will not fight. Most tales of fights with sharks are mere fantasy. Again there have been pirates whose characters have differed from what one would expect—Dampier, for instance, did not drink and while his companions were carousing in port he would be bird-watching or enjoying the beauty of tropical flowers. On the other hand, we may read here of two female pirates, Mary Read and Anne Bonny, bloodthirsty villains, who were said to be without mercy except when "carrying off struggling and tender young males." We read that a sorry fate awaited the Filipinos at the hands of Magellan, who has been called the greatest navigator of them all. When a couple of villages refused to be baptized he helped to burn them and kill all who could be caught. But he was equally severe against any mutinous officer—he had Captain Quesada of the *San Antonio* beheaded by his own valet. A contrast was Captain Cook and it is one of history's ironies that he who wanted more than any other explorer to be fair to the natives should have been killed by them. —A.C.

C.O.P.P.

"The Secret Invaders." By Bill Strutton and Michael Pearson. (Hodder and Stoughton).

The Combined Operations Pilotage Parties, C.O.P.P. for short, were set up to make surveys of the coasts of enemy occupied countries on which assault landings were later to be made. It was an organisation of intrepid swimmers who, night after night, would return to the beaches to gather every essential fact which might have a bearing on the subsequent assault.

This is a tale of perseverance and of gallantry. It is very largely the story of Nigel Willmott, then a Lieutenant-Commander, who conceived the original idea and brought it to fruition. It is good to see the courage of these C.O.P.P. teams made public at least, and he will be a poor-hearted reader who does not thrill to the story which this book has to tell. It is written in a lively fashion, always easy to read, yet remains factual enough to be accepted as a valuable contribution to the general history of the naval war. It can be very heartily recommended.

—J.T.

* * *

SHY, SOOTY, AND LAYSAN

"The Wandering Albatross." By William Jameson. (Hart-Davis).

In "The Wandering Albatross" William Jameson has written an enthralling technical and yet lay book about the world's largest bird. It has been proved an albatross flew 3,150 miles in 12 days and, another was found 6,083 miles from its place of ringing—these flights being in the Southern Hemisphere. Surprisingly its average size is 10ft. wing span, though it seems much larger in flight. There is one museum specimen of 17ft. 6in. The bird weighs around 20lb. and, as the author shows, seems to have secrets of flight unknown to modern science in aeronautics. It also appears to be one of the fastest birds, with an air speed of 75 m.p.h. The "Shy" Albatross which rarely approaches a ship, the "Sooty" with brown plumage, and the "Laysan," with the black feet and the short tail, are all Northern Hemisphere types. The remaining 10 of the listed 13 are native to the Southern Hemisphere.

—B.J.

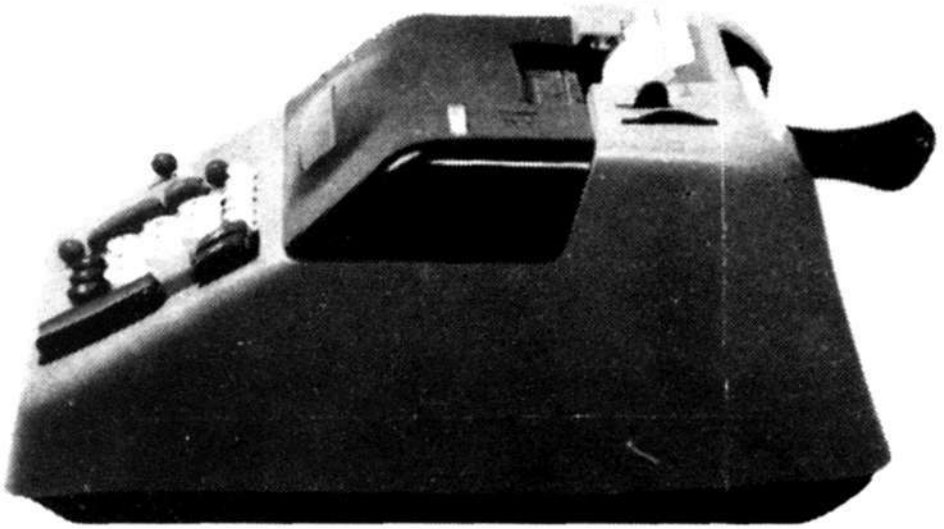
* * *

"MOONRAKER'S" TRAVELS

"The Sea is for Sailing." By Peter Pye. (Hart-Davis).

Dr. Pye is an old hand at sailing yachts through unfrequented seas; and in this book he tells how he, his wife and Christopher, an old Etonian friend, travelled thousands of miles and put in at numerous ports. They started well, for on landing at Bayona in Spain they encountered one Miguel, a Spaniard with a rich Scottish accent, who showed them where to eat oysters by the hour instead of by the dozen. Invited to a hospitable Marquesan house they dined on quantities of raw fish soaked in citron and served with coconut cream, followed by sucking pig, with a hibiscus flower in its ear, baked breadfruit and a bottle of Burgundy. On the Californian coast they fell in with a remarkable woman, descended from a Norwich sea-captain and a Spanish woman. At a Mexican port Christopher went to a neighbouring town to buy provisions. He was unsuccessful, but said that he enjoyed his walk back of 10 miles, although on the way he had to wait to let two bulls finish a fight on the road.

—B.H.



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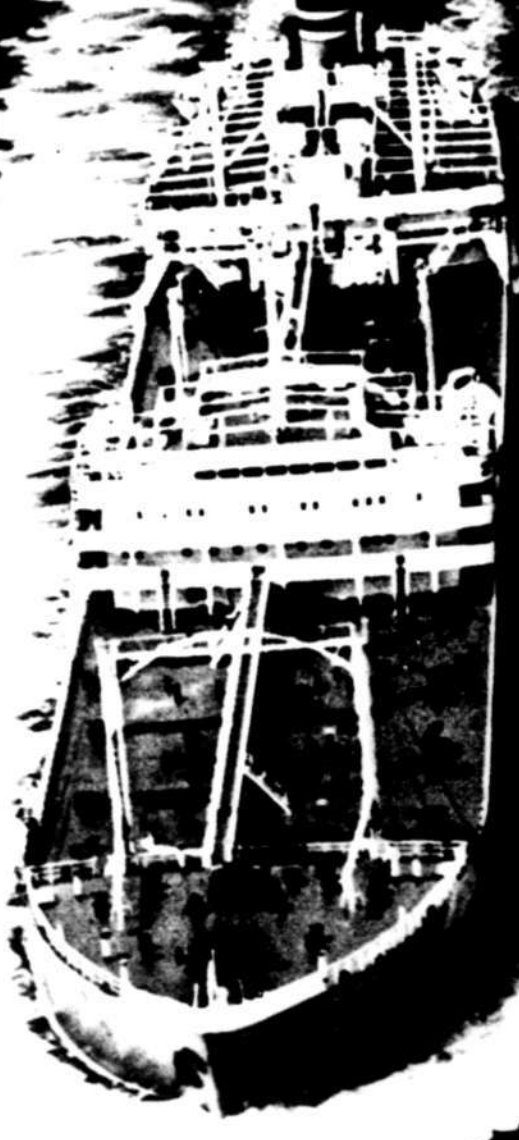

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EDITORIAL

STRAWS IN THE WIND

IN the opinion of Admiral Wenneker, the German Naval Attaché in Tokyo, "the greatest single shock to the Japanese was their defeat in the Battle of the Coral Sea . . . because they were confident that they would conquer Australia by the end of 1942."

The importance of the Coral Sea engagement, which began in the first few days of May, 1942, may be defined in different ways, but amongst them must be the psychological effect of this reverse upon a people brought up to believe in the invincibility of Japanese arms.

In spite of some talking down in recent years, the interrogation of prominent Japanese and the examination of papers and official documents after the surrender, leave little doubt that the occupation of Australia was planned. A "civil administrator" had been nominated, and, according to this source, an enemy force was to have attempted a landing between Townsville and Brisbane early in 1942. The capture of Port Moresby was regarded as a stepping stone in the right direction.

What appears to have thrown the Japanese programme out was the unexpected resistance of the Americans at Bataan, followed in due course by the stubbornness of Australian troops at Milne Bay and in the Owen Stanleys; by losses of ships and aircraft sustained in the battles of the Coral Sea and at Midway, and, finally, by the American landing at Guadalcanal.

In the game of guessing, the general features of the Japanese plan had long been foreseen, and, so far as the Battle of the Coral Sea was concerned, Allied success was partly due to the correct interpretation of what used to be called "straws in the wind" — those bits and pieces of information received from all sorts of unexpected places.

In reading reports that are now available to all, the accuracy of deductions drawn is very striking. At the beginning of January, 1942, an aerial reconnaissance of Truk showed a Japanese Hospital Ship, together with a force of cruisers and destroyers, which the crystal ball boys in this country believed to be the makings of an enemy advance towards the south. In the event, Rabaul was occupied by the Japanese on 23rd January.

The first indication that Port Moresby was a likely objective came shortly after, in the form of reports showing the presence in the Truk-Rabaul area of a Japanese naval force made up of what was thought to be four carriers plus the principal elements of the Fourth (Mandates) Fleet. On 2nd February, Japanese planes bombed Port Moresby, and within a week landings were made at Lae and Salamaua. Japan's intentions were now *obvious, and in the next few weeks* U.S. sources (who had broken Japanese codes) were

He that commands at sea may take as much and as little of the war as he will.—

Francis Bacon.

able to give Port Moresby warning of impending attack, and actually mentioned ships of the enemy striking force by name. The date of the attack is given as "on or after 2nd May."

All this had its bearing upon the position of Allied naval forces on 3rd May, when Admiral Fletcher in Task Force 17 heard that the Japanese were coming ashore at Tulagai, in the Solomons. That message was one of a number originated by the Australian Naval Coastwatching Service, directed in the field by Commander E. A. Feldt, R.A.N. As described by Feldt in his book, "The Coastwatchers," the man who had a grandstand view of the Tulagai landings was "old, frail and in ill-health"; an Island trader in peacetime who became a Petty Officer R.A.N.V.R., and subsequently spent many months dodging the Japs while observing and reporting their movements.

To the Japanese, the occupation of Tulagai was merely a step in a planned operation that had Port Moresby as its immediate objective. It offered a suitable base from which to support the Port Moresby attack group or to meet any U.S. counter move that might eventuate. The Japanese were not expecting the rough handling they received in the Coral Sea engagement. They knew nothing about those wind-blown straws, and how it was that we were waiting for them.

DEFENCE POLICY AND THE ROYAL NAVY

AN ANALYSIS BY THE GOVERNING BODY OF THE NAVY LEAGUE

IN a Memorandum to all Branches of the Navy League, the Governing Body of the League in Great Britain state that they are seriously disturbed by the fact that the strength of the Royal Navy is being reduced to such an extent that by 1960 operational fleets will be the smallest in history.

The Memorandum continues by reviewing Government policy. This it states is based upon three considerations (a) the possession of nuclear weapons and the means to discharge them as the principal deterrent to an all-out nuclear war; (b) economy; (c) reliance on defensive alliances — N.A.T.O., S.E.A.T.O. and the Baghdad Pact, and more particularly upon the strength of the United States.

No objection is taken to any of the above postulates, and in the opinion of the Governing Body, the nuclear deterrent must be maintained. But if it is accepted that the nuclear deterrent has and will prevent a suicidical all out war, the danger of a war fought with conventional weapons is increased; particularly a war arising out of the kind of local indents of which there have been too many in recent years.

Economy itself is admirable, but defence must always be a first priority with any government. The benefits of the "Welfare State" cannot be enjoyed unless they are defended.

Dealing with Britain's alliances, the Governing Body agrees that the free world must stand together, but in such a combination it is believed that the British part should primarily be at sea. With British interests all over the world, it would be dangerous to assume that allied naval forces would be available for the protection of British property wherever it might be attacked.

The duties of the R.N. are briefly summarised under three headings. In peacetime, the function of the Navy is to uphold British interests, including the demands of trade and foreign policy throughout the world. Minor wars must be prevented from developing into major conflicts, in which connection the R.N. must be free to transport Royal Marine or Army detachments to the scene and provide air cover, artillery support and supply. In a major war, the R.N. must in association with Britain's allies, maintain control of the seas. Only in this way can the strength of the free world be maintained, and that applies whether the war be fought with conventional or nuclear weapons.

As a deterrent in a nuclear war, the navy must provide mobile platforms for the discharge of nuclear weapons by strike aircraft launched from aircraft carriers, and guided missiles from surface craft or from submerged submarines. In this connection, the Navy alone can provide the full strategic requirement of mobility, endurance, surprise and a high degree of invulnerability. The submarine of the future will, in addition, be virtually invisible.

The above capabilities enable the Navy to strike at enemy territory from any part of the ocean perimeter, thus giving greater range to missiles than is possible from present or projected land sites. Ships which can discharge these duties can discharge any of the other duties outlined above. It is not necessary to create different fleets for different purposes.

The Governing Body believe that the threat of all-out nuclear war is less while both sides possess the deterrent, and that the greatest danger faced by the free world at present is the possibility of subversion, infiltration and the encouragement and exploitation of minor incidents, leading to a major war neither planned nor desired by either side.

In such an event, successful attack upon the essential seaborn supplies of allied nations would paralyse their capacity to resist. This danger to the structure of the defensive policy of the Allies is believed to be well understood by the Soviets. It is the only possible explanation of the tremendous efforts they have made to create a vast, offensive Navy.

This force is believed to consist of some 30 heavy cruisers, not less than 150 destroyers and at least 500 submarines. There is also a land-based naval air force of some thousands of aircraft.

In the face of such a threat the Memorandum continues, the Royal Navy has been allowed to run down to an alarming extent. Where there were four aircraft carriers in 1956 there are now three; cruisers have dropped from nine to three, while destroyers showed a drop of five in the years between 1956-58.

According to the Memorandum, we have not yet begun to build the revolutionary ships of the future, likely to take the place of major warships of war-time or pre-war design which form the fleet today. The first escort vessels to be armed with missile projectors in place of conventional guns have not yet been laid down, though they have been announced as "ordered" in Naval Estimates for several years past. The first nuclear-powered submarine has yet to be laid down.

In contrast, the United States has a number of both the above classes of vessels in operational service and is actively increasing their number. With this in mind, it would be dangerous to assume that other countries are not making similar progress.

On the facts presented, the conclusions reached in the Memorandum, and that:—

(a) The present and, still more, the prospective strength of the Royal Navy is quite inadequate to discharge its duties in peace, or, where British interests may be threatened in a minor war, or to play an effective part in the allied effort should a major war break out.

(b) That inadequate resources are being devoted to establishing a steady building programme of the modern, revolutionary warships required to meet a revolutionary age.

(c) That Great Britain and the Commonwealth of which it is the centre, depends as does no other country or group of countries, on the command of the seas. Once that should be lost there would be no alternative but destitution, starvation and abject surrender.

The sea defences of Great Britain must therefore be a first priority, whatever else may have to be sacrificed.

CREST FALLEN

MEMBERS of the ship's company of H.M.S. "Soberton" recently took a few hours off from their fishery protection duties to go along to their namesake village in Hampshire. With them went the ship's crest for presentation to the Vicar to mark their adoption by the inhabitants.

Official festivities were rounded off by a dance in the village hall, although an unofficial episode caused a few red faces which have, fortunately not affected the happy relations between village and ship.

It was the most natural and praiseworthy suggestion of the Vicar to put the ship's crest on a shelf to be admired by his parishioners, but the original idea was that it should remain there for the evening—which it did not!

There was consternation when it was found that the crest had gone from its position of honour, but all was well in the cold light of dawn.

The crest was discovered attached to the brewers' sign of a nearby public house. It is believed to have been taken there by "poachers" from another village who were jealous of their go-ahead, nautically-minded neighbours!

* * *

A WAY OF LIFE

A French pilot of the First World War named Joseph Frantz, credited with the first victory in aerial combat, has been raised to the rank of commander in the Legion of Honour.

Frantz shot down a German "Avitik" two-seater in a dogfight on 5th October, 1914, while piloting a French Voisin biplane.

THE NAVY'S STRENGTH IS UNITY OF PURPOSE

TAKEN from the Admiralty News Summary of February last, the following remarks were made by the Earl of Selkirk, First Lord of the Admiralty, in replying to a debate in the House of Lords, on a motion moved by Admiral of the Fleet, the Earl of Cork and Orrery, that the depleted strength of the Royal Navy created a dangerous situation.

"I must make it clear to the House," the First Lord said in his reply, "that interdependence is absolutely fundamental to our position at the present time. I think it is quite clear that at the present time we should be entirely wrong not to work in the closest association with our Western allies."

The First Lord then turned to wider issues. "Most of the remarks today have referred to the Atlantic, but I would emphasise that the Royal Navy is still deployed on a world basis, and I am sure it is right that this should be so. We still have important bases at Malta, Gibraltar, Aden, Hong Kong, Singapore, and elsewhere, which contribute greatly to the influence we are able to exercise. Noble Lords may argue (and I am not going to deny it) that the number of ships we keep on station seem thin, but they can be backed up and reinforced quickly.

"In mentioning the possibility of global war I would stress that we are preparing against it with Allies. We have agreed the broad strategy and plans. We are accustomed to working in close co-operation with the other N.A.T.O. Forces. We have a command structure which exists from the Levant, in the South, up to the North Cape—something we have never attempted to achieve before. We have a great deal in common in the research and development field. I do not think that so high a measure of confidence in the military field has ever existed between countries as exists at the present time among the countries of N.A.T.O."

STATEMENT BY THE FIRST LORD OF THE ADMIRALTY

The First Lord next said he wished to speak about the size and shape of the Fleet. "We are going through an extremely difficult period of change," he said, "which is both expensive and rapid—rapid, not because scientific discoveries are produced rapidly, but because they succeed one another with great rapidity. Any entirely new development will probably take ten years to come into full operation, and the cost is ten, twenty or thirty times as much as it was twenty years ago. A new carrier costs up to £40 million; and a frigate from £3 million to £4 million. The complete modernisation of our amphibious warfare ships might cost up to £20 million. This is roughly the background to the Government's task of maintaining the Fleet. The cost of the Navy as a percentage of Government expenditure in 1927-28 was 6.9 per cent. In 1958-59 it was 6.7 per cent., which is closely comparable.

"The cost of modern equipment makes the amount we can have today much smaller than we were able to have in the past," the First Lord went on. "Noble Lords who have referred to the complaints of N.A.T.O. commanders that we have not enough "hardware" should remember that they were talking about N.A.T.O. as a whole, and that what they said applies not only to us but to all the other N.A.T.O. countries, who are open to exactly the same criticism as we are. We have borne a pretty good share of N.A.T.O. expenditure.

"On the question of whether we should equip the Navy with completly up-to-date ships or be content with, second-rate ships—that is, ships without modern radar and asdic and relying on the equipment we used during the war; whether we should have more ships of a rather lower standard or fewer ships at a high standard. The Government have come to the conclusion that it would be wrong to have second-rate ships. In the first place, the Soviet Union have a tendency to sell or dispose of certain ships to various other countries, and it would be quite wrong for us to call on our Navy to meet good ships or ships better than we have. We might then be outclassed in the cold war.

"In the second place, it would have a bad effect on the morale of sailors who are asked to work with equipment which they know is anything but first-lass. Thirdly, it would reduce the flexibility of the Navy, which would mean that ships could not be used to deal with any situations when it arose. Fourthly, of course, it would make co-operation with our N.A.T.O. Allies less easy. For those reasons, we think that it would be wrong to have any but first-class ships.

On the build-up of the new Fleet the First Lord went on: "Over the three-year period from January, 1956, to January of this year we have brought into service two aircraft carriers, 14 destroyers, 26 frigates, 12 submarines and more than 80 minesweepers and smaller vessels which are completely new or completely modernised; and during the next two years we shall have commissioned from new construction one carrier, three cruisers, ten frigates and a number of submarines and small craft. So I think it is fair to say that, with some 40 ships building at present, we are getting on with trying to see that the Fleet is kept thoroughly up-to-date.

"If I may sum up quite shortly, I would say that we in the Admiralty are not complacent. We do not underestimate the Soviet threat; and we are not less conscious than anyone else of the dangers of the world we are living in. The forces of the N.A.T.O. Alliance, backed by the nuclear power of the West, present a formidable deterrent to a major war in any form. There remain the national day-to-day commitments of a country with world-wide interest. I would add only this. We are trying to learn the central lesson that history has, I think, taught us; that is, to prevent war by maintaining the unity of N.A.T.O., and to form a solid practised naval alliance, whose united confidence is the surest shield against war-like ambitions. The Government have no illusions in regard to the vital role which the Navy can and must play in this task."

OIL SUPPLIES FOR WESTERN EUROPE

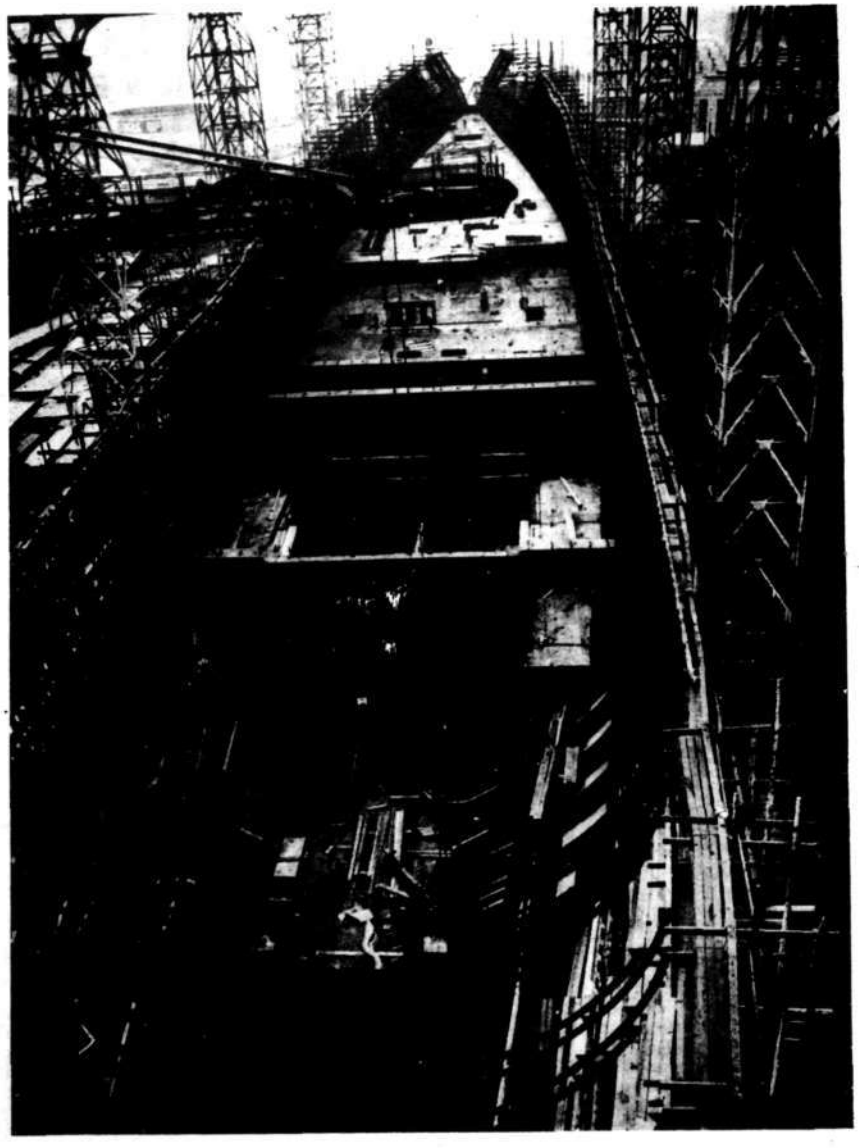
AGAINST a background of trouble in the Middle East, the reorganisation of Allied Oil supplies to N.A.T.O. countries is being rushed ahead. An invisible web of oil pipes will soon be pumping the lifeblood of commerce into the great manufacturing centres.

The longest pipeline in Europe as yet is one built by Esso and B.P. in Germany. It runs from Wilhelmshaven, the old German naval base, now transformed into a port for tankers, to Cologne some 200 miles away. Shell and Caltex are laying a second line 160 miles long from Rotterdam to Cologne, which will be ready next year.

The Suez Canal crisis of 1956 demonstrated with alarming clarity Europe's dependence for the bulk of its oil supplies on a part of the world that was by no means dependable. The discovery of rich oil fields in the Sahara have done something to offset an unfortunate position, but have not entirely removed apprehension.

Beginning at Marseilles, a 30 in. pipe-line will be laid

(Please turn to Page 19)



Seen opposite is the latest photograph of P. & O.'s 45,000-ton passenger liner, "Canberra", which is at present in building at Harland and Wolff, Belfast.

Liner Building in Britain

The Cream of the Trade

from "The Maritime Journal"

DESPITE strong and often successful competition from overseas in other spheres of shipbuilding, British yards retain their position as the world's leading constructors of large passenger liners.

British shipbuilders have on order at the present time, ten liners of 20,000 gross tons or over, totalling about 260,000 gross tons. A liner contract is considerably more valuable—both in price and diversity of work—than that for any other type of vessel.

Although the liner tonnage on order represents less than 5 per cent. in volume of the total order book of the shipbuilding industry, its value, at just under £80 million, is little less than 10 per cent.

The major liner project in Britain at the moment is the building of Peninsular and Oriental Steam Navigation's 45,000-ton vessel, "Canberra". Under construction at Harland and Wolff's Belfast yard, she will be the biggest unsubsidised liner to be built in the world since the "Queens" in the 1930's. Her keel was laid in September last year and she will be launched around the end of next year.

The "Canberra", which will cost about £15 million, constitutes the major part of a £30 million programme by the P. and O. group to expand its services in the Pacific. Her working partner in the new Britain-Australia Pacific service will be Orient Line's £13-£14 million vessel "Oriana". This ship will be of 40,000 gross tons in size and is under construction at the Barrow-in-Furness yard of Vickers Armstrongs. Work began on her about the same time as on the "Canberra" and she also will be launched towards the end of 1959.

Both liners will enter service in 1961. Together they will provide accommodation for about 1,200 first and 3,100 tourist-class passengers and, with a speed of 27 knots, will cut the passage time from London to Sydney from the present four to three weeks.

A measure of the rise which has taken place in shipbuilding costs since the war is that the "Oriana" will cost about 50 per cent. more than the value of the entire Orient Line's pre-war fleet. Much of this higher cost has been due to inflation, but a considerable proportion reflects the greater comfort offered to passengers on modern liners, particularly in the tourist class.

Liner operators are undertaking a considerable risk in building new vessels at today's prices but they realise that, if they are to compete effectively with air transport and retain their present share of the international travel market, they must offer greater amenities in the tourist sector, which will provide the great bulk of air and sea passenger revenue.

The British and Commonwealth Shipping Company also has under way a huge liner-building programme for its subsidiary, Union Castle. About £60 million will be spent on building new Union Castle ships during the next 10 years. The Line recently received delivery of the 29,000-gross tons "Pendennis Castle" and it has still on order the 38,000-tons "Windsor Castle" at the Cammell Laird, yard, and the 30,000-tons "Transvaal Castle" at John Brown's.

The "Windsor Castle", which is expected to cost nearly £10 million is well advanced on the building stocks and will be launched in June next year. Her maiden voyage will probably take place a year later and she will be joined on the Britain to South Africa mail run by the "Transvaal Castle" in January, 1962.

Both the new liners will be able to complete the voyage from Southampton to Cape Town in 11 days, compared with the present 13 days. This faster general service, however will have to await the building of four more mail-ships; seven vessels then will be able to maintain the route in place of eight at present.

The remaining large ship-building programme being carried out in British yards is for Royal Mail Lines. Three 20,000-ton liners—to be named "Amazon", "Aragon" and "Arlanza"—are on order with Harland and Wolff, Belfast. The cost of the programme will be between £15 million and £18 million and the three ships are destined for Royal Mail's London to South America service. They will replace the four aged "Highland" class vessels on the route.

Each ship is about 6,000 tons bigger than the Highland types. There will be 100 first, 100 cabin and 270 tourist class berths in each liner and all the passenger accommodation will be air conditioned.

BRASSEY'S ANNUAL—1958

Reviewed by Rear Admiral R. G. Thomson, C.B., C.B.E., in "The Navy"

Every year "Brassey's Annual" continues to provide much food for thought for all who are interested in the work of the Armed Forces and in their strategy, tactics and training for war. The editor—a former instructor at the Naval Staff College — has himself made a prolonged study of the problems of Imperial Defence and the reader can thus be assured that the contributors to his Annual are all thoroughly qualified to write on the subject. But this latest issue is of more than usual interest because of the many articles dealing with the H-bomb and the new and difficult problems which arise from its existence.

The editor starts the ball rolling in an opening chapter "The Object in War." He rightly argues that the thermo-nuclear weapon, because of its widespread destructive effects, is a weapon of policy rather than of war. The ultimate object in war, he adds, is not the mere waging and winning of it but the organisation of the peace which the war was undertaken to win. Richard Goold-Adams, in an article which could logically have followed the opening chapter, sets out the arguments, political, moral, economic and military, put forward by those who are opposed to Britain adding her quota to the deterrent.

With the exception of Dr. Brodie, who writes as a United States citizen, the contributors dealing with this subject are all convinced that neither East nor West will deliberately commit suicide by initiating the use of the H-bomb. But in some of the articles on strategy and on war planning the writers seem either to have forgotten the pronouncements of the N.A.T.O. Governments and military leaders or to have ignored them. Professor Sokol, for example, who discusses "Naval Strategy To-day" in a chapter of particular interest to naval readers, expresses the same view about the H-bomb. "The price of committing suicide," he writes, "by waging an H-bomb war would be too excessive for Communism." Yet he assumes that the Soviet land forces would, as their primary object, endeavour to reach the Atlantic Coasts of Western Europe.

A SYNOPSIS OF SERVICE THINKING

How can this assumption be accepted in the face of paragraph 12 of the current Defence White Paper? It reads as follows: "The strategy of N.A.T.O. is based on the frank recognition that a full-scale Soviet attack could not be repelled without resort to a massive nuclear bombardment of the sources of power in Russia." None the less the strategy he recommends for the N.A.T.O. Navies would be equally applicable if there were no aggression in Europe. He emphasises the importance of reinforcing the local navies guarding the exits from the Baltic and Dardanelles and of preparing plans to operate in the Arctic seas. Indeed the North Siberian route could with advantage have been discussed at greater length. Since the 1930's the Soviets have made great efforts to open up this route to shipping—one recalls in this connection the voyage from West to East in 21 days of the German armed raider "Komet" in 1940. Moreover, the Polar voyages of the "Nautilus" and "Skate" have proved that Russian nuclear powered submarines will be able to navigate with impunity in this region and we may expect the majority of them to be based on North Siberian harbours.

The Professor's article thus loses none of its interest and value despite the doubtful premises on which it is based. Present Soviet policy suggests the likelihood of local wars in underdeveloped countries in the Middle or Far East, any one of which might well gradually develop into a major war. But in view of the Defence White Paper—and the now generally accepted belief that both sides would do their utmost to avoid the use of the H-bomb—it would in all probability be a largely naval war. Indeed it would scarcely seem advisable in the circumstances even for N.A.T.O. troops to be landed to support up-risings in the satellite countries. Equally, the surest way of starting an H-bomb war is to drive the Russians to despair by the use of conventional explosives to obliterate their cities with saturation bombing.

These considerations add great importance to the article by Dr. Brodie who writes on "Limited War." He argues that a war is no longer limited because the objective is limited, but because it involves a deliberate restraint on both sides. It means, in fact, that "there will be no strategical bombing between the United States and very satisfactory that Dr. Brodie goes on to warn his countrymen of the danger of using tactical nuclear weapons in a local war. "Many Americans," he writes, "including high officials in the Government, insist that if our response to an aggression has to be limited geographically, at least it must be atomic." This view, he adds, suggests that we are still in a monopoly position, but if we visualise these weapons being used reciprocally, their advantage does not seem so great. In any event, what is a tactical weapon? The yield of the first A-bomb on Japan is now regarded as falling entirely inside the tactical range. Dr. Brodie concludes this most interesting chapter by reminding us of the enormous military advantage gained by striking first in an H-bomb war. For this reason, he suggests, it is premature to assert that total war has now been abolished.

Colonel Wyndham, in an informative chapter on the organisation of N.A.T.O., also refers to the danger of using tactical nuclear weapons, but shows some confusion of thought when discussing their use by the N.A.T.O. forces in Europe—commonly known as the Shield. Once they are used by the Shield, he argues, the dividing line between it and the Sword —the H-bomb deterrent—becomes indefinite, which presents great difficulty. Why so? Soviet aggression in Europe postulates the use of the H-bomb. Why, then, not use tactical nuclear weapons at the outset, thus reducing the manpower required for the Shield? In an H-bomb war the Royal Air Force becomes of the highest importance and Air Marshal Sir Robert Saundby thus inevitably discusses its role mainly in relation to the atomic age. Contrary to Dr. Brodie he suggests that a war is limited not by the weapons used but by its limited and clearly defined aims. Hence a limited war will not be made more serious by the use of tactical nuclear weapons which will soon become standard equipment.

Rear-Admiral Horan contributes two articles, the first describing N.A.T.O. naval exercises in 1957; the second surveying the work of the Armed Forces during 1957/58. His facts are not new but it is important to be reminded of the great progress made by the N.A.T.O. Navies in working as a team and of the constant and unobtrusive work of the Fighting Services. The N.A.T.O. exercises were all applicable to any form of war, but some of them suggest that the N.A.T.O. naval authorities still do not "see straight." Certainly as far as Britain is concerned, in "a sudden full-scale attack on the N.A.T.O. countries"—that is—an H-bomb war—the task of survival would be a job for Civil Defence rather than for navies and merchant navies. Indeed, judging by our meagre large-ship contribution—two carriers and two cruisers — to the N.A.T.O. Navies, the British Government also hold this view and pin their faith on the deterrent to prevent war. The true situation can be stated quite simply and the sooner it is realised the better it will be for the country. Human nature has not changed and the East—like the West — will not deliberately commit suicide. But the West has warned the East that it would prefer suicide to the loss of its freedom and way of life. While the East has given ample evidence that it will, if essential, as a result of its subversive policy, fight the West in a war largely, if not entirely, fought between the maritime forces of both sides.

The civilian who wishes to understand the functions of the various types of units that make up a fighting navy will find his answer in the second of Vice-Admiral Schofield's two articles entitled "A Balanced Fleet." In his earlier article he gives a bird's eye picture of the strength and composition of the navies of foreign powers. Fully to understand his second article, it is essential first to read his "Foreign Navies," as the United States is the only country that can afford all the types of ships required under modern conditions. Unlike works of reference, this chapter explains what is meant by a guided missile ship. The term specifically applies to vessels armed with the surface-to-air A/A guided missile. The U.S. carriers and cruisers equipped to launch the offensive surface - to - surface guided flying bomb—the "Regulus"—are not guided missile ships and are no longer so classified. One is left wondering, however, what type of ship the new U.S. nuclear-powdered cruiser now authorised is to be. She is dispensing altogether with guns but is equipped with both kinds of guided missiles.

The Admiral defines a balanced fleet as one composed of ships which acting together, can both deliver and repel all forms of attack currently possible. The N.A.T.O. Navies, he maintains, are not up to that standard. They have not that close co-ordination required of a balanced force—as the Allies had in the last war—and should be reorganised on a unit basis, each unit being complete and balanced in itself. Thus, some navies would contribute both cover forces and escort groups, others only the latter. But the writer's main point is to show that neither our contribution to N.A.T.O. nor our Far Eastern Fleet is balanced or properly equipped for the task it has to perform.

This is, of course, obvious to the naval reader, but it might be well also to quote the comments on the current Defence White Paper by Admiral Sir Charles Daniel, a former Commandant of the Imperial Defence College. "In my view the

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* "Brassey's Annual, 1958." Edited by Rear-Admiral H. G. Thursfield. (William Clowes and Son Ltd).

(From Page 13)

proposed naval forces will be completely inadequate to discharge their peace time and limited war responsibilities . . . By their ability to do so, they form an important part of the deterrent and to under-insure in this matter would be folly." In any event the writer of this informative and instructive article cannot be accused of exaggeration. He sums up the ships we require to meet our commitments as follows: 7 (light) fleet carriers—which we shall have when the "Hermes" is completed; 10 guided missile ships (one recalls that four were ordered some years ago!); and 30 destroyers; together with as many formed groups of convoy escort groups as may be necessary to meet our Treaty obligations. Visalising the future, he adds that the equipping of submarines with rocket weapons may well prove the "ultima ratio" in armaments and that we must lose no time in developing the nuclear-powdered submarine.

Training in the Services is the subject of several articles, notably one by Captain Banks, R.M., who writes on "Cold Weather Warfare Training in the Royal Marines"; and a most enjoyable, if controversial, article by Vice-Admiral Sir Aubrey Mansergh on the desirability of resuming training in sail. The chapter by Lieutenant-Commander Ross on "The New Naval Discipline Act" is useful as a ready reference when comparing the old and the new Naval Discipline Acts. Many more of the 29 chapters of this issue will also prove of much interest and value to naval readers and there is also a most useful reference section at the end of the book.

CEREMONY AT THE POLE

USING a television device and whip-like antenna to find thin places in the ice, the U.S. atomic submarine "Skate" surfaced at the North Pole with the ashes of Sir Hubert Wilkins, the Australian-born polar explorer who died last December.

The submarine commander said that his men left the boat and put a table on the ice. Someone provided red torches. As the snow whirled around them, one of the officers read a prayer that Sir Hubert himself had written. His ashes were then given to the strong wind that scattered them far and wide. A rifle squad fired the last salute.

ATOMIC SUBMARINES

The U.S. atomic submarine "Skate" has returned from her second trip under the ice surrounding the North Pole. A few marks and some rust on her sides were the only visible signs of her 3,090-mile voyage, during which she surfaced and examined the nature and characteristics of the polar ice in winter. As a result, it is now apparent that an atomic submarine is capable of staying hidden under water indefinitely, and can surface from under ice in any weather and fire missiles.

What this means in a wider sense was referred to by Vice Admiral Pirie, Deputy Chief of the U.S. Navy's air operations. In speaking of Soviet submarines, the Admiral said, that armed with nuclear missiles, these constituted a far greater danger to national security than anything yet developed. Increasing in numbers, the menace would become even greater when the Russians launched atomic submarines. As things stood, the only way to combat existing submarines armed with rockets was to sink them before they fired their missiles. In the case of atomic submarines, however, it was extremely difficult to detect them.

In its latest annual report, General Dynamics Corporation, which makes American atom-powered submarines, forsees the day when such craft could remain off the coasts of an enemy country for indefinite periods.

MYSTERY CARRIER

By Robert N. Sheridan — from "The Navy"

The legend of the "Shinano" has grown with the years and so too has the confusion as to her appearance and characteristics. Recent articles in United States and Japanese periodicals, compiled from interviews with Japanese naval authorities and access to the Second Demobilisation Bureau's report "General descriptions of the 'Shinano,'" are in agreement on the basic information about the giant carrier.

"Shinano" was laid down at Yokosuka naval base on April 7, 1940, as a third battleship of the "Yamato" class. Construction proceeded in a specially constructed dry dock screened by high standstone cliffs. During late 1940 and early 1941, work on the "Shinano" was slowed down as materials and manpower were utilised in the more urgent aircraft carrier and conversion programme. Early Japanese successes in sinking American and British battleships cast doubts on the utility of the "Shinano" and construction was slowed even further.

After Midway, the Japanese need for replacement carriers led to plans for converting several ships already under construction into aircraft carriers. "Shinano" was one of these. Vice-Admiral Sei-ichi Iwamura, Chief of the Naval Technical Bureau, and Vice-Admiral Keiji Fukuda, the designer of the "Yamato" class, worked jointly on plans to convert the "Shinano" into a strong floating base, capable of landing, launching and supplying naval aircraft operating from land bases or other carriers. The ship would carry no planes of her own and would have no facilities for storing aircraft. In combat, the "Shinano" would have become a huge unsinkable spare flight deck from which aircraft could refuel and rearm to fight until destroyed or until fuel and ammunition were exhausted.

Naval air headquarters preferred a design change which would make the "Shinano" a true aircraft carrier, and, after lengthy discussion, a compromise was approved. "Shinano" became a 68,000 ton island-type carrier capable of supplying many aircraft but carrying only 18 fighters, 18 attack planes and

six scouts. A reserve of five aircraft was also carried aboard. Final plans were completed in September, 1942, but work on the conversion had already begun during that same summer.

When conversion began, the hull was complete up to the main deck. It was a battleship hull with triple bottom and armoured bulges and the plans called for merely placing flight deck, island, and hangar facilities upon the already completed structure. Great emphasis was placed upon armour protection and in many instances the planned battleship armour was retained but in a lesser thickness. The belt was reduced to eight inches instead of the original 16 inches, while the barbettes and magazines now had seven-inch protection. Inside the huge barbettes, high speed armoured elevators were installed to take bombs, torpedoes and ammunition directly to the flight deck. The magazines were converted to handle aviation ordnance.

The one level hangar was divided into two sections by an athwartship armoured bulkhead. The forward section of the hangar was to house the fighter complement and the after section, the balance of the aircraft. Much of the hanger deck was open on the sides with rolling steel shutters which could be closed during rough weather, as in most American carriers. The flight-deck was covered with three-inch armour over which was placed a latex-sawdust-cement substance, this being used in place of flight deck lumber which was in short supply. In all, 17,694 tons of armour were included in the carrier.

"Shinano's" protection was not all passive, but she carried 16 five-inch A.A. guns in twin mounts and 140 25 mm. machine guns, mounted in 33 triple mounts and many twin and single mounts. In addition, 12 4.7-inch multiple rocket launchers were installed in twin mounts, each launcher capable of firing 28 or 30 rockets at one salvo. "Junyo" is also said to have carried such rockets, but in both instances information as to the appearance and location of these lunchers has not been forthcoming.

After the battle of the Philippine Sea, work on "Shinano" reached a fever pitch with the result that the ship was floated on November 11, 1944, and commissioned on November 19. After a brief shakedown in Tokyo Bay, the carrier was ordered south to the safer waters of the inland sea. "Shinano" departed from Yokosuka at 1800 on November 28, for her first and only sea voyage, carrying with her a large number of yard workers. Destoyers "Hamakaze," "Isokaze" and "Yukikaze" formed her escort. At 0317 on November 29, United States submarine "Archerfish" fired six torpedoes at a "Shokaku" class carrier and heard four of them hit. "Archerfish" went deep to avoid the destroyer counter attack and lost contact with her target.

"Shinano" had been hit by four torpedoes near the stern, but her Captain, confident that his ship was unsinkable, held speed at 18 knots over the rough seas. The "Shinano's" unfinished condition gradually became apparent as sea water flooded the damaged compartments and began to penetrate other parts of the ship. Watertight packing around cables and pipes was leaky or non-existent and many watertight doors were not yet fitted. Damage control crews were unable to contain the water even when speed was finally reduced. Counter flooding equipment was also ineffective. At 1018, November 29, the carrier rolled over and sank with almost half of her ship's company.

"SHIP YARDS AMONG BEST IN WORLD"

"Australian ship building 'know-how' was equal to that of any other country," the general manager of the Australian Coastal Shipping Commission (Mr. F. J. Mercovich) said recently.

World-class designing and work techniques had cut four months off the construction time of the new £1,500,000 Bass Strait car and passenger ferry.

The ferry, which is being built at the State Dockyard, Newcastle, was originally planned to go into operation in November this year.

"BULIMBA"

WHEN the "Bulimba" (6,800 tons) completed her trials and was handed over to her owners, the British India Steam Navigation Co. Ltd., the ultimate result of months of planning and building was seen. The first of five new cargo liners being built by Messrs. Harland & Wolff Limited, she incorporates many unusual features; the most noticeable being the position of the machinery — there being one hold aft of the engine room — the presence of a long poop and the arrangement of deck cranes and streamlined mast.

All weather deck hatches are large and closed by single pull MacGregor hatch covers arranged for push-button control whilst the 'tween deck hatch covers will be flush MacGregor pattern hydraulically operated and remotely controlled from the weather deck. Cargo handling gear is of two types:—

(1) Five 3-ton electric deck cranes covering No. 1., the forward part of No. 2., the after part of No. 3., and the whole of No. 4. holds.

(2) Electric winches operating 4×10 ton derricks with electric topping winches covering the after part of No 2 and the forward part of No. 3 holds. In addition the skylight structure over the engine room is arranged in the form of slab hatch covers and No. 4 deck crane may remove these and plumb the engine room itself.

All the cranes are of Asea manufacture and three tons capacity. At the request of the British India Steam Navigation Company Ltd., the handling platform has been extended slightly to give the operator a good view of the hatch opening and overside working. The four A.C. electric cargo winches with Ward Leonard control are of Clarke Chapman manufacture, as are the windlass and two warping capstans aft. Deep tanks for the carriage of edible oil and water ballast are arranged at the after end of No. 3 lower hold.

The propelling machinery consists of one two-stroke cycle, single-acting, opposed piston, eccentric crosshead type deisel engine of the Harland & Wolff —B & W latest design, having six cylinders 620 mm. bore with a combined stroke 1,870 mm. and fitted to burn heavy oil. Turbo-charged by two Napier type MS500/4 pressure charged blowers. this engine is designed for a maximum output of 6700 BHP. Service speed is 16 knots.

The "Bulimba" will operate on the Company's Service between Australia, Asia and the Persian Gulf. She left London on April 11, on her maiden voyage after loading, for Karahi, Bombay, Madras and Calcutta.

The Master of the "Bulimba" is Captain W. E. Davies who joined the Company as a Junior Officer in March, 1927. The Chief Engineer Officer is Mr. J. G. Byers, who joined the Company as a Fourth Engineer Officer in March, 1935.

The m.s. "Bulimba" is the second ship owned by the B.I.S.N. Co Ltd. to bear this name; which is after a suberb of Brisbane, Queensland, Australia. The first of 2,503 tons gross was acquired by the Company in 1899, and was sold in 1922.

Nautical Notes From All Compass Points

THE QUEENS TO BE REPLACED

THE 80,000-ton Cunard liners, "Queen Mary" and "Queen Elizabeth", are expected to be replaced by super-liners on the Southampton-Cherbourg-New York run. The Cunard company have asked for Government help in rebuilding, because of big subsidies given to their American competitors.

The first news that the British Government were considering the question of replacing the "Queens" was announced in Parliament by the Minister of Transport, Mr. Harold Watkinson. In answer to a question, he admitted that the matter had already been discussed with the Cunard company, in whose organisation the Government were already a shareholder.

Between them, these two ships have carried more than 1¼-million passengers. In addition, they each transported about 80,000 troops during the Second World War. Some of them were Australians.

Built in 1936 and 1940 respectively, the "Queen Mary" and "Queen Elizabeth" both exceed 80,000 displacement. They are the largest ships afloat.

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BUDGIE TROUBLE

EVEN Queens have trouble at times. A pet of the wardroom, a budgerigar named Joey, was put off the liner "Queen Elizabeth" because some members of the crew said that he was a Jonah.

He was certainly a stowaway, for he joined the ship a couple of months ago without a ticket. Since then the liner has been dogged with gales, hurricanes and fogs that have repeatedly slowed down her crossings. Superstitious sailors whose leave had to be cut began to blame Joey; rumours were started, and, finally, the Captain had to order him ashore. Joey, who had made ten Atlantic crossings, is understood to talk freely about his experiences in language reminiscent of wardrooms anywhere.

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THE SKIN GAME

PROFFESSORIAL effort at Cambridge University is reported as being directed towards experiments with a flexible skin barge which it hoped will reach a stage where it will be able to transport up to 10,000 tons of crude oil, petrol or kerosene, or even light solids such as grain.

BASS STRAIT FERRY

SCHEDULED for the Melbourne-Tasmania run, the £2-million car ferry, Princess of Tasmania, should be undergoing sea trials in August. Built in Newcastle (N.S.W.) the 4,600 ton "Princess" is designed to carry 124 cars and 334 passengers. Her owners, the Australian National Line expect great things of her.

Those taking a car to Tasmania or the mainland will drive straight on to the ship through a loading hatch cut in her stern, and along the port side to a car park where quick-release gear secures the vehicle against damage in a seaway. Loading and unloading should take less than an hour. Passengers have the choice of a cabin berth or comfortable chairs in two large lounges.

Special docks to facilitate loading are being built at Melbourne, Devonport, Burnie and Bell Bay, into which the "Princess" will manoeuvre with the aid of bow propellers.

The Master of the "Princess" will be Captain W. B. Williams, whose most recent command was "Eugowra" on the Melbourne-Devonport run.

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LENGTHY LAW SUIT

LITIGATION extending over twelve years following an explosion in the steamship "Mahia" was recently concluded in Melbourne. The effect of the judgment is that 39 consignees of cargo are entitled to recover some £50,000 in damages.

Ten ship's painters and dockers trapped below were killed in the explosion which occurred in August, 1947.

SEVEN LARGE TANKERS FOR THE AUSTRALIAN TRADE

SEVEN huge petrol tankers, four of which exceed 40,000 tons, will be delivering oil to Australian refineries within the next two years. Two of them have been chartered by the Vacuum Oil Co. With a capacity of 87,000 tons, these two ships will discharge at Adelaide and Melbourne.

Designed to carry 23-million gallons of crude oil, these tankers will be 855 ft. long and 122ft. wide. With a loaded draught of 47 ft. they will not be able to berth in Melbourne, until part of their cargo has been drawn off in Adelaide.

Two other tankers each with a capacity of 46,500 tons of crude oil will come into service with the Vacuum Oil Co. later in the year. Both ships are nearing completion, one in Sweden, the other in Japan. When finally run in, these vessels are expected to make the voyage from the Persian Gulf to Melbourne in eighteen days.

The 32,000 ton tanker being built for Ampol Petroleum Co. at Whyalla will be the largest vessel to be built in Australia. Another tanker of 24,700 tons deadweight is also being built for Ampol in Belgium. It will be used between Sumatra and the Kurnell refinery in New South Wales.

To be in service by 1961, a tanker of 27,500 tons is being built for H. C. Sleigh Pty. Ltd. This ship will run between Sumatra and Botany Bay.

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DRIVEN BY EXHAUST GAS

QUOTED from the "Petroleum Gazette", is an account of the trials on the Clyde early this year of the new ore carrying ship "Morar", built by Rankin & Blackmore Ltd. of Greenock.

The "Morar", 9,200 tons, is the first ocean-going ship to be powered by free-piston exhaust gas-turbine machinery. The turbine, driven by exhaust gases instead of steam, is supplied by three diesel gasifiers. The power unit develops 2,500 shaft H.P. and has a service speed of 11 knots.

The turbine installation is the product of the Lithgow Power Development Co., a company formed for the purpose of promoting this pioneer enterprise. A more powerful turbine of the kind is to be installed in a vessel of 11,300 tons which is being built by the same firm for the Tresta Shipping co. of Nassau, Bahamas.

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ORIENT AND PACIFIC LINES

FORMED by the P & O Company and Orient Line with a combined fleet of twenty-eight 30,000-tons ships, the joint enterprise indicates Britain's estimate of the potential of the Pacific as one of the world's great passenger shipping areas.

Schedules of sailings worked out provide for sailings from Sydney to North America, either on the direct route via Auckland and mid-Pacific ports, or via Manila, Hong Kong, Japan and Hawaii.

OIL SUPPLIES FOR WESTERN EUROPE

(From Page 9)

across France to Strasbourg. From there a connecting pipeline, which must run under the Rhine at one point, will be laid to Karlsruhe, the entire distance being 480 miles. The advantage in piping oil in this way into Germany is that it cuts out the long tanker haul through the Mediterranean, around Spain and France, and then down the Rhine by barge. Pipe-line costs are considerably less than tanker costs.

There is a further plan to extend the French pipe-line further northwards, and so connect with the other two lines at Cologne. The gap between Karlsruhe and Cologne is only 150 miles.

French interest in this pipeline project is tremendous, because it is hoped that oil from the Sahara will flow into Europe by this means. Costing something in the nature of £35-million, and due to be completed by 1961, most of the large oil companies have pooled resources in a special company, formed to construct that section of pipe-line from the Mediterranean to Strasbourg.

THE NORTHERN BEAT

from "Logbook" — the Queensland Sea Cadets' Magazine

AT 0300 one Saturday morning in August, 1958, I arrived at the Darwin Wharf to join H.M.A.S. "Emu". On the wharf were various characters sipping beer and making ribald remarks to each newcomer. However, they were quite helpful in lowering baggage over the wharf side on to the ship which was 20 ft. below. They also were most careful to point out where the rungs of the 20 ft. ladder were missing when passengers slowly wended their way down. Actually, there were only four passengers—all of whom were to be dropped along the way after completing their specific jobs.

H.M.A.S. "Emu",' a 250-ton diesel tug under command of Lieutenant Commander A. M. Downs, R.A.N.R.'s, was on her way for a refit in Sydney after two years of patrol duties operating out of Darwin. Many strange and interesting trips had she done and many more she will probably do, but this trip will stand high in her list of achievements.

Saturday and Sunday were rough. The main deck was constantly awash, the mess decks had inches of water over them, the forepeak became flooded and the forecastle awning was forcibly removed. I was fascinated watching my shoes and hat washing from one side of the cabin to the other, but too sick to do anything about it.

Just before daylight on Saturday morning, Bill Shepherd wakened Jake, the Chief E.R.A., to tell him that the bilge pump would not work. Cursing aloud, Jake forced his way into the engine room to see what could be done. Thus commenced almost continuous attemps over a period of 12 days to keep the water down in the bilges. The main bilge pump was repaired only to break down again. The auxiliary pumps proved useless and the hand pumps had to be manned.

On the Monday, "Emu" anchored in a small bay in the Wessel Islands, but despite every effort to make the pumps work, everyone had to work on the hand-pumps to lower the water sufficiently for the main engines to turn over. At this stage, a message was sent to Darwin for spare parts and a motor pump to be delivered by 'plane or ship, and on the following morning an R.A.A.F. 'plane made a drop on a small beach on Marchinbar Island.

Several trips were made ashore by the fortunate few, and we met an almost primitive tribe of aborigines. Primitive to the extent that they are visited only once or twice a year by a far away Mission. The tribe consisted of the hereditary King of the tribe called (phonetically) "Singaloo", whose father and grandfather had lived and died on the island. With him were four "Marys", four boys and piccaninnies. The homes consisted of half tanks and completely ignored were the well-founded latrines and bathrooms close by, presumably left there since World War II. For a tin of "baccy" Perce obtained a woomera and spear, and Jake, Bill and I obtained several grass mats for an old pipe, cigarettes and a mouldy loaf of bread.

The whole engine room crew now almost out on their feet, and the rest of the crew were not much better. Tassie entertained crew members around the mess table telling dits—ably supported by Bill, Bungey, Jack and Boats. It was during this session that a hunt was made for two steel balls—for what purpose I have yet to find out.

At 1500 on Thursday, H.M.A.S. Fremantle was due to arrive, but continued heavy weather in the Arafura Sea delayed her until 1930. Then a team of engineering experts descended on board "Emu" and effected temporary repairs —sufficient to allow her to proceed on her way. Even so, it was necessary for everyone to take a turn on the hand pump to lower the water in the engine room.

By G. B. O'NEILL
Secretary, Navy League
(Queensland Division)

Friday morning found us at sea, and as the weather did not improve, a course was set for Groote Eylandt. Bill had kept saying that "once we were in the Gulf we would be all right". Everyone on board hoped so, but we were to find that our troubles had only started.

On Saturday night, we anchored in Port Langdon, and on the Sunday, went ashore to visit the Mission Station. There we were shown round the mission and dropped one of our passengers who had a job to do. Very little happened here apart from two hours spent in a motor boat half-way to the shore, with Bungey and Bill almost pulling the motor to pieces to make it go.

The following day we prepared to sail for the southern part of Groote Eylandt with a native boy on board as "pilot". There was no time to repair the air starting valves, which had now refused to operate satisfactorily. Eventually, the main motors started, but until these valves were completely dismantled and refitted, it would be impossible to start the motors again or, if necessary, go astern.

It was necessary to go astern in a hurry at approx. 1430 when the water shoaled rapidly, desipte the "pilot's" assurance that "plenty water all over". As a result, "Emu" found herself on top of a sand bank, with a few rocks to make it interesting. On the falling tide, little progress was made with the kedge, nor with the assistance of the home-made motor boat manned by several aboriginal fishermen from the mission who had come out to meet us.

While we bumped on the bottom, the engine room crew repaired the air starting valves, and the seamen gathered around the stern swapping "dits" and fishing. Both pastimes were successful, for fourteen nice black bream were caught and, during one of the "dits", we were told of the trials and tribulations of a Chinese cook on board a tanker who didn't get paid. (There is an Act in Queensland which prevents me from giving you the full story).

The motor pump and hand pumps removed at least 5 tons of water from the bilges and, with a rising tide, use of the main engines and hauling in on the kedge, "Emu" came off the bank just after 0200 on Tuesday morning—12 hours aground.

While the rest of the crew remained on board carrying out necessary chores, the C.O., Pussa, Jim, Perce, Sparks and myself went ashore in the motor boat. The two other passengers had been sent ashore the day before in the mission vessel.

We proceeded up a small river until we reached a landing stage about a mile upstream. Leaving Pussa to look after the boat, we set off on foot along the three-mile track to the Mission. After a short distance the C.O. spotted a bicycle alongside the track, and without further ado, set off for the mission to send back transport. I understand he made a triumphal entry into the Mission, escorted by scores of native children.

In the middle of the afternoon we all returned (including the bike) by Land Rover to the landing stage, made our

last farewells, and pushed out to the middle of the river—where we became stuck. And this was the pattern down to the river mouth. There it was impossible to go any further. Quite an interesting situation with only one tide every 24 hours, little food and the prospect of a night on the beach. Fortunately, however, Sparks was able to go back to the ship in a native fishing craft and sent back some victuals. Whilst collecting the food from the natives, both Perce and I became bogged in a treacherous part of the beach, but finally freed ourselves with only wet shorts and sodden tobacco, matches and cigarettes to show for it.

A fire was built on the foreshore and there we dried our shorts, toasted mouldy bread, and each ate our quota of food (right down to the last part of the tinned pear!) Being an old sailor, Pussa elected to take the first watch, and the rest of us had little sleep before midnight with the story telling that went on. I took over after midnight, and was entertained with the snores, the caustic comments of one who constantly complained he was not getting enough of the fire, and the abrupt awakening of Perce, who dreamt two abos. had him around the neck and were pulling him along the beach.

Finally at 0300 we broke camp and waded to the boat where we remained for over two hours before the tide rose sufficiently for us to proceed. During this period, Perce claimed he saw a 15 ft. shark in 18 in. of water. He is still convinced.

Arriving back at the ship as dawn was breaking, we were greeted with (subdued) laughter by all on board. Shortly after we sailed for Port Langdon where we anchored till the following day.

From the time "Emu" went aground, the engine room staff slaved away in an effort to remedy the major and several minor defects. In desperation, they cannibalised a pipe from the cable locker, disconnected the main bilge line and fitted the pipe directly into the bilges. In this way it became possible to pump out all but a foot of water from the engine room. Thus, "Emu" sailed for Weipa.

It was quite interesting approaching Weipa with inadequate charts. There were beacons and buoys all over the place—placed there by the bauxite company whose plans were not held on board, despite all my efforts to obtain them before sailing. However, we had a small plan on board which enabled us to reach the entrance to the Embley River. Ahead of the ship was Pussa in the outboard swinging the lead constantly, with Bungey worried that the ship would run over the whaler. Creeping within 30 yards of the shore we entered the river, only to find that the channel was not where it should have been. Manoeuvring around and around with Pussa once more heaving the lead, "Emu" finally anchored in a reasonable depth of water and anchored for the night.

Apart from swamping the motor boat during the above evolutions, no one was at all concerned until they found out the next day that the mission station had arranged a picture show for us, and, far more disappointing, a grog party by the bauxite company. I was the bearer of this news (armed with several loaves of fresh bread from Jimmy Winn, the Mission Superintendent) when I returned on board late that Sunday night. The bread was a consolation prize, as we had had mouldy or "penicillin" bread for the previous week.

Whilst ashore I had the opportunity of speaking over the radio to several friends scattered all over the Gulf. Sailing from Weipa on Monday morning, we had no difficulty negotiating the channel, as the C.O. had obtained up-to-date charts from the surveyor ashore. He was Commander Hunt, formerly of the R.A.N., and now with the bauxite company.

By now one would have thought all our troubles were over, but just before arriving at Thursday Island, a further defect developed which required attention by an engineer ashore.

Can you blame me for leaving "Emu" at Thursday Island and flying back to Brisbane?

A SMUGGLING YARN

The Tall Ship. By James Dillon White. (Heinemann).

This is a smuggling yarn, but the contraband cargo is not brandy nor guns nor diamonds, but an odd assortment of human beings—16 all told—who are trying to escape from captivity into freedom. They are, in fact, war refugees, and their landfall is (so they hope) Palestine.

Captain Magraw is the chief smuggler, and his craft is a 50-year-old barquentine. To begin with, the voyage goes smoothly enough, but, in the end, the port authorities question his cargo, and the Captain is not allowed to unship it. Quite undaunted, he resolves to get his refugees into Palestine, even though it means sailing round the world. In a sense, it does mean sailing around the world—or at any rate around a very large part of it—and during the course of that voyage the veteran smuggler meets a woman, named Trudi, who adds romance to the tale.

—J.H.B.P.

THE UNITED STATES NAVAL ACADEMY

By REGINALD HARGREAVES — from "The Navy"

THE outbreak of the American War of Independence committed the second Continental Congress to the task of improvising both an Army and a Navy. To provide a nucleus for the latter the Marine Committee gave authorization for four vessels to be armed and fitted out for sea. To officer and man these craft an appeal was made to the mercantile marine and to the hardy fisherfolk of Salem, Marblehead, Providence and Baltimore. From the outset, however, the needs of the Navy had to compete with the far greater attractions of privateering. Sailing under letters of marque proved so profitable, in short, that some 70,000 prime seamen preferred the more individual and remunerative life of the privateersman to stricter service aboard a man o'-war. In consequence, the Continental Navy was never more than the simulacrum of a Fighting Marine; and this despite the weighty advice of John Paul Jones to "establish an Academy under proper masters" for the instruction of those intent on seeking a career in their country's Sea Service. Indeed, the whole question of establishing a permanent naval force was so bedevilled by emotional prejudice that within two years of the conclusion of the peace treaty with Britain the last United States warship was sold and converted into a merchantman.

In 1794 the raids on American commerce by Algerine pirates had reached such damaging heights that the authorities determined to reconstitute their Navy. Even so, no thoroughgoing school of instruction was founded to ensure a steady flow of trained Officers into the expanding fleet.

Then in 1843 an event occurred whose outcome was significantly to influence the manner in which future Officers were selected and trained for service under the Stars and Stripes.

Amongst the ship's company aboard the 10-gun brig "Somers" was Acting Midshipman Philip Spencer, the turbulent, unruly son of the contemporary Secretary for War. Thrust into the Sea Service in the forlorn hope that he might acquire a little discipline and self-restraint, he had speedily established himself as a malcontent ever ready to set his Captain's authority at defiance. At last it was reported to Commander Alexander Mackenzie that his rebellious subordinate was conspiring to murder the Officers, seize the ship, and turn pirate. Spencer and two fellow conspirators were promptly arrested and arraigned before a Court of Officers on a charge of "attempted mutiny." Evidence of their guilt was overwhelming, and by sentence of the Court they were hanged from the yardarm.

When the vessel eventually arrived in New York, news of the event occasioned tremendous public excitement and nation-wide controversy. Mackenzie was tried but exonerated by a Naval Court, since it was clear that he had done no more than his duty. What was equally obvious was the fact that the whole system of appointing Officers to the Navy was in urgent need of the most drastic overhaul, with particular emphasis on the necessity to exercise more care in the selection and training of Naval personnel.

Thus it came about that in the October of 1845 the Honourable George Bancroft, the contemporary Secretary of the Navy, took over the semi-moribund Fort Severn at Anna-

polis, Maryland, to accommodate 50 students, seven instructors, and a rigid disciplinarian — Commander Franklin Buchanan — as the United States Naval Academy's first Superintendent.

In the first instance, the Midshipman's course of instruction extended over five years. Of these only the first and last were devoted to tuition at the Academy, the intervening period being spent afloat; a concession to those shellback reactionaries who scoffed at the very idea of "training Naval Officers ashore".

With the progressive expansion of the United States Fighting Marine, the need arose to enlarge the Academy's facilities. Beginning in 1899, following Congressional approval for an appropriation of $10,000,000, the institution was almost entirely rebuilt and very considerably expanded. In the outcome, the Academy area extended over 256 acres along the west bank of the Severn River, on which were erected 219 major buildings. In these days installations directly supporting the Academy include the Naval station, a small-craft flotilla of about 150 sailing and power-driven vessels, an air facility operating up to 50 aircraft, a hospital and a dairy. In the grounds are to be found a handsome Chapel, spacious club premises for the use of the Faculty, the premises of the United States Naval Institute, and a well-organized Maritime Museum.

At the present time the student body — known as the Brigade — numbers about 3,800 at the beginning of the year; a total which, through the processes of attrition, diminishes to approximately 3,600 for the twelve months. Its members rate as Midshipmen in the United States Navy, with pay at $81.12 a month, plus a ration allowance. Out of this sum the Midshipman is under obligation to repay — over his four-year period of tuition — the sum of $600 advanced for the purchase of uniforms, clothing, textbooks and equipment. Medical, dental and hospital services are available free of charge. But the Midshipman is expected to live frugally; the avoidance of debt being regarded as a factor of major importance in character building—the Academy's primary responsibility.

Nominations to the Academy, for aspirants between the ages of 17 and 22, are made by the President of the United States, the Vice-President, and the Senators, Representatives and Delegates of Congress. A total of 320 enlisted men of the regular Navy and Marine Corps and the Naval and Marine Corps Reserves, may be designated annually; while the son of any recipient of the Congressional Medal of Honour — the American equivalent of the Victoria Cross — qualifies for nomination automatically. Other reservations are allocated to applicants from the Naval Reserve Officers Training Corps. With few exceptions, appointments are on a competitive basis; the educational standard being equivalent to that required for admission to colleges and universities generally throughout the United States.

The Naval Academy has three major sub-divisions: (a) the administration, (b) the academic department, responsible for tuition in both general and professional subjects, and (c) the executive department, which looks after the living accomodation and assumes responsibility for discipline, military indoctrination, character building, and instruction in certain specialized activites — physical education, personal defence, "survival," and recreational sports.

The Academy Staff is headed by the Admiral-Superintendent, with the Commandant of Midshipmen as his Second-in-Command. Internal discipline is maintained by a Midshipman "Officer" organization composed of the first (senior) class. By a system of rotation these "stripers" are afforded generous opportunity to exercise both tactical and administrative leadership, and thus accustom themselves to the assumption of responsibility.

To cope with the ramifications embodied in a curriculum that ranges from the mysteries of ship stability to a knowledgeable appreciation of world literature, calls for a teaching staff of 270 Officers and 200 civilian tutors.

Under instruction from 6.15 a.m. to 10.15 p.m. each day, with a half-day on Saturday, the Midshipman puts in about 25 per cent. more semester hours than the average civilian institution requires for a Bachelor degree. Approximately 49 per cent. of his time is allocated to the sciences and engineering, mathematics, chemistry, physics, mechanics, electrical engineering, electronics and the nuclear theory. Some 24 per cent. of his attention is given to the social humanities — economics, history, government, English literature, and a choice of one of six foreign languages. Another 24 per cent. is directed to such purely professional subjects as aviation, ordnance, seamanship, navigation, naval machinery, naval tactics and operational procedure, and naval construction. The balance of the programme is devoted to physical recreation and athletics. Classes are small — averaging 14 to 15 — so that instruction can be on a really personalized basis. Extra tuition in any subject which has presented particular difficulty to the individual, can always be arranged.

Discipline is rigid and unrelaxing. The first-year Midshipman — known as a "plebe" — is required always to be at "attention," braced up and alert, and impeccably uniformed, whenever he is outside the four walls of his room — save on the athletics field. In mess he sits straight in his chair and speaks only when spoken to, while in the words of one Admiral-Superintendent, "he salutes everything that moves and a few things that do not".

Even for upper-classmen "life is real, life is earnest". For under the disciplinary system prevailing "a limiting number of demerits is prescribed for each year, the numbers becoming progressively less. Exceeding the limit prescribed usually results in 'separation'." Offences fall roughly into two categories, (1) simple infractions of the rules or failure to live up to the expected standard of punctuality, neatness and turn-out; and (2) offences involving moral turpitude or particularly flagrant violations of Standing Orders — such as indulgence in alcoholic beverages or the unauthorized possession and use of an automobile. Untruthfulness, cheating and stealing are unforgivable sins and invariably result in "rustication."

"Plebes" are permitted "shore leave" to proceed into the enchanting Georgian-Colonial city of Annapolis on Saturday afternoon only. But "liberty" privileges increase progressively until the final year, when "shore leave" is authorized each afternoon and on Saturday night, as well as for occasional week-ends away. Leave periods, applicable to the entire Brigade, average seven weeks in the year.

One particularly popular feature of the curriculum is the annual Midshipman's Practice Cruise. During his attendance at the Academy each student proceeds on three of these cruises, either in a warship or an aircraft carrier. Fully integrated into the ship's company, not only does he "learn by doing," but is afforded an opportunity to familiarize himself with foreign climes and unfamiliar ways of life. Such broadening experience furnishes an invaluable contribution to his general education.

With physical fitness a **sine qua non**, the Midshipman's interest in athletics is encouraged in every possible way. Football ranks high amongst the many games played, and the list of fixtures includes matches with such formidable opponents as the cadets from the West Point Military Academy and the undergraduates from Yale, Cornell and Princeton Universities and William and Mary College. Basketball vies with "the ball game" for popular favour, with baseball and lacrosse, rowing, track-running, swimming, tennis, boxing and fencing boasting many adherents. Even the youthful golf addict is accommodated with a well-designed 18-hole course close at hand. Yawl and dinghy sailing claim many practitioners; an average of 10 contests a season serving to test the skill of those who like messing about in boats."

Extra-curricular activities cater for almost every taste; the would-be actor or photographer finding an outlet for his enthusiasm as readily as the embryonic glee-singer or the neophyte author and debater. In all, some 50 clubs and societies offer opportunity for self-expression and a broadening of interests for all members of the Brigade. In addition, an excellent library is at the disposal of those in search of "reference" or further enlightenment.

The group of buildings known as Bancroft Hall constitutes the hub of the Academy. For there are to be found the Midshipmen's sleeping and living quarters, and the mess rooms which can serve an excellently cooked and ample meal to the whole Brigade in 30 minutes. It is in front of Bancroft Hall that the formal parade and inspection known as "noon formation" is held, to the lively music of the band. And it is from Bancroft Hall that the Brigade, at full strength, moves off for the ceremonial parade held every Wednesday afternoon on the Wordern Field. It is an occasion graced by the attendance of the Admiral-Superintendent and all the members of his Staff; while many visiting foreign dignitaries have been privileged to take the salute when the serried ranks march forward in "review order" beneath their bravely flaunting Colours.

ARMY TRUMPETERS SALUTE NAVAL NATIONAL SERVICEMAN

A 24-YEAR-OLD Royal Naval National Service rating with eight weeks' service was saluted by ceremonial trumpeters of the Coldstream Guards sounding a fanfare of "See, the Conquering Hero Comes!" at Fishmongers' Hall on November 11th, and among those present to see him honoured was his Commanding Officer (Captain S. E. Post, O.B.E., R.N.).

Electrical Mechanic (2nd Class) R. G. Crouch, of Woolwich Road, Greenwich, is the winner of this year's Doggett's Race, which has been rowed from London Bridge to Chelsea since a Drury Lane comedian instituted the event in 1715.

Electrical Mechanic Crouch was given leave from H.M.S. "Collingwood" and took off the bell-bottoms and jumper of a seaman to don the historic and traditional "Doggett's coat and badge" of a Thames waterman. He was officially presented to the Prime Warden of the Fishmongers' Company (Lieut.-Col. Sir Edmund Neville, Bart, M.C.) and escorted in procession by former winners of the gruelling Doggett's Race.

When E. M. Crouch was drafted to H.M.S. "Collingwood" for his initial training, he found that the new-entry training officer there was Lieut.-Cmdr. A. M. Stacey, R.N., a direct descendant of Thomas Doggett, the man who started the race for young watermen after older men had refused to row him across the Thames one rough, stormy night in the 18th century. It was a young man who eventually agreed to take the actor across the water, and in gratitude (as well as for personal glory, no doubt), Thomas Doggett donated money to be used annually towards a badge and coat to be awarded to the winner of a four-mile sculling race from his two favourite public houses, at London Bridge (the Swan Tavern) and Chelsea (White Swan). When Doggett died in 1721, the Fishmongers' Company promised to carry on the terms of his bequest.

To-day the company and its friends have provided nine racing sculling gigs for competition and practice use by watermen who have completed their apprenticeships within the previous 12 months. Previous Doggett Coat and Badge winners have afterwards gone on to win world sculling championships.

New Ship Carries Over 30,000 Different "Spares"

THE Royal Fleet Auxiliary "Reliant", formerly a grain carrier working between the Gulf of Mexico and the United Kingdom, left Chatham on November 4th for the Far East to take up her role as the Royal Navy's first air stores issuing ship capable of replenishing aircraft carriers at sea.

She has an endurance at sea of 50 days' steaming at 16 knots, and carries over 30,000 different types of aircraft spares and general naval stores ranging from quarter-inch diameter washers to flight deck tractors weighing two tons. Her six holds are fitted out to make her the most modern travelling storeroom afloat, and any one of the thousands of different items of stores can be located by the civilian store officers on board and taken up on deck within a few minutes. The very latest automatic tensioning winch on deck means the "Reliant" will be able to transfer stores to aircraft carriers in unfavourable weather conditions.

Conversion of the former m.v. "Somersby" to the R.F.A. "Reliant" has been based by the Admiralty on the concept that aircraft carriers should be able to spend longer time at sea, independent of their shore bases.

The m.v. "Somersby" was built in 1954 and traded for two years as a grain carrier before she was bought by the Admiralty and converted for her new role at North Shields.

Her master is Captain H. D. Gausden, D.S.O., O.B.E., who has been in the Royal Fleet Auxiliary service for 32 years. The vessel carries a complement of 110 officers and men, and is fully air-conditioned for service in the tropics. Even the stores, stacked in hundreds of specially designed trays and storage cabinets, will benefit from cool air ducts located in each of the six holds.

Eventually, "Reliant" will carry about 40,000 different patterns of stores, and two civilian officers will be permanently at work on board her maintaining store accounts and stock levels based on a "stock-taking" which will never end all the time "Reliant" is in service. They will also assist the Naval Store officer in maintaining ledgers, which will show at a glance where each of the different items is stowed on the three deck levels.

THE CRUISE OF THE "CHIP"

(Contributed)

A farmer who turned sailor tells the story of his first cruise

EVEN in prewar days I was warned against her. As soon as people knew how far things had gone they rang me up; they wrote long letters, none of which was complimentary. "A most unsuitable undertaking at your age," an elderly relative observed. Someone else declared her stays lacked frapping, and that her knees were cracked. I didn't care. I loved her. I bought her for £8.

For years I had wanted to see the Murray Valley, including those huge irrigation projects which, commencing with the multi-million Hume resevoir, extend for 1,300 miles. Being a farmer of sorts, I wanted to catch a glimpse of the southern Riverina country; the sort, that, while running no more than a sheep to eight or ten acres, manages to produce some of the soundest merino wool there is.

The question was how to do it at the least possible expense, yet at a leisurely pace denied to those who flash about in motor cars.

"Chip" supplied the answer. She was actually a sailing punt, less than 12 ft. from stem to stern, and a bare 4 ft. of beam. But she was rigged Marconi fashion, sporting a 17 ft. mast, sails, centreboard, and all the rest of it. Strong in a hard won knowledge, I'm now prepared to admit that anything less suitable for inland navigation would be hard to find.

But lying in Albert Park Lake in Melbourne she looked pretty enough to warrant investment in a yachting cap. However, caution suggested a pair of second-hand oars. I used them quite a lot.

Sailing down the Murray sounds all right, until it is mentioned in front of someone who really knows the river. Then you can see you've made a bloomer, even before they state what manner of fool you chance to be. It can't be done.

A fair wind might raise the newchum's hopes, but the next bend brings it dead ahead with no earthly chance of tacking. Fortunately, I'm easily bluffed, and had added a pocket-sized outboard engine to the pile of gear before taking the water at the riverside town of Echuca.

We did sail at odd times, the "Chip" and I, but for the most part forestay and jib halliards supported a meat safe, butter cooler and what washing the crew of one felt bound to undertake. That mast made history too, since the bridge at Murrabit had to be raised to let us through. For the second time in twelve months the bridge-keeper logged a "passenger" vessel. I still feel rather proud.

On a blazing hot morning one might have expected those concerned to feel a trifle shirty. Not a bit of it. Obviously it was a case of inches, but, when gingerly I manoeuvred "Chip" towards the centre span and asked a couple of painters what our chances were, they downed their brushes and manned the winches. A passing policeman lent a hand; so did several small boys, and slowly the great girders rose a few feet to let "Chip" shoot through. Nice of them, wasn't it?

Technically one could in those days claim right of passage at any time, for the Murray is a "free" river on which the casual tripper makes use of Government property valued at millions of pounds. No payment is required.

The trouble it causes is enormous, but, in 800 miles, I

never met with anything but the utmost good nature. From lock to lock they passed the word by telephone. The skipper of the only summer-running river steamer spread the news below Mildura. Someone was always on the look out. "Half your luck," they would murmur, as I said good-bye.

Passenger steamers go up-river as far as Echuca when they can, but, in the 'sixties, Echuca ranked second only to Port Melbourne as a shipping base. There were boat-building yards, slips and docks, and, until recently, there was wharfage for an ocean liner. One of the original reasons for penning the Murray waters with locks and weirs, was to provide all the year round facilities for inland shipping.

But things evolved too fast: railways and road transport stole freights, and along the banks tight little craft are still tied up in idleness.

So far as "Chip" and I were concerned, we pushed off into the blue, a pair of innocents depending upon beginner's luck alone. Warnings rang in my ears; tales of parties wrecked, even drowned. It didn't seem possible. But it is. Poetic phrases of the "Ole Man River" type are misleading, and on any of the three occasions that come to mind, a moment's inattention might have spelt disaster.

I don't know whether a Murray trip such as mine is more difficult in high water or in low. Anyway, at the time of which I speak, the river from Echuca down held less water than usual, and was dropping every day. Innumerable snags and sand bars were visible—which was something to be thankful for—and as many more could only be guessed at.

"Keep to the mud banks" is a good rule. In other words, the steeper the banks the deeper the water at their foot. There is a river channel somewhere, but only the sense that comes with practice keeps one in it. Even then it's impossible to avoid bumping into something, and if anyone imagines that a journey of this kind is at all monotonous, I can assure them that steeplechasing over red-gum snags holds all the elements of real excitement.

At almost every bend were eddies and whirlpools sufficient to toss "Chip" all over the place, while, from Euston on, were rocky reefs capable of ripping the bottom out of anything afloat.

Sailors don't care, I'm told. But the mariner who sets off down the Murray without paying due attention to the business in hand, is only asking for trouble. A fair-sized launch was tied up below the Good Night bend. She stove her strakes in a week or so before I passed, and could expect to remain there until the water rises once again. I was lucky, but I got the wind up on several occasions. One of them was at the Toorrumbarry Weir—the first I came to and by far the worst.

Usually there is about 9 ft. of water below each lock. One sails quietly in, and, after falling gently with the water, sails as quietly out. But Turrumbarry was different, for there was scarcely any water at the downstream end. "Chip" and I dropped and dropped, until the lock chamber became an echoing cavern, and fresh-water snails showered upon us from the slimy walls.

Flat on the mud at last and tied up to an intruding snag behind which the the hard-pressed gates spouted a cascade, one wondered what would happen if the pressure proved too great, and, because nothing much could be done about it, anyway, kept eyes firmly upon the gates ahead—weighing forty tons apiece—which seemed to open extraordinarily slowly.

I don't mind admitting that I was glad to get out of that, even at the cost of scraping "Chip's" none too solid planking on a water-skinned concrete apron, to shoot the chute under oars, and bring up half a mile below.

There were exciting moments right enough, but, as a rule, the day began when the sun topped the trees; when it was good to be awake watching the bird life beginning its morning round.

While the billies boiled, I ported by four lining boards laid fore and aft along the narrow cockpit made a comfortable bed. This done, "Chip" and her engine were tidied up; a swim, breakfast and we were off again wondering what lay around the next bend.

Those bends! Two to one they say when speaking of river distance. That means that it is twice as far by river as it is by road, and, seeing the Murray as I did flying home again, it is easy to tell where the extra distance lies. Near Mildura is a bend eight river miles in length—and only three hundred yards across by land! Here and there the stream has shortened itself by cutting through those narrow necks, but trying to plot a compass course would make one dizzy.

The voyage down stream to Renmark in South Australia took four weeks. I wasn't in a hurry. There was so much to see and do; so many people to yarn to, and a cigarette smoked or a newspaper dropped means something in places that do not boast a radio.

Only once did I beg the shelter of the men's hut, after a succession of thunderstorms had soaked everything on board. That was a lucky break though, for it led to a couple of day's mustering amongst coolibah, apple bush and salt weed, as well as an introduction to an old-time homestead perched on the most beautiful site imaginable. It also led to friendship with a charming family. Where is it? Well, ask for a tree carved with a broad arrow and the words "700 miles from Albury, 1871". They will make you welcome if you have a little boat.

But I could go on endlessly. There was the time when a midnight clatter sounded like a thief in camp. No doubt about it either, for the torch beam showed a water rat making off with—of all things—the washing up mop.

I learned with surprise that neither platypus nor eels live in the Murray River. It was noticed too that, while swans require a long run to get on the wing, pelicans can take off much more easily, their legs assisting with a succession of standing jumps.

Odd incidents come to mind, such as the sight of six kookaburras setting about a hawk, beating him to the water with their useful looking beaks, and leaving him broken-winged and bleeding to prey upon their young no more. Then the mother duck put on her usual act of trailing a broken wing and fluttering along the surface to lead me from her nest. With "Chip" safely past, she would rise with a perfect climbing turn, to pass over our masthead an iridescent streak of light.

Snakes—there were quantities of brown and tiger snakes, but what interested me most were the river folk themselves. It was no solitary trip. The whole population of Mildura must have inspected "Chip", and there is settlement of some sort all along the banks. There were station properties with lovely gardens stretching to the water's edge, fringed with willows that lent an English air. Places like Calpernum still house the third generation of pioneering families as old as South Australia, while the riverside kingdoms of Moorna, Lake Victoria, Ned's Corner and Kulnine all hold Australia's story in their hands.

"You must have had a lot of adventures," a friend observed, as if I had just returned from the backblocks of New Guinea. I think it was Steffansson, the Arctic explorer who said that adventures were a sign of incompetence. I like to think so, anyway, for none occurred to me.

With the comfortable feeling of having done something one has always wanted to do, it would be easy to pile on the agony. To talk about the time "Chip" rammed a mud bank, to spring her centreboard casing on a cold, windy evening about Swan Hill—we called that "Calamity Camp"! Of the lock at Wentworth and the day spent weatherbound there, the offered shelter of the lock chamber a veritable cavern of the winds. Or the time tucker ran out and we reached Mildura on a breakfast of soggy rice and apricot jam. But would you call those adventures? No, simply the makings of a first class Murray holiday.

WHISKY GALORE

H.M.S. "Troubridge" (Commander R. L. W. Lancaster, R.N.) arrived at Portsmouth on November 24th, after 11 months' service on the West Indies Station. Since her commissioning in July, 1957, she has steamed 36,000 miles and—among other things, of course—picked up two Venezuelans and 212 cases of very best contraband whisky.

It happened on April 27th off the Venezuelan coast while she was on her way from Trinidad to Jamaica. "Troubridge" investigated a merchant ship report that a motor boat was adrift. She found it as described with two nonchalant Venezuelans on board trying valiantly to start an engine which had failed them and caused them to drift for 19 days! The Venezuelans were taken on board, and for 10 hours their boat was towed before it was decided that the task was hopeless and the boat destroyed as a hazard to navigation.

When the cargo from the motor boat was examined on board "Troubridge" it was found the 212 cases contained an extremely good brand of whisky, worth in all just under £4,000! While "Troubridge" welcomed the guests and their "luggage", the presence of some 110 Jamaican soldiers as well made life on board rather cramped. It also made life for the two Venezuelans rather embarrassing, because one of the soldiers was a Customs officer doing his reserve training. He thought it rather strange, to say the least, that the Customs markings had been carefully planed off the cases, and these—together with the two Venezuelans and the whisky—were landed at Kingston, Jamaica.

For "Troubridge" the incident has left two mysteries. The first is how much is she likely to get as salvage money, and when, and the other concerns a third Venezuelan. He was with the other two when their boat broke down, but decided after a few days to go off on his own in a dinghy. It is believed he was never seen again.

Sea Cadet Activities in Victoria

INCLUDED in the Annual Report of the Victorian Branch of the Navy League is an account of the activities of the Sea Cadets during the past year. Concerning these, the Senior Officer, Lieut.-Cmdr. F. G. Evans, R.A.N.V.R., reports that numbers in the Victorian Division of the Australian Sea Cadet Corps remained steady throughout the year. The Melbourne Police Unit was transferred from Albert Park (where it shared the Drill Hall on the Lake with the Melbourne Unit) to Williamstown, and it is now established in the Naval Reserve Depot formerly known as H.M.A.S. "Lonsdale II." The Unit's new Headquarters were formally opened by the Second Naval Member (Rear-Admiral W. H. Harrington, C.B.E., D.S.O.) and named T.S. "Voyager" by Mrs. Harrington on 29th November.

The Geelong Unit has enlarged its Drill Hall, and the Bendigo Unit is in the process of doing so at the present time. Mildura is engaged in fitting out the Hall made available by the Navy some time ago.

Footscray Technical School Unit functioned under difficulties during the year, as all their uniforms were destroyed when the Naval Clothing Stores were burnt to the ground.

Cadets in all Units took part in civic events in their areas, and Sea Cadets provided the Colour Party and leading detachment for the Commonwealth Youth Sunday March through Melbourne in May. Sea Cadets have also regularly undertaken duties at the Olympic Swimming Pool in events organised by the Victorian Amateur Swimming Association.

A "return visit" took place during the year when Cadets from India visited Australia. It will be recalled that John Sinclair represented the Australian Sea Cadet Corps in India in 1956. The Indian Cadets were entertained by the Melbourne and Melbourne Police Units during their stay in Melbourne.

The Division lost the services of Lieutenant L. M. Cruise, R.A.N.R., during the period under review. Lieutenant Cruise, who was Executive Officer of the Corps as well as a member of the Executive Committee, was transferred to Sydney and his departure was a great loss to us all. His place has been filled by Lieutenant W. J. Flintoft, R.A.N.R.

The Sea Cadet Colour, which is held in the custody of the Unit judged annually by the Director of Naval Reserves to be the most efficient of the Division, was transferred from Geelong Grammar School (who held it in 1956 and 1957) to Bendigo at a ceremony in Bendigo in March, 1958. The Director of Naval Reserves was the Reviewing Officer and civic dignitaries and Navy League Officers attended the ceremony.

International Rifle Competition for Sea Cadets – 1958

"The Duke of Edinburgh Ship's Bell"

FOR the second consecutive year, the Navy League of Canada's Royal Canadian Sea Cadet Corps, "Westmount," of Sydney, Nova Scotia, has won the International Small Bore Rifle Competition for Sea Cadets, as conducted within ten countries during 1958. It is estimated that more than two-hundred Sea Cadet teams competed for the Challenge Trophy, known as "The Duke of Edinburgh Ship's Bell."

As applying to countries other than Canada, England was placed second, New Zealand third, South Africa fourth, Australia fifth and Sweden sixth. Scores turned in by Australian Sea Cadet entries were: N.S.W. Div. A.S.C.C. (732), T/S "Warramunga," Darwin (512), and Geelong Grammar School (419).

In announcing the results, R. J. Bicknell, Vancouver, B.C., National President of the Navy League of Canada, which sponsors this world-wide competition, stated that the winning Westmount Corps had entered no less than ten teams in the 1958 contest. The remarkable score of 794 of a possible 800, as turned in by Westmount's winning team was so outstanding that D.C.R.A. demanded a substantiating shoot. Such was done and Westmount's high score was confirmed. This action caused the delay in announcing the results of the 1958 Competition.

On the occasion of the 1957 Empire Sea Cadet Camp held in England, H.R.H. Prince Philip presented "The Duke of Edinburgh Ship's Bell" to England's Southend Unit, first winners of the Competition. Last year, the presentation of this famous trophy was made to the victorious Westmount Corps by H.R.H. Princess Margaret on the occasion of her visit to Canada. It is hoped that H.R.H. Prince Philip will personally present his Trophy to Westmount when, in company with Her Majesty the Queen, he visits Canada this year.

FORTY YEARS ON

Thoughts from Greece and Memories of Assaults on Gallipoli

by

Lieutenant-Commander Douglas Dixon, D.S.C., R.N. (Retd.)

LIEUTENANT-COMMANDER DIXON writes from his yawl "Dusmarie" which for several summers has cruised round the Dalmatian coast of the Adriatic on "Manno Expeditions" giving the parties of boys and girls on board a wonderful holiday. They learn to sail, learn responsibility for everything connected with their boat, their crew and the other boats in company.

THE ship had cleared from the Turkish harbour, Tourkolimano, in Faliron bay and with the Parthenon on the Acropolis of Athens astern she made south eastward until, sailing close under the cliffs of Akra Sounion and the pillars of the two thousand five hundred year old temple of Poseidon, she could bear away north to an anchorage in the bay of Marathon.

There the ship's company, three girls, two men and a dog, tramped over the marsh to see and pay homage to the cypress trees which commemorate the dead of a memorable and classic battle.

Onwards she sailed to rest again at the narrow bridge which connects the mainland of Greece with the big island of Evvoia at Khalkis. Here her company cleansed themselves in the completely modern Lucy Hotel while wondering in some awe at the vast lagoons where Agamemnon assembled his thousand ships, launched by the face of Helen, before his assault on Troy.

With just the staysail in a westerly gale she made anchorage over the sunken city of Atalandi and then sailed on north eastwards. Fifty miles astern the snows of Parnassus and the lesser mountains round Thermopylae were clear to view as she made the Sporades where she lay quietly for three nights. Then, again north eastwards, she laid her course for the mountain of Athos standing high above the horizon, a pointed mighty peak. Pelion and Ossa were in sight but the westering clouds made Olympus but an uncertainty and it seemed that the Gods there were not disposed to smile upon the venture of the vessel.

It had been a dream and a desire of the Captain and the other male to set foot on the wondrous peninsula of Athos where not even a female beetle is permitted life. Yet more the Captain's daughter, in feminine defiance, had proclaimed that if she could row the males ashore she would put at least one big toe on the ground where nothing Eve-like is allowed. But within a mile or so of the landing place of Daphne, Athos wrapped his head in clouds and summoned up the lightning from every point of the compass. These were no conditions and certainly this was no place for a small 16 ton sailing yawl to stay in.

So with the wisdom learnt from 74 years knowledge of the narrow seas, the Baltic and the wide Atlantic, the ship asked to be taken from this place with every possible despatch. Two nights of rain, horrible calms with uncontrollable motion, squalling gales from any azimuth were made just bearable since the unrequired deck hands could warm themselves by the good saloon stove and recover strength to try again. Yet, at last under reefed main and staysail only the ship, my ship the ex-oyster smack of West Mersea island and now the yacht Dusmarie, could turn under the shelter past Kombi island light into the quieter waters of Mudros harbour.

One morning the Captain of the Port brought Nick Casamalis to aid him as interpreter. Nick, 65 and six feet of upright manhood with silver hair "en brosse", fixed the Captain with piercing eyes. "I have seen you before," he said. Which proved to be true since in 1916 the Captain had been a youngster in a "River" class destroyer, the coal burning "Colne," when Nick was serving King George V in the "Flower" class sloop, H.M.S. "Aster". Later Nick entertained "Dusmarie's" company in his home. His little walled garden was a blaze of wallflowers and, of course, for the sake of memory, he cultivated asters. Of his three sons one helped at home, one was in Australia and the third had been killed by communists.

Later Nick led the party some half mile east of the town to the cemetry of the Imperial War Graves Commission. Being Easter the community was all a-junketing, once the half-masted flags had been raised close up at Noon.

The Captain was most absorbed by memorials to men, and a midshipman who had been a childhood friend, from H.M.S. "Agamemnon", "Agamemnon" . . . could any other name so well continue history? From Marathon to Mudros. If you will from Troy to Trafalgar. It's all the same so long as there be men alive or dead of whom Thucydides recorded —

"They passed away from the scene,
Not of their fear but of their Glory."

"Dusmarie" gleamed ghostly white in the gloaming when her company returned. Here, in this wide expanse of water, a Scapa Flow of the Aegean, 40 odd years before were harboured more than 300 big ships from H.M.S. "Queen Elizabeth", carrying Roger Keyes, to include the greatest trans-Atlantic liners. Now the little yawl was the only, lonely, ship in the whole place. At midnight the crew climbed the hill to the Cathedral to attend the first Easter Sunday service.

The Captain stayed on board, alone with his memories and his dog.

—From the "Navy"

FUN IS WHERE YOU FIND IT

"Man on His Island," by James S. Rockefeller, Jnr. (Jarrolds).

WHAT might easily be just another Pacific odessey, turns out to be a readable account of what a young American can see and do when a ketch-rigged "hunk of wood and canvas called 'Mandalay'," carries him away from it all and New England too.

There is not much here for the armchair yachtsman. 'Mandy' makes her landfalls with commendable regularity. It's the people met with along the way that lift the story out of the ruck, for they are described with a vitalising touch that is full of humour and understanding. There is no harrowing analysis of what is past. The author's interest in the Pacific and its peoples is a thing of here and now, and in that he is helped by crew members who play a part with pleasant irresponsibility.

Why live in Galapagos? Three brothers who left Hitler's Germany provide the answer. They sound like real people, self-reliant in the Swiss Family Robinson style and happy in themselves and their children. Further to the west there are places where they welcome newcomers with open arms. The Marqueasas are fun; there is a bush beer binge of heroic proportions in the Taumotus, and one begins to wonder where all the men are in these communities of friendly girls.

It's a light-hearted yarn. The author wanted to see and photograph people and places, so he sailed 'Mandy' from Panama to the New Hebrides before he found a berth in the "copra packet" that turns out to be Burns Philp's pride of the ocean, 'Malaita'. There he made friends with Captain Brett (Hilder).

'Mandy' and her crew were always making friends. In every island visited they left something of themselves behind, but for the author there remained his own particular island on the other side of the world. "For it's not always a place," he says, "sometimes it's a person". And what that means is the end of the story.

—B.H.

PLASTIC ARMOUR

"Admiralty Brief." By Edward Terrell, O.B.E., Q.C. (Harrap).

Here we have the fascinating story of an eminent lawyer who became one of the war's most brilliant inventors. For his invention of plastic armour he was awarded £10,000 the highest award made to any naval officer of the war. Telling his own story he strikes one as a delighful person, who gives every credit to those who rendered him any assistance. It is odd to hear that when London was being rigorously blacked out there was even a suggestion that coal-dust should be laid on the Thames to prevent the river guiding enemy aircraft to their target. Captain Terrell was ready to turn his hand to anything and there is an account of the making of a very useful film, which won the approval of Sir Winston and many others at the Admiralty. Most interesting are the pages devoted to the capture of a German U-boat, a feat which had for a long time eluded the Royal Navy. This reminds me of such a vessel being brought into one of our ports when the crew were followed by their captain who clutched a revolver, but was told that he need not commit suicide for he was not the only German naval officer who would be detained in Britain. He thereupon exclaimed that the Kaiser had ordered him never to let his ship fall into our hands, at is contained all the latest inventions. "And it is only 24 hours," he said, "since the Kaiser gave me that com-

—H.B.

RECAP

"The Second World War." By Sir Winston S. Churchill. (Cassell).

If the recording of the events of World War II in only six tomes was in itself a herculean task then the sub-editorial feat of condensing that work into only one volume correspondingly commands admiration. This secondary chore, a "recap" to enable readers to absorb the *mise en scène* and essentials of historic events has, in fact, been admirably done. Indeed, the definition of the unavoidable chiaroscuro of War is sharpened in this curtailment, which yet runs to 973 pages of close text. This results, fortuitously, in making the pure Churchilliana stand out the more vividly: on the first page, for example, is an acid reference to the "clatter and babel of democracy"—which was exactly what the League of Nations amounted to in the 'twenties, here so aptly

termed as the years of the Follies of the Victors.

Hence, this abridged one-volume edition of Sir Winston's *magnum opus* "The Second World War" can be regarded as an excellent base-line for any study of events from 1919-1957 when the Great Caravan of Humanity struck its tents as a prelude to new adventure. There cannot be any more warplanes in the sense depicted in this work: it is unlikely that future history will follow formula and repeat itself. Thus, to have the vast canvas of the immediate past reduced to a picture slightly smaller than the novel "Gone With The Wind" is to have a vademecum that will be indispensable as a reference book, and quite absorbing as a narrative.

—B.J.H.

BREAKOUT FROM BREST

"Channel Dash." By Terence Robertson. (Evans).

THE escape up-channel of the "Scharnhorst," "Gneisenau" and "Prinz Eugen" in February, 1942, created a sensation at the time. Looked at now, with some little perspective of time to form a background for judgment, the return of these ships to Germany was the best thing that could have happened from the Allied point of view. It removed the threat of heavy surface ship attack on the WS convoys carrying reinforcements to the Middle East, and also to the future KMF and KMS convoys destined to unleash Operation "Torch" on the shores of North Africa.

This strategic view, however, does not excuse the breakdown of the co-ordinated plan for their destruction en route. In itself, given adequate warning of the ships having left Brest, Admiral Ramsay's plan was sound and reasonably hopeful. What failed was the inter-Service co-ordination of attack, and when that failed, all hope of success was gone. The author's contention that a capital ship should have been stationed at say, Grimsby, makes strategical nonsense, for it merely means that a fleet action would have been fought in waters at the extreme limit of Allied fighter cover and where the enemy could enjoy continuous air cover of his own.

The breakdown in co-ordination can be traced more definitely into the command structure under which the forces operated in this particular action. In the case of the enemy the air forces engaged were directly under the command of Admiral Ciliax on board the "Scharnhorst," and he was able to enjoy complete co-ordination of the sea and air defence under his own direction. He thus had the complete and necessary flexibility which sole command always brings. But it was a very different story for the British attack, for here was a dual control of the two weapons involved—sea and air—and a notable loss in flexibility as a result. Dual control, to be successful, calls for a degree of co-ordination rarely achieved even after long periods of close association, and in this particular case there had been no such period. The author does not mention this as the cause of the failure, but it is obvious all through the book as the unhappy story unfolds.

This is an interesting book and, no doubt, factually correct throughout. But it becomes very obvious, as one reads, that it has been written without knowledge or study of the general strategical background at that period of the war. Most of the author's contentions do not hold water when examined—as they must be—against this essential background.

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THE NAVY

Farewell scene as Orient liner "Orsova" leaves Sydney.

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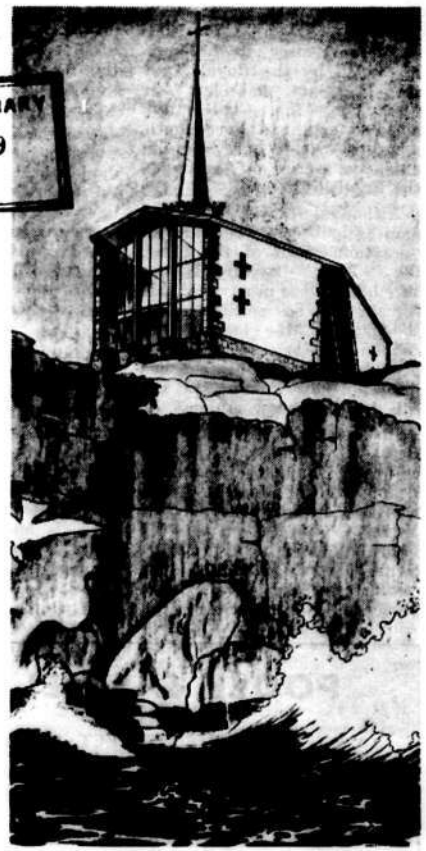
IN MEMORY

IF past experience is any guide, the proposed memorial chapel to be erected at H.M.A.S. "Watson" will meet with ready response from the general public. South Head at the entrance to Port Jackson is a fitting site, a landmark to ships entering port, and a reminder to those on shore that a price has been paid for the ease and comfort which we all enjoy.

Most H.M.A. ships and establishments have some sort of memorial to the messmates of other days; simple in form or on a larger scale like the two handsome chapels standing side by side on the edge of the parade ground at Flinders Naval Depot. An integral part of the life of the Depot, these chapels welcome hundreds of R.A.N. personnel within walls built and furnished by public generosity.

Those worshipping in either chapel must be conscious of the fact, that just as surely as there is a future so there is also a past. It is there for all to see; a Book of Remembrance in which is written the names of those of the R.A.N. who gave their lives for their country. Elsewhere throughout the Commonwealth, the White Ensign hangs in churches of all denominations — a symbol of service and sacrifice.

In New Guinea a memorial of a different kind is taking shape. Built by private subscription to which a generous Government grant was added, a memorial to the Coastwatchers of World War II is nearing completion. Standing on Kalibolo Point at the entrance to Madang harbour is an 80-foot high concrete lighthouse, into which is set bronze plaques giving the names of those Europeans and natives, who ventured behind the enemy lines and there lost their lives. To be officially opened at the end of August, the Coastwatcher's Light is a tribute to men personally known to many in New Guinea. Like the chapel to be built at "Watson", the memorial at Madang acknowledges a debt that can never be discharged.



The new Chapel, which will be non-denominational, will have seating accommodation for 150 persons. The altar will carry stones from the historic chapels of the world, requests having already been sent to the United Kingdom, the U.S.A. and Europe.

H.M.S. "TIGER"

By "PELORUS — from "The Navy"

H.M.S. "Tiger", the first new cruiser to be commissioned by the Royal Navy for 14 years, has left her birthplace, the Clyde, and steamed south to Portsmouth, where she is to carry out an extensive series of trials in the English Channel.

Although it will be many months before she becomes an operational unit of the Fleet, the "Tiger" is already assured of a place in naval annals for she will be remembered as the first of the last of the conventional type cruisers and, probably, also because she has been so long coming to the full flower of seaworthiness.

It was as long ago as October, 1941, two months before the Japanese attack on Pearl Harbour, that her hull was laid down at the yard of Messrs. John Brown on the Clyde, under a heavy security cloak. Throughout the arduous remaining years of war, work proceeded swiftly and for the people of Clydebank the effort of the dockyard workers on this new hull was a contribution to final victory.

But after the defeat of Japan the immediate need for warships ceased and Britain's depleted Merchant Navy had to be rebuilt. In London, however, the "Tiger" became more important because she posed a problem. She was in danger of becoming obsolete before she left the shipyard.

But the Admiralty thought otherwise. While looking to the future, it was decided that the best of the conventional ideas of shipbuilding should not be abondoned before new ones had been thoroughly tested and proved.

The result it a notable addition to the cruiser strength of the Royal Navy which, in turn, is another fine achievement by the workers of a famous shipyard. And for those who are concerned by the whittling away of conventional cruiser strength — now down to 14 from about 50 at the end of World War II—the "Tiger" is at any rate a reassurance that the cruiser as we now know it, is not yet a dying type.

THE LAST WORD IN BRITISH NAVAL CONSTRUCTION

Nevertheless, the decision to complete the "Tiger", and also her two sister ships, the "Lion" and "Blake", was made by the Admiralty "to close the gap before the guided weapon ships come into service".

From the "Superb", the immediate predecessor in the class, to the "Tiger" is, nevertheless, a big stride and the hull, which lay untouched for so long, has had built into it a mass of intricate modern equipment—probably the last word of the scientists before the advent of Britain's nuclear-powered submarine and the missile-launching ships.

She is a triumph of automation, remote control and air conditioning, the nearest approach to a "push-button" warship yet contrived. And though she is basically not a new design, she takes the first step into the atomic age.

One of the tasks of the builders was to make her capable of operating, if necessary, in an area contaminated by nuclear fall-out, and here is the measure of their achievement.

She could operate for a fortnight with every member of her company under cover. The Captain could control his ship in a totally enclosed bridge, the first to be fitted in a British cruiser. There need be no one in her engine rooms or boiler rooms as they can be controlled on a panel in a remote part of the ship. Most of her armament can be operated from totally enclosed compartments below deck. And if she steamed through a contaminated area she could afterwards be washed down and decontaminated by a sprinkler system.

The "Tiger's" most interesting feature, however, is her fully automatic guns and their direction system. The guns are operated by electric computers which work with such uncanny accuracy that a deliberate error was introduced during practice to reduce the destruction of targets.

The main armament, a considerable advance on what was originally intended, now consists of four 6-inch guns mounted in two twin turrets, which can be fired at air as well as surface targets, and six 3-inch guns in three twin turrets. The rate of fire of the 6-inch guns is officially given as twice that of guns in any other cruiser and the 3-inch secondary armament can be fired at a rate comparable with the light anti-aircraft naval guns of World War II.

The gun direction system is so advanced that no gunners at all are required to be in the 3-inch turrets when the ship is in action and only a few operators are needed in the heavier turrets to watch equipment and operate switches.

With an overall length of 555 feet 6 inches and a beam of 64 feet, "Tiger" is not quite as large as some of the present British cruisers but she is probably the fastest. Her main machinery, built by Messrs. John Brown, consists of four geared steam turbines powered by Admiralty designed boilers which produce 75,000 shaft horse power and give her a speed which is acknowledged to be more than 30 knots.

But her complement of 53 officers and 645 men is less than that in other British cruisers. While there is a high proportion of technicians, the number of ratings employed on general duties is usually small. This has been made possible by the introduction of modern labour saving methods and the sharing by technicians of communal duties with the seamen.

For a ship with so much equipment one is impressed by the space available for members of the ship's company. Good use has been made of all accommodation space and in this respect the "Tiger" shows the results of the Admiralty's efforts to improve living conditions afloat.

There is a new atmosphere on the mess decks. Hammocks are seen no longer. Instead ratings sleep in upholstered tubular steel framed bunks. The use of cheerful colours, fluorescent lighting, plastic panelling and plastic topped tables all contribute to more pleasant surroundings. Ratings' accommodation is also improved because it is no longer necessary to eat on the mess decks, food is served in dining halls on the cafeteria system.

The "Tiger" is also a comfortable ship in which to work in all climatic conditions, a complete air-conditioning plant will keep her cool in the tropics and warm in the Arctic. Irksome daily "chores" have been reduced by the installation of a large amount of electric cooking, deck cleaning and paint sealing equipment. Then, for leisure hours, there are a cinema, radio diffusion and television installations. There are 27-inch screen television sets for ratings.

A notable ship with a notable name. There have been 11 predecessors named "Tiger". The first was a 200-ton 22-gunned Galleass built at Deptford in 1546 which fought against the Spanish Armada. The second, a 40-gun, fourth rate of 453 tons, rebuilt on three occasions, took part in the Dutch Wars of the seventeenth century. Other "Tigers" fought at the Battle of Saintes and in the Crimean War. The immediate predecessor of the new ship was, however, the most famous to bear the name. She was the 28,500-ton battle cruiser of the First World War, Flagship of Rear Admiral O. de B. Brock at the Battle of Jutland.

The fuctions of the cruiser to-day are restricted by developments in other fields, notably the air. Many duties formerly performed by cruisers are now done by carrier-borne or shore-based aircraft. Nevertheless, cruisers are still valuable ships, particularly in the broad oceans east of Suez where air support may be problematical.

The addition of H.M.S. "Tiger" to the cruiser strength of the Navy is, therefore, an important event. She includes many revolutionary ideas and has a hitting power far superior to any previous ship of her type.

Under the command of Captain R. E. Washbourn, D.S.O., O.B.E., R.N., a New Zealander by birth, "Tiger" is now preparing for service and was on view to the public at Portsmouth Easter Navy Days. She is expected to begin operational service next summer.

FIRST IMPRESSIONS

ROCKET bombing from H.M.A.S. "Melbourne" is an exciting experience, writes a correspondent from the Melbourne "Age". The take-off from the deck of your own carrier is the worst of it, he thinks. "Trussed like a chicken in flying suit, Mae West, parachute, with inflatable dinghy, helmet, bone-dome and seat straps, we sit under perspex canopies sweltering in the tropic sun.

"The Gannet's turbo-prop engines roar into life and rise to a howling bellow as they warm up. One of the flight deck crew waves us forward to the steam catapult. Others scramble underneath us to hitch us to the shuttle that is going to rocket us into the air.

"The men scramble away over the deck side. There is mounting tension while the engines scream up to full power. Then the thing happens so suddenly that there is no time for fear. One's body is wrenched by almost unbearable forces as the catapult slams forward. The eyeballs start, the world goes grey. Then, in a brief instant, the lazy peace of floating between sea and sky.

"We have just accelerated from zero to 100 miles an hour, in one second and a half, over the length of one cricket pitch and a half, suffering the force of three gravities. And now we are driving north through little fluffy clouds, the nine of us flying in three groups, each in close formation wing-tip to wing-tip.

Half an hour of smooth and sleepy flying and we are suddenly wide awake. The enemy is in sight, her white wake twisting like a snake and her escort surrounding her.

"One by one we peel off for the attack.

"H.M.S. "Albion's" guns blaze at us, firing break-up shot that explodes in black puffs before hitting.

"It is our turn. We scream down in a steep dive aiming at the target "Albion" tows behind her. We see the rocket splashes from the planes that precede up.

"Rockets away, the world goes grey again as we pull out of the dive and zoom up to safety.

"Minutes later, flying peacefully back to the home ship, an enemy aircraft dives on us. Some of us peel off to drive him away, swooping and climbing in an intricate aerial dance.

"That disposed of, we fly home in deepening twilight to find our ship, a dark blue trailing her white wake on a midnight blue sea.

"It is dark by the time we come in over the stern under nearly full power to bump down on the deck, arrested by a cable that pulls us to a stop with another violent bodily wrench.

"Good, though rather alarming fun in peacetime. In war, no doubt, a particular kind of hell."

South African Sea Defences

REFERRING to the naval defence of South Africa, the "Rand Daily Mail" says: "The increase in the South African Navy from three at the end of the war to 17 today is an indication that we are taking a more realistic view of our defence responsibilities. More ships are due, and by 1964 the fleet will total about 28, most of them modern vessels. It is also encouraging that recruiting has taken a spurt and that the number of men in the Navy has doubled in two years. More than half are now Afrikaans-speaking, and this in itself is interesting evidence of a change in attitude towards our sea defences.

"In the past the importance of the Cape route in world strategy has been so obvious that, paradoxically, it has served to retard our naval development. South Africa has been so clearly incapable of providing the necessary naval strength herself that all governments have taken the line of least resistance and have virtually left the job to the Royal Navy. In two world wars this policy has worked well for obvious reasons, and basically there is still no apparent need to revise it. Indeed the Simonstown Agreement recognises Britain's vital interest in the Cape route and provides that South Africa shall grant Britain all the naval facilities she needs in time of war.

"We have entered a stage in history when previous conceptions of world strategy have been thrown into the melting pot by a whole array of new weapons that are still being developed. Quite apart from long-ranged missiles, the nuclear-powered submarine has changed naval thinking fundamentally and the defence of the Cape is certainly among those problems that will have to be considered afresh.

"In this new and dangerous world South Africa will be even more of a light-weight, military, than she has been in the past. Our Navy, impressive though its growth is, must not be allowed to give us any delusions of grandeur about 'independence' in the military sense."

H.M.A.S. "WATSON" PLANS A CHAPEL

H.M.A.S. "Watson" the home of the R.A.N.'s Navigation Direction and Torpedo Anti-Submarine Schools, is situated at South Head at the entrance to Sydney Harbour. The Diving Section of the R.A.N. is there as well. The ship's company numbers about 500 all told.

In common with every other ship and establishment in the R.A.N., "Watson" has a responsibility, particularly in the case of younger personnel, to see that morale and moral welfare means one and the same thing. To this end, "Watson" encourages character building activities, in which is included spiritual training. Conditions hitherto have proved inadequate. Although lecture rooms are bright and cheerful, the dark cinema that is used as a church has never been entirely satisfactory.

"Watson", therefore, plans to build a chapel that will benefit the living, and at the same time become a memorial to those in the N.D. and T.A.S. Branches of the R.A.N. who lost their lives in the two World Wars.

The architect, Mr. John Mansfield, has produced the striking design seen elsewhere in this issue. Rising from the roof of the chapel will be a large Tudor crown in copper, out of which will spring a tall cross that is to be illuminated at night. Standing on the cliffs of South Head the chapel will form a landmark both from sea and shore.

A strong Committee under the leadership of the Lord Mayor of Sydney, Alderman H. F. Jensen and Rear Admiral H. B. Farncomb has been formed. The target goal is £27,000, and contributions to a building project that will appeal to all should be sent to the Supply Officer, H.M.A.S. "Watson", who is Treasurer of the Appeal.

THE MEANING OF SEAPOWER

IN an address given to the Royal Empire Society in London in 1946, Admiral Sir John Cunningham, then First Sea Lord, said that the British Empire owed its origin to British trading activities, and that its continued existence depended upon the maintenance of sea communications which permit that trade to flow. Things have changed since then. The Royal Empire Society now uses the word "Commonwealth", and the Admiral is now Admiral of the Fleet. But what he said is as true as ever it was.

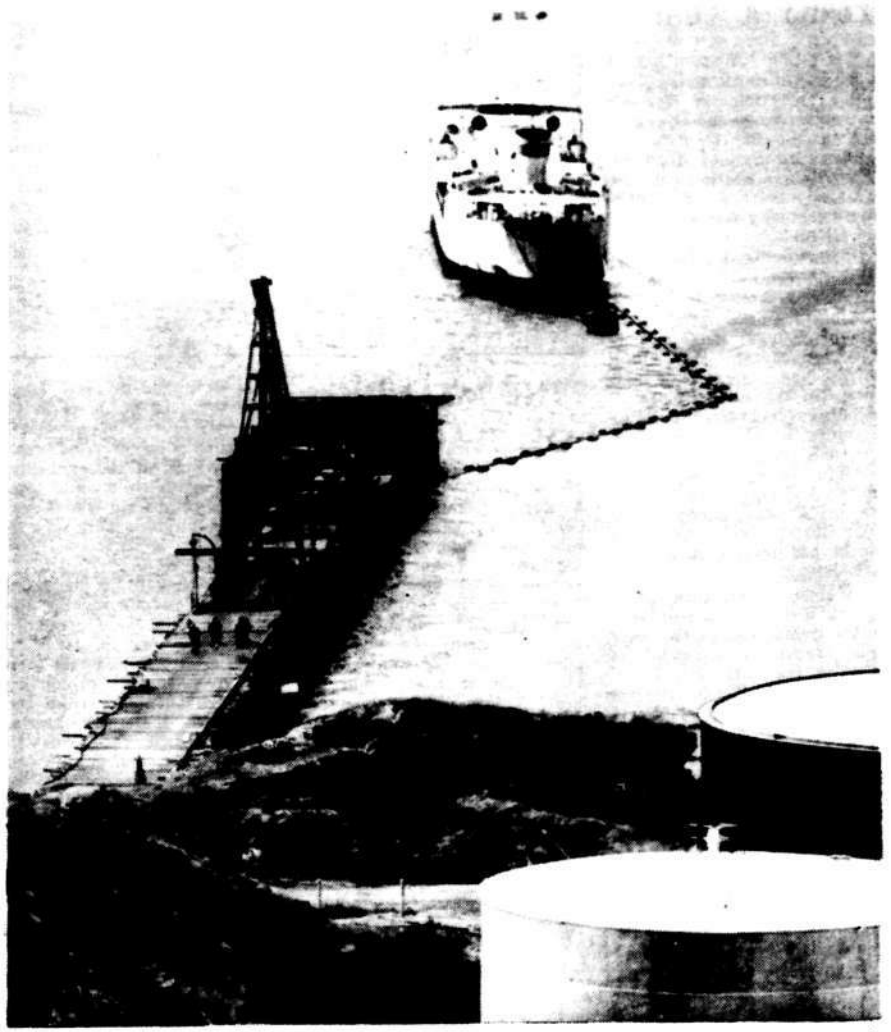
In the course of his remarks, Sir John stressed the point that to maintain Britain's position at sea a strong Merchant Navy was imperative. "When one realises," he said, "that it takes no less than seven miles of goods train to carry the cargo of an 8,000 ton tramp steamer it is clear that the bulk of the exchange of hundreds of millions of tons of goods can, in an island and world-wide relationship such as ours, only be achieved by ships."

He reminded his listeners that for thousands of miles the ships carrying these goods to and fro are open to attack in the event of war, and that they therefore need protection from such an attack from the very hour that war starts. If the British race was to survive it was necessary to pay the insurance premium as represented by an adequate Navy, and with it, of course, an adequate Army and Air Force as well.

SEA ACTS CUPID ON WRONG CONTINENT

IN May, while he was on board the South African Navy's frigate Vrystaat, A.B.D.W. Evans "posted" a letter (in a bottle) in the sea. He wanted a date with a girl in Durban. He has now had a reply but from Australia!

FIRST TANKER AT KING ISLAND



The first bulk delivery of gasolene and distillate to King Island by the Vacuum Oil Tanker "Britannica" was made at the beginning of May. Shown above is the tanker discharging through a pipe line floating on oil drums into storage tanks at Naracoopa, King Island.

—Courtesy of "The Age"

SPEEDING THE FLOW

(By courtesy of the Petroleum Information Bureau)

TO defeat the enemy "time" shipbuilders have installed huge engines capable of driving mammoth tankers through the water at speeds up to 18 knots, have incorporated batteries of pumps that can discharge cargoes of viscous crude petroleum in a matter of hours, and have in every way endeavoured to achieve technical perfection of design.

But if such tankers meet with unnecessary delays in port, if loading or unloading times are unduly long, much of the money spent in designing fast ships and efficient loading systems is wasted.

Today, new and different tanker loading and unloading systems are being adopted in oil ports all over the world, and they are bringing in a new concept of tanker turnaround technique. Time and motion study engineers are analysing every phase of activity on the wharf and deck of the tankers to ensure that the huge capital cost of the ship is put to its most economical use.

At the moment, shippers feel that they have reached the ultimate in the rate of discharge with standard equipment and procedure. Supertankers carrying cargoes of nine million gallons of crude petroleum can discharge into refinery storage tanks in about ten hours. But with more speed in making that vital linkage between ship and shore, there is a good possibility that even these times can be reduced.

A Tanker a Day

Today, there are between 60 and 70 tankers fully engaged in the business of transporting crude petroleum and petroleum products to Australia. These tankers brought a total of 2,607 million gallons of petroleum products and crude petroleum for the Australian market last year, and the buoyant demand for petroleum and its products indicates big increases in these figures in the future. But to know something of the problems confronting tanker operators, we must know something of methods of unloading in Australia, and of those in use or under consideration in other parts of the world.

The man in the oil industry responsible for the quick turnaround of visiting tankers is the marine superintendent or his counterpart. He ensures that scheduling and the hundred-and-one items from dry-docking to wharf gangs are all ready at the moment they are wanted, and that work runs to a strict timetable.

Until the advent of the supertankers and their greatly increased capacity to discharge cargoes quickly, the actual work of unloading was done by gangs of men with cranes or ship's winches, who dragged a rubber hose aboard, connected it to the tanker's discharge cocks and stood by to repair any hose bursts.

Now the necessity for high volume discharge calls for hoses too cumbersome for efficient manual manoeuvring, and oil company deck engineers are studying the possibility of mechanised dock facilities incorporating the use of either flexible or jointed steel pipe or newly-developed rubber hose.

One of the first steps in the mechanisation process was the introduction of the huge articulated steel arms of the Chiksan Company's hydraulically-powered marine and barge hoses which are now in use at Long Beach, California.

These loading arms obviate the need for the flexible hoses and their gangs of men. The arms, in batteries of five, are operated by one man at a control panel. With the aid of two fitters on the tanker's deck they can be connected to the discharge cocks in under five minutes.

Basically, the design comprises two lengths of pipe coupled by swivel joints and counterbalanced. A boom and cam arrangement enables the operator to place the flanged end adjacent to the discharge cock on a tanker's deck within one minute. Once the connection is made, the operating mechanism is placed in the "free wheel" position, and the counterbalanced arm allows for a 40-foot rise and fall of the ship and a 20-foot lateral drift during unloading operations.

Each of the five arms of the Long Beach installation can be operated independently from one set of controls. They incorporate swivel joints tested to withstand pressures of 300 lbs. per square inch and temperatures up to 225 deg. F. The entire system, with the exception of the swivel joints, can be made in Australia.

Adaptions of this system are now making their appearance and the rubber industry has answered the challenge with new tanker hoses that can be adapted to the mechanised arm system and accommodate hoses from 2 inches to 12 inches in diameter.

Bigger Hoses

A probability for the near future is the introduction of 16-inch diameter pipes with three times the discharge capacity at the same fluid velocity as the 8-inch hoses now in use. Advantages of the

Tankers discharging at Kurnell Oil Refinery Wharf, N.S.W.

new systems, in addition to the quick and easy connection of the ships to the discharge system and a high rate of flow, are a great reduction in the danger of bursting or thrashing hose and reduced fire insurance rates.

But there are other problems arising as Australia's capacity to refine its own needs of petroleum products increases. Already our needs, or export potential, and our distance from the producing oilfields of the world justify the use of supertankers on the Australian run.

Broadly speaking, the advantage of supertankers lies in their ability to carry approximately four times as much oil as a normal tanker, at an operating cost of only twice as much. In Australia, only Hobart, Fremantle, Sydney and Port Kembla have harbours which could take supertankers of 80,000 tons or more, and it is doubtful whether there are any wharf facilities within those harbours to enable such supertankers to berth.

However, the possibility of the erection of a refinery on St. Vincent's Gulf, 20 miles south of Adelaide, between Hallett's Cove and Pt. Noarlunga, could make it unnecessary for expensive harbour facilities. What is envisaged here is the laying of a 24-inch or 30-inch pipeline from the refinery reaching underwater for a mile into St. Vincent's Gulf. At this point there is a natural depth of water of 60 feet, and crude oil could be discharged into the pipeline from a supertanker standing in the roadstead.

This pipeline will be constructed in sections. When the first section is completed it will be towed to sea, and on completion of the second section this will be welded to the end of the first section and the whole will be towed a little further from shore. The process will be continued until the entire pipeline, contoured to the seabed, is afloat over its final resting place.

The pipeline will be slowly sunk by letting in water and will be guided to its predetermined position, where it will be anchored with bags of cement and sand. The offshore end of the submarine pipeline will have two flexible hoses attached, and the discharging tanker, after anchoring and tying up to strategically-placed buoys, will fish these hoses up from the seabed. It is expected to discharge 5,000 tons an hour by this method.

Similar in concept is a loading and discharging platform which has been erected three miles off-shore in the Adriatic Sea. It eliminates a great deal of jockeying for position necessary when a tanker is using the conventional submarine pipeline. This turret, firmly anchored to the sea bed and round in shape, incorporates a battery of hoses, all of which will swivel the full 360 degrees while performing their function of either loading or drawing off cargo.

These "floating turrets" allow the tanker to attach itself by hawsers at one point and swing free with the prevailing currents while still discharging, and gives them almost complete freedom of movement.

Speeding the tankers is designed to one end: to keep the cost of the ultimate products of crude petroleum within the reach of the consumer. The £4-million tanker bringing crude oil from Iran or Indonesia is generally a "one way" ship. It has one specific job and no chance of backloading. So the moment the job of delivering the oil is done, it must put to sea again to repeat the process.

In the case of the Persian Gulf run, speedier turnarounds impose a rigid regime on crews, whose approximate 18-day voyages back and forth are interspersed with only occasional glimpses of other tankers and oil ports as seen from the decks of their vessels.

This is one reason why tanker crews have the best of quarters and conditions.

NAVAL AFFAIRS— from all Compass Points

APPOINTMENT OF R.A.N. OFFICER TO U.K.

COMMODORE Plunkett-Cole, who for the past two years has been Commodore Superintendent of Training Flinders Naval Depot, has now been appointed R.A.N. Liaison Officer at Australia House, London. He will sail for the United Kingdom early next year, and will relieve the present R.A.N.L.O., Commodore N. Mackinnon.

FOUR NAVAL AIRMEN GAIN THEIR WINGS

AWARDED their wings after a fourteen months course, four naval airmen have graduated from the Pilot's Training Course which includes R.A.A.F. personnel, held at the R.A.A.F. Station at Pearce, Western Australia. The pilots are Lieutenant R. McKenzie of Queensland, Lieutenant P. Campbell of Melbourne and Sub-Lieutenants L. A. Mauritz and F. G. Hodgson of Western Australia.

Sub-Lieutenant Hodgson was awarded the Goble Trophy and mounted silver wings for the most proficient pilot on the course, and the trophy for the highest aggregate of marks during the entire pilots course. Sub-Lieutenant Mauritz was awarded the trophy for the most proficient pilot in the weapons aspect of flying.

THREE H.M.A. SHIPS TO RE-COMMISSION

THREE of the R.A.N.'s Australian-built 15,000 ton frigates "Diamantina", "Gascoyne" and "Barcoo" are to be re-commissioned. They will replace the minsweepers "Fremantle" and "Cootamundra" and the training destroyer "Warramunga".

All three ships are fitted with the latest Oceanographic equipment to enable research to be carried out off the Australian coast. Facilities are also available on each ship for the training of recruits.

H.M.A.S. "Diamantina" is to be based in Western Australia, while "Gascoyne", after doing survey work off Arnhem Land in the Northern Territory, will be based on the Eastern Coast. "Barcoo" will join the Australian Surveying Service, augmenting the two ships already employed on this essential duty.

R.A.N. OFFICER COMMANDS TROPHY WINNING SQUADRON

THE award of the Boyd Trophy for 1958 was made to 845 Squadron commanded by Lieutenant Commander C. M. A. Wheatley, R.A.N. The Boyd trophy commemorates the work for Naval aviation of Vice Admiral Sir Denis Boyd, and is the premier award of the Fleet Air Arm given each year for the finest feat of aviation in the Royal Navy. The trophy is a silver model of a Fairey Swordfish aircraft.

The award was made to 845 Squadron for the part played by their helicopters in the successful salvage of the Liberian tanker "Melika" by the aircraft carrier H.M.S. "Bulwark" in which the Squadron was embarked at the time. The three helicopters involved not only transported injured personnel from "Melika", but passed the first line of the tow which parted owing to the violent yawing of the tanker.

NEW AUSTRALIAN NAVAL ATTACHE APPOINTED TO WASHINGTON

CAPTAIN J. H. Dowson, A.D.C. R.A.N., at present Naval Officer-in-Charge, North Australia Area, has been appointed Australian Naval Rep-

resentative and Naval Attaché at the Australian Embassy in Washington. He would succeed Captain W. B. M. Marks, C.B.E., D.S.C., R.A.N., whose appointment in Washington would expire in December. Captain Dowson will leave Sydney for the U.S.A. on 27th October.

Captain Dowson, who is a graduate of the R.A.N.C., was Deputy Chief of Naval Personnel from 4th June 1956 to 28th July, 1958. At the outbreak of the Second World War he was serving with the Royal Navy and he continued that service until June, 1940. He subsequently served in H.M.A.S. "*Norman*" in the Mediterranean, in command of H.M.A.S. "Bendigo" in New Guinea waters and in H.M.A.S. "Hobart".

MALTA SWITCH

IN a material, if not a strategic sense the Navy has now begun to relax its grip on Malta.

Our smaller Navy of the future will not require all the facilities which have for generations been necessary to maintain control of the Mediterranean, so the naval association with the George Cross island, while remaining firm, will not so completely influence its life as in the past.

The Navy will continue to use Malta as a base and will remain responsible for some of the functions in the dockyard, mainly the Port Auxiliary Service and the electrical generating station. The post of Admiral Superintendent is, however, being lapsed and all naval authority placed under the Flag Officer, Malta.

ANOTHER "DREADNOUGHT"

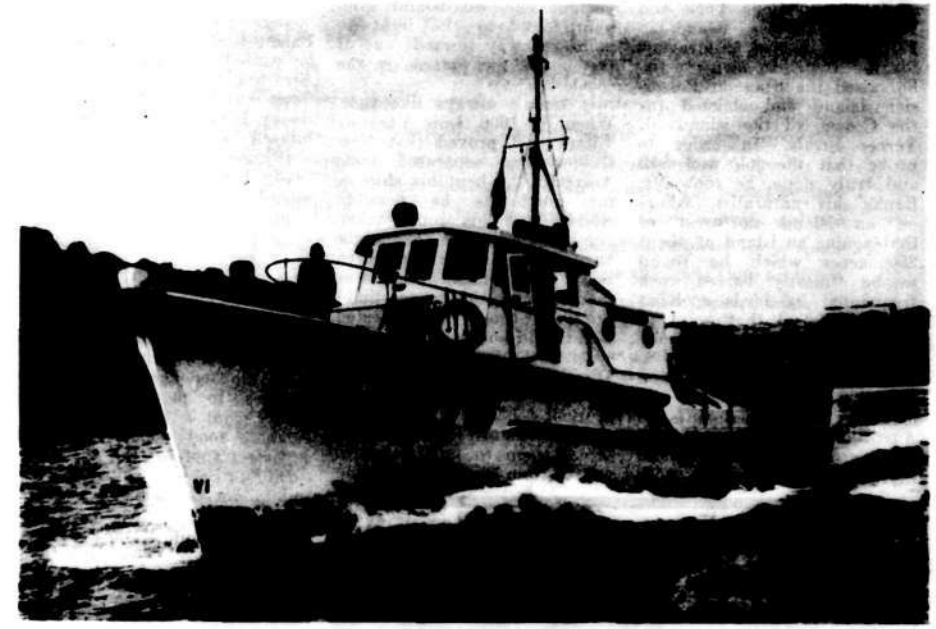
IMMEDIATELY it was announced that a contract had been signed for the supply of a nuclear propulsion unit manufactured in the United States. Parliament was told that the keel of the submarine will be laid this year, and within 14 days the Admiralty made it known that the Commanding Officer designate and other key officers and ratings have already been selected.

From steam to nuclear propulsion is as big a step as that from sail to steam. The Navy has done a great deal to prepare itself for this new and fascinating adventure but training to operate the particular machinery which will be installed in the "Dreadnought" will take a long time.

Sixteen officers, who will serve in the first ship's company, have had a course of theoretical instruction at the R.N. College, Greenwich, where a Chair of Nuclear Science and Technology has recently been established. Thirteen ratings, who will make up the nucleus of the company, are to be trained in the Navy's Electrical School at H.M.S. "Collingwood" and the Mechanical Training establishment at Gosport.

Britain's "nuclear" sailors will be young and handpicked men. The first commanding officer of the "Dreadnought" will be Lieutenant-Commander B. F. P. Sambourne, R.N.

NEW PILOT VESSELS



The "Goondooloo", one of the three new pilot vessels built for service on Sydney and Newcastle Harbours.

EJECTION SEAT ESCAPES FROM SUBMERGED AIRCRAFT

THE Royal Air Force Institute of Aviation Medicine has been conducting trials since early 1957 into the problems of underwater escape from ditched aircraft.

The initial trials were carried out with a life-sized dummy, nicknamed Neptune, which was filled with small inflated balloons to give it the same buoyancy, as well as the weight and displacement, as that of the average living man. A standard ejection seat was used for the trials. Accelerometers and pressure gauges were attached to the dummy, and films taken of the underwater ejections.

The trials included ejection escapes from a Sea Hawk cockpit forty feet under water. The main problem of jettisoning the canopy under water is that there is no overflow to carry it away. Instead, the weight of water holds it down on top of the cockpit.

This in fact happened in October, 1954, when Lieutenant Bruce MacFarlane, R.N., made a successful escape from a submerged Wyvern. When water started coming in through the sides he took this as a sign that the canopy had jettisoned. He fired is ejection seat and was shot through the canopy, suffering minor cuts and bruises and a fractured clavicle.

A RUN ASHORE

WHEN Captain Cook sailed between Cape York and Prince of Wales Island in 1770 and named Endeavour Strait after his own vessel, he raised the Flag on Possession Island and claimed for the Crown all the islands of Torres Strait. In order to prove that the job was well and truly done, he took Mr. Banks, his naturalist, ashore on an island nor'-west of that again: an island of about 250 acres which he found to be "mostly barren rock frequented by birds such as boobies". And that was the name he gave it — Booby Island.

Of the two hundred and twenty-five manned and unmanned lighthouses on the Australian coast, Booby Island lighthouse is one of those that have a permanent staff. A lonely spot but an important one, east-bound shipping looks to the light to point the way towards one of the busiest sea lanes on the coast.

It wasn't always like that. When, in 1606, Luis Vaez de Torres first proved that New Guinea was separated from Australia, he kept his ship as far north as he possibly could. Had his route taken him further south he might have fallen in with a Dutch vessel from Malacca that was there about the same time; skirting those reef-infested waters and holding to the west coast of Cape York as far as Duyfhen Point.

To the Dutch, the bare rock of Booby Island was just one more of many seen, and the second man to find it useful was Captain Bligh. After being cast adrift from "Bounty" with eighteen of his crew, he called at Booby Island in the course of that incredible voyage of 3,600 miles from the Pacific to Timor, during which he passed through Endeavour Strait seventeen years after Cook was there. Bligh saw in Booby Island a chance to rest himself and his men, and, not knowing that it had already been named, called the island "Booby" in his turn.

There was a sequel to Bligh's visit, for, during his troubled term of Governor of New South Wales, he saw that food and water was stored on the island for the use of anyone unfortunate enough to need them. Later on, the British Government allotted the sum of £50 a year to provision Booby Island, and a large cave became a food depot. It was a perfect spot for the aid and comfort of shipwrecked sailors, for the island was uninhabited in an area in which the local population were cannibals to a man. But the booby birds didn't attract them. They left the place alone, and, when it was found that a crack in the rock led to an underground cistern of fresh water, amenities were complete.

As time went on, the island became a recognised spot for a run ashore. Passing shipping formed the habit of putting in to leave letters or pick up mail. There was a post box for the convenience of all: unofficial but effective and quite famous.

After the establishment of a lighthouse about the turn of the century, the food depot and post office on the island were allowed to lapse. But on the walls of the cave are scratched and carved the names of ships and the men who sailed them long ago — and, of course, there are the booby birds.

HELICOPTERS AND THE FLEET

By HUMPHREY WYNN

(of the Editorial Staff of "Flight")

HELICOPTERS have considerable advantages over fixed-wing aircraft in the task of detecting submarines; and because a potential enemy would have formidable underwater forces, the Royal Navy is steadily increasing its helicopter equipment.

In his Explanatory Statement on the Navy Estimates for 1959-60, the First Lord, the Earl of Selkirk, said that a number of front-line squadrons of Whirlwinds had been formed for the anti-submarine role. He added that a production order for the Wessex, which will be the Navy's first gas turbine-powered helicopter, had been placed; and he went on to explain just why the Admiralty was putting increasing emphasis on the use of rotary winged aircraft:—

"The introduction of these helicopter squadrons is making our anti-submarine forces more effective and flexible. The helicopter, with its greater mobility and almost complete immunity from submarine attack, can range out beyond the Fleet or convoy. A helicopter's sonar operates under almost ideal conditions; and in addition the aircraft itself cannot be tracked by the submarine. The chances of a submarine escaping detection and destruction, before reaching a good firing position, are much reduced. Thus the Fleet gains a greater defence in depth. At present helicopters at sea are operated for the most part from aircraft carriers, but investigations have shown that they can be operated from other classes of ship as well."

Some of the implications of this extremely interesting statement will be discussed later, in a reference to helicopter training and the techniques adopted by these aircraft. It seems logical at first to mention the supply of crews. If the Navy is to have many more helicopters, it must have pilots to fly them.

Pilots will be trained not only in the anti-submarine but also in the commando role; for when H.M.S. "Bulwark," which is being converted into a commando carrier, comes into service next year, she will carry a force of helicopters. It is possible, too, that before long the Navy will have another commando carrier on its strength.

Assuming that the Navy will receive more Whirlwinds and the gas-turbine Wessex for these new squadrons in the next year or so, we come back to consider some of the implications of the First Lord's statement. He mentions the helicopter's "almost complete immunity" from submarine attack; that its sonar (detection equipment) "operates under almost ideal conditions;" and that "the aircraft itself cannot be tracked by the submarine." What advantages does the helicopter in fact possess, compared with its fixed-wing counterpart, for anti-submarine duties?

This question was very clearly answered in "Flight" for 2nd May last year in an article describing the work of one of the R.N. anti-submarine helicopter squadrons. The writer put the difference in these terms:—

"The main advantage which a helicopter has over a Gannet — or a Shackleton or any other fixed-wing aircraft for that matter — is that it can lower its own asdic transducer into the sea, transmit its 'ping' and receive an echo from any underwater object in the vicinity. In other words, it has an active detector, as distinct from passive detection by sonobuoys. It scores over ship-operated asdic also in not being affected by the sounds of the ship's own passage through the water." (These detection duties involve a crew of three — pilot, observer and underwater controller, i.e., sonar operator).

No wonder, then, that in face of an underwater threat more formidable than any before, the Navy should be pinning its faith more and more on helicopters. It now has only one fixed-wing anti-submarine squadron left, and that will be converting to helicopters when H.M.S. "Eagle" goes in for refit.

Nevertheless (to quote again from the "Flight" article) "the practical concept of using Naval helicopters for routine anti-submarine work on a large scale — as opposed to limited exercises — is still relatively new." So is the practice of landing Commando forces by helicopter from aircraft-carriers, a technique first used operationally during the Suez action in November, 1956; and undoubtedly in both spheres many new tactics have to be worked out, so that young pilots entering the Navy under the five-year plan will be under training while the techniques they are to follow are still in course of formulation.

At the Joint Anti-Submarine School at Londonderry the R.A.F. and the Royal Navy study each other's techniques, the former's based on fixed-wing and the latter's on rotary wing aircraft. While the R.A.F. as a land-based force operating long-range aircraft for this purpose persists with Shackletons, the Navy is getting rid of the fixed-wing aircraft it previously used on A.S. duties; and with the opening of an operational training centre at Portland on 24th April, the production of helicopter pilots will be steadily increased to fulfil the new needs.

This adoption of the helicopter as a front-line aircraft marks virtually a revolution in Naval thinking, as the historical statistics show. For as recently as 1957 the Navy had only one operational helicopter squadron, No. 845; and the second, No. 820, was only commissioned in January last year. Now the trend is not only to form new squadrons, as the First Lord explained, but also to convert former fixed-wing squadrons to rotary wing equipment. Thus No. 719 Sqn., which was recently disbanded at R.N.A.S. "Eglinton" in Northern Ireland as a Gannet unit, is being reformed at Portland as No. 737 with Whirlwinds.

With the increasing number of helicopters coming into R.N. use, the number of floating bases from which they can operate must also be increased. Normally, such bases will be provided by aircraft carriers, the only type of ship which can operate aircraft in large numbers.

Thus the new carrier "Hermes," which is to do trials this summer and is expected to join the Fleet early next year, will be equipped to carry A.S. helicopters as well as the Navy's new family of fighter and strike aircraft.

The "Tribal" class general-purpose frigates are the first frigates designed to carry a helicopter for A.S. reconnaissance. The first of them, H.M.S. "Ashanti," was launched at Glasgow on 9th March. Considering the limited space there is in a frigate anyway, this is remarkable proof of Naval confidence in the helicopter's landing and take-off abilities. The new guided-missile destroyers, on which preliminary work has begun, are designed to take a helicopter.

So the Navy is clearly now going in for these aircraft in a big way; not only is it getting more Whirlwinds and the new Wessex, but a pre-production order has been placed with Saunders-Roe Ltd., by the Ministry of Supply on behalf of the Admiralty for the P.531. This is a turbine-powered, five-seater general-purpose helicopter; it made its first public bow at the Farnborough display last September. The size of the order has not been disclosed; nor has the use to which these nimble machines are to be put.

It has been assumed so far in this article that the submarines against which the Navy's helicopters would operate would have conventional means of propulsion. The use of nuclear power poses an entirely new threat. As Mr. Orr-Ewing put it in the Navy Estimates debate when, referring to the historic voyage of the U.S.N. submarine "Nautilus" under the North Pole last year, he said that this "rubbed in the strategic as well as the technical potentialities of nuclear submarines." In fact, the development of such vessels, able to stay under water for very long periods and to deliver weapons while submerged poses a terrible threat involving the re-thinking of our anti-submarine concepts.

Meanwhile, the existing threat is serious enough, with the increasing numbers of Russian submarines and their long-range operations; and the Navy is exercising all its imagination and ingenuity to counter it.

Helicopters provide one of the chief countermeasures; frigates now building and major warships are to be fitted with an asdic which, in performance, will be five times better than the present type and in advance of any comparable existing detection devices; and with the opening in March of the new underwater weapons establishment at Portland, to undertake and direct all research and development on anti-submarine weapons, it cannot be said that the Navy is sitting still in the face of undersea warfare threats which daily grow more formidable.

—From "The Navy"

THE MERCHANT SERVICE

RETIREMENT OF SHIPPING CHIEF

TOWARDS the end of May, Captain D. S. Bull, who first went to sea at the age of 15, retired from the position of Commonwealth Director of Navigation. He has filled this position for the past four years, and has been with the Department of Shipping and Transport since 1929.

Captain Bull went to sea as a deck boy in 1910 in the New Zealand barque "Jessie Craig." After five years he was first mate. At 21 he was in command of his first ship and was fully qualified as master of an ocean-going vessel. He is one of the diminishing band of master mariners in Australia who hold an extra master's (ordinary) certificate.

During the war of 1914-18, Captain Bull served as lieutenant R.N.R., commanding an armed trawler in the Mediterranean. Captain Bull has represented Australia on several important international conferences on maritime affairs, and last year attended the court of marine inquiry in Hong Kong into the disappearance of the ill-fated "Ian Crouch."

S.S. "CRONULLA" — EXCHANGE OF PICTURES

AN interesting ceremony recently took place in Sydney on board the A.U.S.N. Co. Ltd.'s s.s. "Cronulla," when the President, Mr. H. J. C. Cartledge, and the Shire Clerk, Mr. D. R. Kirkby, of the Council of the Shire of Sutherland, were entertained following the exchange of a framed photograph of "Cronulla Beach" for one of s.s. "Cronulla." Mr. R. J. McBurney, a managing partner in Macdonald, Hamilton & Co., managing agents for the A.U.S.N. Co. Ltd., made the presentation on behalf of the company, whilst Mr. Cartledge presented the Council's picture to Captain J. C. McCallum of the "Cronulla."

The "Cronulla," built in 1948, was originally named "Admiral Fraser" as a tribute to the then First Sea Lord, Admiral of the Fleet, Lord Fraser of North Cape. She was purchased by the A.U.S.N. Co. in the United Kingdom in 1954 and brought to Australia, being re-named "Canberra." She operated in the Australian coastal service under this name until April, 1958, when the company relinquished the name "Canberra" to the P. & O. S. N. Co. for their new 45,000-ton super-liner, at present under construction in the United Kingdom. The new name "Cronulla" was taken from the well-known beach resort near Sydney.

FAIR LADY

"THE liner she's a lady," sings Kipling. And a Royal one at that, if the double-E surmounted by a formalised Elizabethan eight-arched crown on the bows of the Orient Line's new 40,000-tonner "Oriana" means anything. Expected to be on the England-Australia run via Suez next year, the owners of the vessel have chosen the romantic name which the poets of the day bestowed upon Queen Elizabeth I, as something that captures the spirit of the present Reign.

With a graceful profile "Oriana" seems built to go, and her makers, Vickers-Armstrongs Ltd., give her a service speed of 27 knots, which will lop the normal running time between England and Australia by one week.

"Oriana" will provide a waterfront novelty in being able to move sideways. Circular steel casings arranged transversally at bow and stern house propeller assemblies, which can turn the vessel on a threepenny-bit. Useful for berthing and other difficult manoeuvres in confined waters.

NEW TANKER CONSTRUCTION

AMONGST a number of new ships that are being talked about, oil tankers coming into service include the 18,750 d.w.t. vessel "Maloja," owned by the Charter Shipping Company of Bermuda, and the 13,000-ton tanker "Queda," which is the first vessel of her type to be built for the British India Steam Navigation Coy.

Launched in April last, "Maloja" is one of six tankers on order, totalling 197,000 d.w.t., for the Charter Shipping Coy., which was incorporated in Bermuda in 1956. She is designed for bulk carrying; a single deck type with poop, bridge and forecastle. She will have a service speed of 14½ knots, and a complement of 65 officers and crew. There are 27 main cargo tanks. Trials are scheduled for August.

"Queda" has completed trials, and will be making her maiden voyage to Texas under timecharter. She is commanded by Captain L. A. Bunn, while her Chief Engineer is Mr. R. M. Kelso, R.N.R. Both officers have been with the B.I. Coy. for many years.

With a service speed of 14½ knots, "Queda's" hull is also divided into 27 cargo tanks, with a small hold forward for cased cargo. Accommodation is amidships for officers and aft for crew.

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CLIMATE COMES, TOO

WHEN she first entered service in 1948, s.s. "Oreades" of the Orient Line provided air conditioning facilities in her public rooms and in parts of the First Class accommodation. Now the whole ship, including crew's quarters, is air-conditioned. Just completed in the shipyard of Harland & Wolff in under eleven weeks, this big job has cost the company £1-million stg. and kept 1,625 men (200 on night shift) employed.

Hitherto the ship's machinery has handled a forward air-conditioning plant, electrically driven, of 1,750,000 B.T.U. capacity, and an aft vacuum refrigerating plant of 1,875,000 B.T.U. capacity, giving a total of 3,625,000 B.T.U.s.

Now the air-conditioning machinery required for the fully air-conditioned ship is approximately 14,000,000 B.T.U.s, additional refrigerating plant, totalling 12,500,000 B.T.U.s, has been installed. The extra horsepower required for this alone is the equivalent of that needed to drive a modern 3,000-ton cargo ship at 12 knots. The additional refrigerating machinery consists of six turbo-driven Areton "6" compressors 225 B.H.P. each, with ancillary equipment, three sets being positioned forward of the refrigerating machinery compartment in a new refrigerating machinery room in No. 3 hold, and three sets placed aft, between the propeller shafts in the space vacated by the old vacuum refrigerating plant, which has been removed from the ship. The remaining original air-conditioning refrigerating plant now comprises part of the main refrigerating machinery, and will be used to supplement the new forward installation.

Existing supply fans have been fitted with brine coolers and filters on the inlet side of the fan intakes, and the existing Thermotank heating units have been replaced with air-conditioning units. All units are supplied with chilled brine, and space temperatures are controlled by space thermostats regulating the brine flow through the coolers.

NEW PILOT VESSELS

EARLY in May, the last of the three new pilot vessels constructed by the Maritime Services Board of N.S.W. was lifted from a temporary cradle on the wharf at Goat Island by the 150-ton crane "Titan" and placed in the water.

Named "Goolara" — an aboriginal word meaning "moonlight" — the new vessel and her sister ships, "Goondooloo" and "Giralong" will ultimately replace the pilot steamers "Captain Cook" at Sydney and "Birubi" at Newcastle. The three ships are of similar dimensions, viz., length overall 66 ft., beam 17 ft. 9 in., depth 8 ft. and a draft forward and aft of 4 ft. 6 in. and 6 ft. 3 in. respectively.

AD ASTRA

FINANCIAL approval has been given for a large telescope to be known as the Isaac Newton Telescope to be constructed and erected in a special building in the grounds of the Royal Greenwich Observatory at Hurstmonceux Castle in Sussex. The project was sponsored by the Royal Society at the instance of the Royal Astronomical Society, and is to be used by visiting astronomers as well as by the staff at the Royal Greenwich Observatory. The telescope, which will be the largest in the United Kingdom, will have a 98-inch aperture, weigh about 100 tons and be some 30 feet long. The cost of the whole project, including erection and preparation of the site, is estimated at £660,000 at present prices, and will take five to six years to complete. Expenditure will be shared equally between the Treasury and the Admiralty.

NEW ENTRY

THE standard of recruits now entering the Services is much higher than it used to be, according to the Director of Recruiting. Both in numbers and quality those offering for enlistment had improved over a period when opportunities in civilian life were increasingly attractive.

Enlistment figures for the last six months of 1958 were considerably better than in the corresponding period in 1957. Nearly 3,000 enlistments were effected in the period mentioned, most of them in general categories. The greatest need is still for technical men, and radio operators and mechanics are urgently required by the R.A.N.

Sea Cadet Activities

T.S. "SIRIUS"

IN the form of a letter to the Editor, the Commanding Officer of T.S. "Sirius," Lieutenant J. H. O'Connell, A.S.C.C., describes the St. George District Unit as covering that part of Sydney lying between the Cooks River and Georges River in the north and south respectively, the shore of Botany Bay to the east and the East Hills railway line on the west, about five to ten miles in from the Bay shore. When established in 1945 the unit was on Georges River, where it shared the premises of a branch of the Royal Motor Yacht Club. Some three years ago it became obvious that with the expansion of both Cadet Unit and Yacht Club the Unit would have to find a "home" of its own. Negotiations were commenced with the Municipal Councils in the area for the use of land, Rockdale Council finally making available a large area in Cahill Park on the bank of Cooks River, some ten or twelve miles from the Yacht Club site. Three ex-army huts were purchased and plans drawn up for their re-erection in an "H" shape, and building operations were soon started by the two officers and thirty cadets who were in the Unit at that time.

As we would be moving to the other end of our area when the building was ready, there was bound to be some loss of cadets, however, night parades were continued at Georges River while Saturdays were spent building at Cooks River. The building activities soon attracted a few of the local boys and they, together with a few of those who had been at the other depot, formed the nucleus of what amounted to an almost new unit. Wednesday night and Saturday parades were commenced at Cahill Park some sixteen months ago, and although only about fifteen cadets were on the roll at first, numbers have been building up steadily until today we have fifty Sea Cadets and twenty Junior (under 14) Cadets. Our greatest need at the moment is for more instructors.

[Good work, "Sirius." Full of energy and interest with a couple of ranging shots at the end that give a nice bracket. Look out, "Gayundah." Similar accounts from other States would be appreciated by everyone. — Editor.]

During the last six months or so the Unit has taken its place in all training and sporting activities. While our building is still far from complete, we have been able to offer hospitality to the St. George Rowing Club, who accommodate their shells in our boat shed, and also to T.S. "Shropshire," our "chummy" ship, who keep their sailing dinghy there as well. With the "Shropshire" dinghy and also the "Sirius" dinghies, it is rare indeed now for sails not to be sighted either or the river or on Botany Bay, for it is only a mile straight sail to the river mouth on the bay, and the boats are in use every Saturday and Sunday. The two Units also play football and cricket on a Council-maintained oval which adjoins the Unit parade ground.

A recent highlight was a "jungle landing exercise" carried out by twenty-five senior "Sirius" cadets in Royal National Park under the leadership of P.O. (Instructor) Ted Canser. The Cadets were equipped with full battle webbing gear, thanks to the co-operation of the 45th Battalion (St. George Regiment), who have volunteered any assistance possible. The exercise was a great success, and further jungle and survival activities are planned.

The more formal parades are not neglected. Once a quarter we march, led by the Unit drummers and an Ensign party, to St. David's Anglican Church, Arncliffe. These Church parades have proved very popular with the Cadets; have been very well attended and have built up much local prestige and goodwill. This year the Unit is undertaking a duty previously done by R.A.N. Reserve personnel in connection with the Arncliffe R.S.L. commemoration of ANZAC day by providing the armed guard, the Cenotaph guard and the bugler. The Unit considers it an honour to represent the Navy at such ceremonies.

The five Divisions are named after the first five Governors of the Colony — Phillip, Hunter, King, Bligh and Macquarie — and there is keen competition between them to form the best guard for colours at Divisions. These duties they take in rotation, the smartest Division providing the armed guard for the next ceremonial parade or official inspection. The Divisions carry out the theory part of the training programme on the Wednesday night parade, thus leaving Saturday afternoon for practical work or recreational activities. Sundays are spent in sailing or sporting activities, with just a little work here and

(Concluded on page 24)

Deep Water Tickets

NOTICED in "Guild News" are notes from the School of Navigation which show that during 1958 the total number of foreign going certificates issued throughout Australia was 65. This was made up as follows (1957 figures in brackets):

Master	30 (28)
1st Mate	16 (19)
2nd Mate	19 (18)

Analysis of certificates issued in the last ten years gives these yearly averages:

Master F.G.	27.1
1st Mate F.G.	25.0
2nd Mate F.G.	24.2
Total average	76.3

As remarked previously in these notes the figures are in the reverse order to what would be expected. The reasons for 2nd Mates having the lowest average would be due to many apprentices leaving the sea before or after completing their indentures, or joining the Seamen's Union. Fewer A.B.'s sit for certificates these days than previously. On the other hand a reason for Masters having the highest average is probably that quite a few of them obtained their lower certificates overseas.

T.S. "SIRIUS" from page 23 there to keep the boats and buildings in reasonable shape.

If any "Sirius" cadets read this through they can take warning that during winter when there is no sailing there will be more work, for our aim during this year is to complete our building. Then we go all out after T.S. "Gayundah" in Brisbane, which is the Unit, so we are told, with the biggest ship's company of all. Our ultimate aim, however far off these targets might be, is to be the biggest and best Unit in the A.S.C.C. What opposition do we have?

"*The History of the British Navy*", *by Michael Lewis.* (*George Allen & Unwin*) *Aust. price* 41/6.

Written by the Professor of History and English at the R.N. College, Greenwich, what is also a Penguin book is here dressed up in boards. The contents are the same though; delightful in prose, excellent in matter and proper in pride. The author handles two themes concurrently—"what the Navy is and how it came to be so, and what it did and why." All things have a beginning and before the Tudors, ships and seamen were hired in time of war to supplement the "King's Ships", paid and maintained by the Crown alone. At the conclusion of hostilities the civilian element was disbanded. They were the Naval Reserve of those days, brought in to add weight and numbers to the "Navy Royal", as the Crown's ships came to be known. English monarchs fought private wars until the seventeenth century when sovereignty was lost to the State. It was Charles II who first used the term "Royal Navy" for a fighting Service that alone served the State, until about 1800 when events led to the re-mobilisation of the country's entire shipping resources. Merchant ships and seamen became the Merchant Navy, and from then on there was the close association of amateur and professional fighting seamen that we know today. What the Navy is, and what the Navy did is the history of the British race and Michael Lewis describes it in a way to gladden the heart of anyone. This is a book to sit up over. B.H.

"*Destroyers will Rendezvous*", *by Jamieson Brown.* (*Jarrolds*) *Aust. price* 18/9.

Any narrative concerning one man's war in destroyers in the North Sea has been told before, but Jamieson Brown has little to fear in comparison. An ex Lieutenant R.A.N.V.R., he has written a good yarn in a convincing way. Both dialogue and the scenes described have an authentic ring, while distance lends a certain enchantment to views that were not so hot at one time. The tale deals with the experiences of three Australians of different types, who gained commissions under the terms of a "Yachtsman's Scheme" that took them to England. Seen through the eyes of a perceptive writer, knowledgeable readers will pick the story over for themselves. In the main, it is close enough to fact to keep one's interest. This is the first full length novel from a Western Australian writer, of whom more should be heard. B.H.

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A PURSUIT WITHOUT PRECEDENT

"*Hunting the Bismarck.*" *By C. S. Forester.* (*Michael Joseph*).

One expects to find the maximum of excitement and human interest in any story written by C. S. Forester and his latest book—the chase and sinking of the Bismarck—is no exception. The pursuit really began on the night of the 23rd/24th May 1941, when the Suffolk first made contact with her in the Denmark Strait and she was not sunk until the forenoon of 27th May. Owing, however, to the almost complete absence of dates and times in the narrative, it is not always possible to appreciate the significance of the various incidents during the chase.

But Mr. Forester writes for the layman and steers clear of tactical and technical considerations. He makes no reference to the Suffolk's radar and leaves the reader wondering why the "Admiral" and the "Rear-Admiral" should be "entertaining the Air Vice-Marshal" in the Admiralty War Room amid all the excitement. Were they the C.N.S. or D-C.N.S., the D.N.I and the Air Force Liaison?

It is amazing also that the German Admiral in a speech to his officers at Kiel, within hearing of the dockyard maties, should inform them that the Bismarck is about to sail to the Atlantic. This vital piece of information is (of course) overheard by a British secret agent. None the less it is a thrilling tale, of absorbing interest from beginning to end. G.T.

SMALL YACHT RACING

"Marks to Starboard." By Robin Stevenson. (Jenkins,)

Many of us remember Dr. Steavenson's previous book, "When Dinghies Delight," and this one is no less admirable. We are taken, as it were, on board while races are being held, participating in the excitement and with the opportunity of seeing in operation many of the secrets that go to the making of a first-class helmsman. We are told, for instance, that terylene has many advantages as a sail fabric, having less drag than cotton and being almost impervious to air. There is on almost every page something that the sagacious yachtsman will be glad to see.

B.A.

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UNDER THE NORTH POLE

"Nautilus 90 North." By Commander William R. Anderson, U.S.N., with Clay Blair, Jr. (Hodder and Stoughton.)

"Nautilus 90 North," written by the Commander of the "Nautilus", is the story of her epic voyage last year under the North Polar ice-cap. It is a thrilling sea story quite unlike any that has ever been written before. For the "Nautilus", with her nuclear power plant, bears no relation whatever to the submarine of the past 60 years, apart from having engines, periscopes and tanks for submerging.

Neither the magnetic nor the gyro compass could be relied on for navigation in Polar waters. But security considerations unfortunately prevent the author giving details of the navigational instrument—the inertial navigator, or N.6.A.—which kept him precisely informed of the submarine's position at all times. He tells us it was designed by the North American Aviation Company's engineers to guide the intercontinental air-breathing guided missile Navaho and he describes it as virtually an electronic brain, storing up information on speeds, courses, etc.

Commander Anderson has the gift of making the reader feel personally the anxieties he went through. He writes also with the modesty which all who have met him would have expected, while justifiably emphasizing the pride which he and his crew felt in their great achievement. His admiration of the designer of the nuclear power plant and of the "Nautilus" herself — Admiral Rickover, U.S.N.—knows no bounds. Due praise is also given to President Eisenhower, without whose enthusiasm and backing the voyage would never have taken place. The book includes several interesting photographs of the crew and their surroundings and a number of amusing stories illustrative of American humour.

G.P.T.

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ADVENTURES AMONG THE SEYCHELLES

"Beyond the Reefs." By William Travis. (Allen and Unwin, 21s.)

When the market value of the type of shell known as Green Snail was of the order of £300 or more per ton it seemed an excellent idea to go in search of this commodity among the Seychelles. It is true that one could encounter other than human creatures in those waters as, for instance, when the author found himself face to face with a large Red Snapper, weighing perhaps 50 lb. They examined each other with caution and then went their respective ways. There are sharks; and a hunting shark, as the author tells us from his experience, is probably the most efficient killing mechanism ever devised, and one of the most frightening. Nevertheless, William Travis had a very interesting time and one can only regret that the American synthetic industry has now succeeded in producing an imitation mother-of-pearl indistinguishable from the real article, so that the market value of Green Snail suffered such a drop that it was no longer a worthwhile occupation to go in search of it.

H.B.

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