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## THE NAVY

Vol. 25

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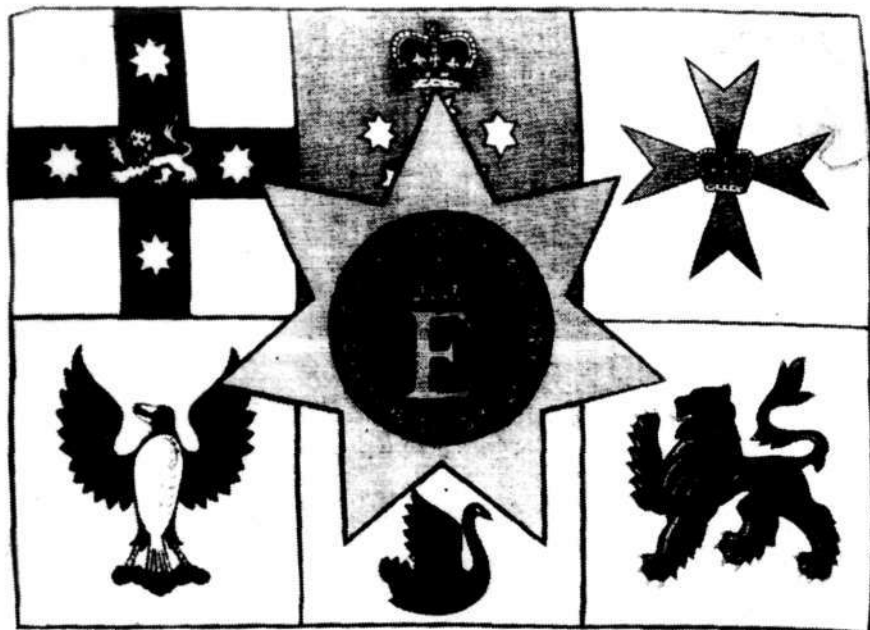
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FEBRUARY, 1963



# QUEEN'S FLAG FOR TOUR



During the Royal Tour of Australia this year Her Majesty, Queen Elizabeth, will use her own personal flag, which consists of the badges of the Australian States as they appear on the arms of the Commonwealth.

The Prime Minister, Mr. Menzies, said in Canberra that the idea of the flag was the Queen's suggestion. He had discussed it with her while he was in London last year.

Mr. Menzies said the Garter King of Arms had designed the flag, which was trimmed with an ermine border. The flag is charged in the centre with the seven-pointed gold Australian Star. Within the star is the Queen's own design of a blue roundel, charged with the initial letter "E" ensigned with a Royal Crown, both in gold, all within a chaplet of roses, also in gold.

Mr. Menzies said he hoped that all Australians would recognise the flag for what it was — the outward sign of the personal presence of the Constitutional Queen of Australia.

## H.M. Yacht "Britannia"

H.M. Yacht, BRITANNIA was commissioned early in 1954, and since that date has seen much and various service all over the world, during the course of which she has steamed 189,000 miles.

The BRITANNIA'S first employment was to bring Her Majesty the Queen and His Royal Highness the Duke of Edinburgh home from Tobruk on their return from their Commonwealth tour in April, 1951. Later in 1954, the yacht visited Cowes and Dartmouth, and afterwards went to Canada to bring home the Duke of Edinburgh from his visit to that country.

In 1955, Her Royal Highness, Princess Margaret, embarked in the BRITANNIA for her tour of the West Indies, and the yacht again visited the Mediterranean with the Duke of Edinburgh on board for the Combined Fleet Exercises. In June, the BRITANNIA visited Oslo for the State Visit to Norway, and in August took the Queen and the Duke of Edinburgh, with the Prince of Wales and Princess Anne for their tour to Wales, the Isle of Man, and around Scotland. Later, the Duke of Edinburgh embarked to visit Copenhagen.

In 1956, the yacht was again in the Mediterranean for the Duke of Edinburgh to attend the Fleet Exercises, and afterwards for a private visit to Corsica and Sardinia by the Queen, and, in June, visited Stockholm for the State Visit to Sweden. The yacht was at Rothesay for a visit by the Duke of Edinburgh to the Clyde Fortnight, and shortly afterwards the Royal

Family embarked for a tour of the Western Isles.

On 29th August, 1956, the BRITANNIA set forth on a cruise of circumnavigation of the globe, which took her 39,500 miles around both the Cape of Good Hope and Cape Horn, across the Antarctic Circle, and on the longest voyage ever performed by a Royal yacht. In September, the BRITANNIA embarked Her Royal Highness, Princess Margaret, at Mombasa, for her tour to the islands of Mauritius and Zanzibar, and thence to Tanganyika. The yacht then returned to Mombasa, where His Royal Highness the Duke of Edinburgh embarked at the beginning of his cruise which was to take him to Australia, and thence through the Southern and Antarctic and Atlantic Oceans, back to England. Between East Africa and Australia he visited the Seychelles Islands, Ceylon, Malaya and New Guinea.

The BRITANNIA spent three weeks in Australia; the last ten days in Melbourne, while the Duke of Edinburgh lived on board, attending the Olympic Games and carrying out his engagements in the State of Victoria. She then sailed for Port Lyttleton, in the South Island of New Zealand, where the Duke of Edinburgh re-embarked after flying to New Zealand, and sailed for the longest and loneliest leg of the journey, across the Southern Ocean to Antarctica. Christmas Day was spent at sea in the Southern Pacific, midway between New Zealand and Cape Horn. The Duke of Edinburgh broadcast from the yacht in the customary Commonwealth pro-

gramme organised by the B.B.C., speaking immediately before Her Majesty the Queen.

In the New Year of 1957, the BRITANNIA visited several of the bases of the Falkland Islands Dependencies Survey in Antarctica, crossing the Antarctic Circle in so doing, and then worked her way up the South Atlantic, visiting the Falkland Islands, South Georgia, Gough Island, Tristan da Cunha, St. Helena and Ascension. The last visit of the Duke of Edinburgh's cruise to The Gambia, where the BRITANNIA took the Duke of Edinburgh some 80 miles up the Gambia River.

On the BRITANNIA'S way back to the United Kingdom, the Queen embarked in her at Setubal, in Portugal, whence the yacht sailed up the Tagus to Lisbon for a State Visit to Portugal.

In May, 1957, Her Majesty embarked in the Royal yacht for another State Visit, to Denmark, which was followed by a brief, private visit to Copenhagen, and then by the Royal Visit to the Home Fleet at Invergordon. At the end of July, the yacht conveyed Her Majesty for her visit to the Channel Islands, and thereafter was at Cowes Week, which was attended by the Duke of Edinburgh and the Prince of Wales.

During the winter of 1957-58, the BRITANNIA was taken in hand in Portsmouth Dockyard for her first major refit after steaming over 90,000 miles in four years.

In March, 1958, Her Majesty the Queen paid a State Visit to Holland in the Royal yacht, during which the BRITANNIA



visited Amsterdam and Rotterdam. In May, the yacht conveyed Her Majesty Queen Elizabeth, the Queen Mother, on a visit to Northern Ireland, and in June Her Majesty the Queen visited ports on the East Coast, and in Scotland. At the end of July, the Duke of Edinburgh joined the yacht at Cardiff after the Empire Games, and visited the Sicilly Isles and the Naval Colleges at Dartmouth and Plymouth, before landing at Portsmouth. In August, the Duke of Edinburgh and the Prince of Wales spent two days in the BRITANNIA at Cowes, and later were joined at Southampton by Her Majesty the Queen and Princess Anne. The yacht then sailed for a ten-day private cruise to the Western Isles and the West Coast of Scotland. En route, official visits were paid to Holyhead and ports on the Clyde.

In January, 1959, the BRITANNIA again sailed for a round-the-world cruise, returning to Portsmouth in May, 1959. During this voyage, she embarked the Duke of Edinburgh at Rangoon, on completion of his tour of India and Pakistan, and conveyed him to Singapore, Sarawak, North Borneo, Hong Kong, the Solomon Islands, the Gilbert and Ellice Islands, Christmas Island, the Panama Canal and the Bahamas — a distance of 29,000 miles.

The BRITANNIA sailed again in June for Canada, where she embarked Her Majesty the Queen and His Royal Highness the Duke of Edinburgh at the mouth of the St. Lawrence River. On 26th June, 1959, President Eisenhower joined Her Majesty on board the yacht after the official opening of the St. Lawrence Seaway, for a cruise through the early part of

the system. The BRITANNIA conveyed Her Majesty on to Chicago and Lakehead, where she left for her tour of Western Canada, re-joining the yacht in Eastern Canada three weeks later. The BRITANNIA returned without the Royal Standard to Portsmouth in August, 1959, having increased her mileage for the year's operations to 40,000.

The BRITANNIA began the 1960 season with a cruise to the West Indies with Her Royal Highness the Princess Royal embarked, sailing in January and returning to Portsmouth in April, after visiting British Guiana, British Honduras and the principal West Indian Islands.

On 6th May, 1960, Her Royal Highness Princess Margaret embarked with her husband in the BRITANNIA in the Pool of London, and spent her honey-

moon on a cruise to the West Indies, disembarking at Portsmouth on 18th June.

The BRITANNIA attended Cowes Week, 1960, and sailed from there to Cardiff with His Royal Highness the Duke of Edinburgh embarked. Her Majesty the Queen, with the Prince of Wales, Princess Anne, Princess Alexandra of Kent and Prince Michael of Kent, embarked at Cardiff for the visit of Her Majesty the Queen to Orkney and Shetland. The Queen and other members of the Royal Family later left the yacht at Aberdeen, and the BRITANNIA returned to Portsmouth, where she began her quadrennial survey and refit in the dockyard in November, 1960, completing in March, 1961.

On 17th April, 1961, Her Majesty Queen Elizabeth, the Queen Mother, embarked in the yacht at Portsmouth for her visit to Gibraltar and Tunisia. Later, the BRITANNIA proceeded to Cagliari, where Her Majesty the Queen and His Royal Highness the Duke of Edinburgh embarked for the State Visit to Italy, which included visits to Naples, Ancona and Venice with the Standard flying. Her Majesty the Queen left the yacht at Venice, and the BRITANNIA proceeded for the Eastern Mediterranean with Their Royal Highnesses the Duke and Duchess of Gloucester embarked. His Royal Highness the Duke of Gloucester opened the Commonwealth War Memorial at Athens and visited war graves in Turkey, Greece and Crete. The yacht returned to the United Kingdom in June.

Her Majesty the Queen embarked in the BRITANNIA in the Pool of London in July for passage to Shotley for her visit to Suffolk, disembarking later at Portsmouth.

The yacht again attended Cowes Week in 1961 with His Royal Highness the Duke of Edinburgh and other members of the Royal Family on board, and afterwards sailed for Southampton, where Her Majesty the Queen embarked for her visit to Bellast and subsequent cruise round the Scottish coast.

At the end of 1961, Her Majesty the Queen and His Royal Highness the Duke of Edinburgh visited five West African countries, and in October the yacht sailed for Ghana, calling at Las Palmas and Freetown en route. Her Majesty the Queen and His Royal Highness the Duke of Edinburgh embarked at Takoradi on 20th November, and subsequently visited Monrovia, Freetown, Bathurst and Dakar, where Her Majesty disembarked, and the yacht returned to the United Kingdom via Gibraltar in mid-December. During the visit to The Gambia, the yacht proceeded 40 miles up the Gambia River from Bathurst.

In February, 1962, Her Royal Highness the Princess Royal embarked in the BRITANNIA for visits to Gibraltar, Cyprus and Libya, before returning to the United Kingdom at the end of March.

At the end of the following month, Her Majesty Queen Elizabeth, the Queen Mother, visited the Isles of Scilly in the yacht, returning to Portsmouth on completion.

In July, 1962, Her Majesty the Queen and His Royal Highness the Duke of Edinburgh embarked in the yacht at Fowey, subsequently visiting Plymouth and Dartmouth, and in the following month His Royal Highness embarked for Cowes Week, followed by the start of the Tall Ships race in Torbay.

## The Flag Officer, Royal Yachts

The Royal yacht is commanded by Rear-Admiral J. C. C. HENLEY, C.B., who is the only Flag Officer in the Royal Navy who is also captain of a ship.

Admiral HENLEY is a Gunnery Specialist, and during the war served in Home Waters, the Mediterranean and the Far East as Gunnery Officer of H.M. Ships BIRMINGHAM and KING GEORGE V.

Service in the Gunnery Division of the Naval Staff at the Admiralty and as Executive Officer of the cadet training cruiser DEVONSHIRE followed, and he was promoted to Captain in June, 1951.

As a Captain, Admiral HENLEY commanded the Gunnery School at Devonport, 1951-53, and the Daring Class destroyer, H.M.S. DEFENDER, in the Far East in 1954-55. Between 1955-57, he served in the rank of Commodore as the British Naval Attaché in Washington, and Chief of Staff to the Admiral, British Joint Services Mission. He then became Director of the Royal Naval Staff College, Greenwich, from 1957-59.

When promoted to Flag Rank in June, 1960, Admiral HENLEY was serving as the Chief of Staff to the Commander-in-Chief, Mediterranean. He remained in that appointment until October, 1961, and took up his present appointment as Flag Officer, Royal Yachts, in January, 1962. He was made a C.B. in June, 1962.



Australian Navy men who have joined the "Britannia" receive their "Australia" shoulder flashes.



## NAVY STEAMS HALF-MILLION MILES IN 1962

During the past 12 months, ships of the Royal Australian Navy have steamed more than half-a-million miles, and all nine major warships of the combat fleet have seen service in South East Asia.

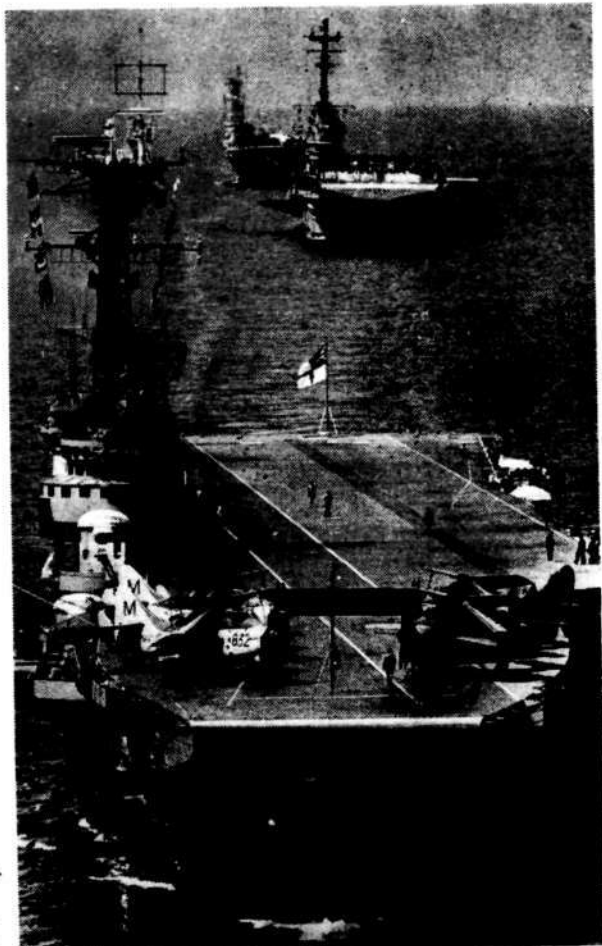
The R.A.N.'s activities during 1962 were reviewed recently by the Minister for the Navy, Senator Gorton.

He said it had been a significant and busy year for the Navy. The number of vessels in commission had increased from 19 to 26. The newly-commissioned ships included a 17,000-ton fleet tanker, H.M.A.S. SUPPLY, a minesweeping squadron of six vessels, and the aircraft carrier, SYDNEY, in her new role as a troop transport. One ship, the cadet training vessel, SWAN, had been retired during the year.

Service personnel increased by 7 per cent during 1962, from 10,803 officers and men to 11,310.

Navy ships steamed a total of 580,000 miles, and called at 82 different ports. Thirty-five of these ports were in South East Asia, where more than 4000 Australian sailors saw service in a total of 18 ships. Nine combat ships served with the British Commonwealth Strategic Reserve or took part in international exercises in South East Asia.

During the same period, aircraft of the Fleet Air Arm recorded a total of some 8000 hours' flying time. The "front-line" Ganet anti-submarine and Venom jet fighter squadrons operating from the carrier, H.M.A.S. MELBOURNE, logged nearly 3000 hours.



H.M.A.S. MELBOURNE leads a British and U.S. Carrier during last year's SEATO Exercise.

The Royal Australian Navy directed one of SEATO's biggest anti-submarine exercises, "Sea Devil", during the year, and joined with the United States in organising a SEATO control of shipping exercise, "Seascope". The Navy's two

training-oceanography frigates, GASCOYNE and DIAMANTINA, took part in the international survey of the Indian Ocean, and four survey vessels were at work in Australia and New Guinea.

## H.M.A.S. NIRIMBA GRADUATION

Address by REAR-ADMIRAL G. G. O. GATAGRE, C.B.E., D.S.O., D.S.C. and Bar, Flag Officer-in-Charge, East Australia Area.

It is a great pleasure for my wife and me to be with you to-day, and a particular privilege to have this opportunity to participate in your graduation ceremonies.

The reputation of this Establishment is much admired and highly respected. And deservedly so, for the graduates of H.M.A.S. NIRIMBA have proved to be outstandingly valuable assets to our Navy, and hence to our nation.

And so it is indeed a pleasure for me to express my heartiest congratulations to those who won through strong competition to enter this Establishment, and who now have completed its difficult and testing course of instruction.

For the past three years in the case of electrical artificer apprentices, and the past four years in the case of the other graduates, these young men have applied themselves diligently to acquire great technical knowledge and skill, to acquire physical and mental fitness, to prepare for the important responsibility and contribution which is to be theirs in their Naval service. The electrical artificers have yet to complete at FND a further 18 months of apprentice training.

The training of today's graduates has been intensive — often arduous — and for the most part highly specialised. But today, as we congratulate them on reaching the high graduation standards of technical skill and knowledge, I want to talk with the graduates of the great responsibilities which they are to carry as men given authority over others — for one year as Leading Rate and thence upward to Petty Officer and Chief Petty Officer.

The first thing to be said is that you must never allow your day-to-day technical tasks and duties to obscure, or to set aside, your equally general responsibilities as Leading Rates, Petty Officers or Chief Petty Officers. You must be quite clear in recognition of the fact that those responsibilities are always yours, wherever you are and whatever you may be doing. And those responsibilities must be accepted. The example of loyalty, devotion to duty, pride in the Service must be set by those in authority, as you will be.

To-day, and for the foreseeable future, the strength of the Free World depends upon uninterrupted use of sea communications between

its member parts. Such freedom of the seas is gained, and is kept, by sea-power. Without sea-power to keep secure our sea communications, Australia would be unable to give or to receive assistance in time of war, unable to contribute anything to the Free World alliance. We would become a liability in an alliance which cannot afford liabilities. So to-day, and for the foreseeable future, Naval power is an indispensable part of our national strength. That is why an efficient, effective Navy is more important to Australia than it has ever been, and why our mission is so significant.

And it is also the reason why the men who serve in the Navy must be the best — the very best. For an organisation is only as good as the men who make it work, who give it life, meaning and reality.

To get the Navy's job done, each of us in authority must work and contribute in every way we can to guide, to channel the effort, the spirit, the devotion of the men for whom we are responsible. That is why the leadership exercised by our Chief and Petty Officers and Leading Rates, and the example they set, is so very important.

The Commanding General of U.S. Marines once said: "I have no trouble finding people to handle machines. The problem is to find people who can handle people."

We know this graduating class can handle machines; now you must prove yourselves capable of handling people.

The successful handling of people demands leadership, so let us look at the qualities an effective leader must have.

First, *knowledge*. Knowing your job. A real leader knows his business, learns everything he can about it. As his responsibilities increase, the more he must know to do his job successfully. And his knowledge is broadened by applying usefully what he has learned.

*Experience* adds to knowledge. It consolidates what we know already, and it drives us to further study by revealing how much more there is for us to learn. From our experience, we can see the right way, and sometimes the wrong way, to do a job. We see the alternatives and learn to evaluate performance. From this kind





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of appraisal we develop the ability to make decisions. We develop judgment.

*Judgment* involves weighing the issues — being able to distinguish what's important and what is not. Good judgment allows us to choose the best course of action, the best way to do a job.

The success of any endeavour hangs on sound judgment and correct decisions. To be a good leader you must have good judgment and make right choices — be a winner. This is important, because people only follow the men who are successful — who are winners. No one ever follows a consistent failure.

With knowledge, tempered by experience, and strengthened by the power of sound judgment, the leader builds the reputation of a winner. He builds a record of success. He gains the confidence of his superiors and his subordinates.

Most of all, he develops confidence in himself — he acquires the priceless attribute of self-reliance. Self-confidence will enable you to step forward and take any job — make a decision, and act on it. When men have a leader with faith in himself, and confidence in them, they'll always rise to the occasion.

### Enthusiasm and Leadership

*Enthusiasm* is another basic and essential trait. In over 40 years of Naval service, I have never seen a leader who wasn't enthusiastic. It is the quality of believing in what you are doing — believing in it so much that it shows in everything you do. In the Navy, enthusiasm shows in devotion to duty — the Naval leader has enthusiasm for his country, his Navy, his ship, his men. This kind of enthusiasm is contagious — it rubs off on others.

To exercise authority by leadership, the qualities and traits I have mentioned are some of those that are needed. But to produce results that serve the good of our nation and our Navy, you need even more.

Above all — *integrity*. A leader must be honest with himself, and with others. He must believe in principles and live by them — must recognise right from wrong, and be willing to stick up for what is morally right. It can be tough to say "no", especially when everyone else seems willing to go along, to drift with the tide. But this is a certain test of leadership.

To do what is right sometimes takes moral courage. But the leader who adheres to what he believes is right, who is ready to stand up and be counted, will always earn respect.

THE NAVY

*Integrity, ability and self-confidence* should be the mainspring of those set in authority. They will surely inspire the best leadership response. Let those qualities show clearly through all that you do.

The effective Naval leader sets high standards, and insists on them.

He puts his country, his ship and his men ahead of himself — he does so because he is responsible to each of them. And at least in part he's responsible for each of them as well. His loyalty will inspire loyalty.

Leaders, and those in authority, must possess human understanding — must know what makes men tick. They know their own shortcomings, weaknesses, strengths — try to correct their weaknesses, develop their strengths. And they know, and help others likewise.

Finally, to be a leader, you must *want to lead*. A man can possess all the other desirable qualities of leadership, but to lead he must want to accept the responsibility — must want to seize his opportunity for leadership.

You graduates will have many such opportunities. Make sure that you are ready for each chance as it comes along.

Be sure that you have the know-how, the enthusiasm, for the job — the self-confidence it takes. Have the strength that comes from integrity, from moral courage, from a sense of personal responsibility. Most of all, have the willingness to act — the vigor, determination, drive. Your principles and capabilities will produce nothing unless you personally can translate them into action.

You have great prospects in a great Service. Grasp them for the good of the Service and the good of our country, and you will be satisfyingly rewarded.

May each of you have fair winds, smooth sailing and great success in your Naval Service.

To conclude my address, I congratulate all who have in any way contributed to the training and development of this very fine body of young men who graduate to-day. I am sure they are a product of which you are justly proud. I am also sure that their contribution to the Navy in the service of their country will be of a great satisfaction to you and a matter of pride to all Australians.

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## CAPTAIN'S REPORT

The new Commanding Officer of H.M.A.S. NIRIMBA, Captain J. R. McMurray, in his report, said:—

"I have been in command of NIRIMBA for only four weeks, and this report of the activities of the Establishment rightly belongs to my predecessor, Captain F. W. Purves.

"During NIRIMBA'S six and a half years' existence it has been found necessary to continually review the training policy, and whilst no radical changes have actually taken place in the past term, preliminary arrangements have been made to introduce one shortly.

"I refer to the training of Electrical Artificer Apprentices whose course in future will contain a much greater electronic content than has hitherto been the case.

"This is necessary because of the increased amount of electronically controlled equipment fitted in the highly sophisticated ships and aircraft now coming into service.

"In the academic field it has been a successful term.

"External as well as internal examinations are undertaken by the Apprentices, and this term 46 third year apprentices sat for Certificate Entrance Examination which is conducted by the N.S.W. Department of Technical Education.

"It is very pleasing that although each candidate sat for four subjects, there were only ten single subject failures.

"Sixth Term sit for the Naval Higher Educational Test which confers the necessary educational qualification for promotion to officer rank, and it is pleasing to say that in the examination in September, 71 of 93 papers presented by NIRIMBA candidates were successful. This is a very high percentage.

"In a very full programme,

little time has been available for extra study, but in spite of this difficulty, nine Apprentices are at present undertaking Matriculation studies.

### SPORTING ACTIVITIES

"The highlight of the sporting activities was the Apprentices' Inter-Service Sports, when NIRIMBA acted as hosts to the Army and R.A.A.F. Apprentices.

"It was a successful and enjoyable meeting, which was won, overall, by the R.A.A.F.

"Teams took part in outside competitions in Rugby, Hockey, Athletics and Basketball without any outstanding successes, but certainly also without disgrace.

"The Divisional competition included also Australian Rules football, Soccer, Cricket, Softball, Volleyball, Deck Hockey, Tennis and Cross-country Running.

"Other activities included Archery, Squash, Pistol and Rifle 22 and .303 Shooting, Sailing, and Tenpin Bowling.

"That would appear to be a pretty formidable list of activities.

"However, as our numbers increase it will become increasingly difficult to keep all the Apprentices fully occupied.

"It is particularly hard during the summer, and the lack of a swimming pool is keenly felt.

"The Officer Commanding R.A.A.F. Station, Richmond, has very kindly offered NIRIMBA the use of their excellent pool, and for this we are extremely grateful.

"We do not wish to turn out Apprentices all brain and brawn, and the social graces are not entirely disregarded.

"Dancing classes and dances have been held regularly, and our Theatrical Groups have entertained us on occasions, and lectures have been given by the Father and Son Movement."

THE NAVY

## RECORD ENTRY OF NAVY APPRENTICES



Chief M.E. R. J. Clark explains the NIRIMBA lifebuoy to a group of new apprentices from Adelaide. The youths:— Neale, Jansen, Gherardin, Grochowski, McAlister, Erskine, Garrett, Merryweather, Amos, Parsons, Holt and Mills, were among the record 82 apprentices who entered the R.A.N.A.T.E. at Quaker's Hill, Sydney, on January 13.

A record number of 80 young men from all parts of Australia were selected to begin training as Naval apprentices in January.

The successful candidates would start their five-year apprenticeships at the Royal Australian Navy's Apprentice Training Establishment at Quaker's Hill, near Sydney, on 13th January.

FEBRUARY, 1963

The 80 apprentices were selected from 643 applicants, and it is the biggest single entry into the Apprentices' Establishment since it was set up six years ago.

It was announced last year that the apprentice training programme would be greatly increased to produce more skilled tradesmen to meet the challenge of increasingly complex ships and weapons.

The apprentices, aged 15-17, train as shipwrights and as electrical, engineroom and ordnance artificers. After five years' training ashore and at sea they become Petty Officers.

The new apprentices come from South Australia (21), Queensland (20) New South Wales (19), Victoria (9), Western Australia (8), and Tasmania (3).



# COMMODORE MORROW

WAR TIME HERO DEAD

Commodore J. C. Morrow, C.B.E., D.S.O., D.S.C., R.A.N., retired, died at his home in Vaucluse, Sydney, on January 8.

Commodore Morrow retired in 1960 after 41 years' service in the R.A.N.

Commodore Morrow, who was born in Melbourne on February 6, 1905, entered the Royal Australian Naval College in 1919.

He was one of Australia's best known destroyer Captains.

At the commencement of World War II, he commanded the first H.M.A.S. VOYAGER, when, as part of the historic "Scrap Iron Flotilla," she took part in most of the Mediterranean campaign, including the Tobruk Run in 1940 and 1941.

He was awarded the D.S.O. in September, 1940, for "courageous

enterprise and devotion to duty," and was mentioned in Despatches for inshore co-operation with the Army in Cyrenaica.

In November, 1941, he was given command of the first Australian-built tribal destroyer, ARUNTA, and in this ship took part in many of the Pacific campaigns.

He was awarded the D.S.C. in August, 1942, for sinking a Japanese submarine.

In October, 1943, he was appointed Commander of Escort Forces, based on Sydney, and in January, 1944, Commander Escort Forces at Milne Bay.

He became Executive Officer

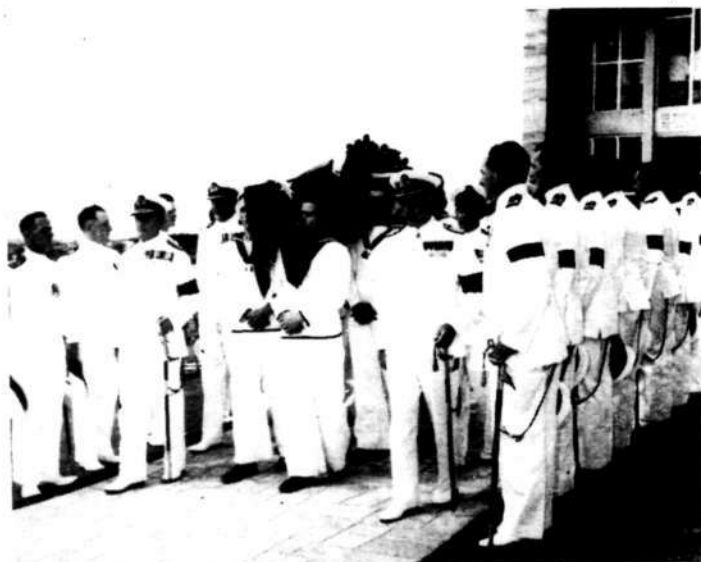
H.M.A.S. SHROPSHIRE in May, 1945, and was promoted to Captain in 1947.

After the war he served as Chief Staff Officer to the Flag Officer in Charge, East Australia Area, was Naval Attache, Washington, and later Commanding Officer H.M.A.S. AUSTRALIA.

As Commodore he was in command of H.M.A.S. CERBERUS, was appointed to the Royal Australian Naval Board, and was Commodore-in-Charge Western Australia.

He is survived by Mrs. Morrow and two sons.

The funeral took place at the Northern Suburbs Crematorium.



Ship's Company members of the VOYAGER carry the coffin of Commodore Morrow from H.M.A.S. WATSON's Chapel. Rear Admiral G. G. O. Gatacre (left) and Rear Admiral K. M. Urquhart (right) lead the pall bearers.

# THE ROYAL NAVY — TODAY AND TOMORROW

By Rear-Admiral A. N. NICHOLL, C.B., C.B.E., D.S.O.

*A summary of an address given at the Annual General Meeting of The Navy League in England, and printed in "The Navy."*

Most people do not need to be convinced of the continued need for Britain to maintain a strong Navy. Britain's Defence policy, like the defence policy of the Atlantic Alliance, is based on the prevention of war by the maintenance of an effective deterrent. It is accepted that nuclear war would amount to mutual suicide, but there is increasing danger that world war and eventually nuclear war might result from some minor incident getting out of control. So, as a vital part of the deterrent to war, the Western Powers maintain highly mobile forces in immediate readiness to move to any danger spot. Sea-power, which is exercised by warships and aircraft, is the key to the effectiveness of that policy. The sea and air above it provide the only highways which are likely to remain free from political hindrances, and the importance of the Navy's warships and aircraft is likely to increase with the years.

As regards the strength of the Navy, no one would deny that a larger Fleet would give us greater security. But of course, it depends on the amount of money available, and the Government of the day must balance the country's books. At the same time the hitting power — the offensive power — of to-day's smaller Fleet — and that's the yardstick by which its effectiveness should be judged — is, in fact, many times greater than that of the much larger Fleets

of the past. In manpower, the Navy to-day is almost exactly as it was in the middle 1930s, around 100,000. As regards the size of our ships, our carriers are bigger than we've ever had before, and, while there has been a shift from large ships to smaller ones, our present so called small ships are not quite so small as their names imply to many people.

The advent of nuclear power for the propulsion of ships has been hailed as the beginning of a development as revolutionary as the change from sail to steam a century ago. The first application of nuclear power for propulsion was to submarines; and many people predicted that, so far as navies were concerned, the first step had been taken towards all-nuclear fleets.

## SECOND THOUGHTS

To-day, I would say, these predictions hold good for submarines, but there have been some second thoughts as regards surface vessels. Nuclear power has resulted in an entirely new type of submarine, a vessel able to remain almost indefinitely under water and capable of sustained high speed. For surface ships, on the other hand, the advantages are not so great. The main ones are the ability to stay at sea at continuous high speeds, to dispense with oil tankers and the need to defend them. But the ability of the Fleet to remain at sea for months on end without re-fuelling would not

mean goodbye to the Fleet train; you'd still need support ships to replenish supplies of ammunition, food, and, of special importance, aviation fuel. Moreover, against the advantages of nuclear propulsion has to be set its very high cost. So, in the foreseeable future, while submarine fleets will be preponderantly nuclear-powered, I think that there will only be a partial turn-over to nuclear power for surface warships. And, for the next twenty years or so there will still be quite a large number of conventional submarines at sea.

The weapons a navy requires depend upon what it has to do. The role of the Royal Navy is first what might be called its Cold War task of being ready to go quickly to any danger spot, coupled with the task of showing the flag round the world. Secondly, the Navy must be able to go into action with any type of enemy, anywhere; and finally to play its part in the event of world war.

## COLD WAR ROLE

For the Cold World War role the Navy must be able to carry forces and their heavy equipment, and if necessary support them on the battlefield. This calls for Commando ships and landing ships to carry marines or army troops with their tanks, artillery and anti-tank weapons. It requires support by strike aircraft or gun fire, or both. In addition, there is air defence



for the ships and for the men ashore. This purely defensive task is, in a way, an embarrassment. It requires a lot of most expensive equipment for A/A defence, and quite a lot of manpower; so we don't want more A/A systems in our ships than are absolutely necessary. We have to consider the capabilities of the enemies we are likely to meet all over the world. Few of them, for example, have aircraft capable of attacking our ships from long ranges, that is, firing missiles at our ships from, say, outside 200 miles. So our present policy is to leave such attackers to our fighter aircraft and not attempt to fight them with missiles from the ships. The happy hunting ground is in the medium ranges out to 200 miles from which a number of possible enemies might attack and an area in which our Sea-Slug guided missile is highly effective. Enemies which could

only attack at close range would have to pass through the medium range area, but our general policy is that anything that has to come in close should be shot down by close-range weapons. The advantage of close-range weapons such as the Sea Cat guided missile is that they are small, relatively cheap, and can be put into all sorts of ships. The move all the time is away from the enormously expensive and complicated weapons of long-range fighting and towards smaller and less complicated systems. The Sea-Slug needs a 5000-ton ship to carry it; its successor which is coming along well will be a lot smaller and cheaper and will go into a smaller ship.

The mounting costs of defence certainly face this country with a big problem. It has been called a problem of continuous innovation. Science is advancing so rapidly that as soon as you

get a new weapon into production you have to start working on its successor, which is certain to be even more expensive. How are we to maintain up-to-date defences and at the same time prevent our defence budget from rising to a figure far higher than the country can afford? There are three main pillars of our defence — (1) our contribution to the deterrent, (2) our contribution to the defence of Europe, and (3) our world-wide strategic responsibilities. Quite a lot of people think that the only solution to the problem of mounting costs is to get rid of one of these pillars; and by that they mean giving up our contribution to the nuclear deterrent of the West. I don't believe that this is so. I believe that with main adjustments between the Services and between the main pillars of defence we can continue to provide effective defence with-

out having to withdraw one of the basic pillars. Britain can't afford to be lavish over defence. Quite the reverse. The broad rule is no duplication and the principle of no duplication is behind the development of a common aircraft for the Fleet Air Arm and the Royal Air Force. But it goes further than that. There is undoubtedly duplication between the Navy and the Air Force in more than one sphere. This is going to be a matter for decisions on the highest level, decisions which may profoundly affect the future of the Navy. I don't for a moment suggest that this means a battle for survival between the Navy and the Air Force. Whatever decisions are made there are tasks essential to the security of this country and the Commonwealth which could not be discharged by any other service. That is a direct quote you probably recognise from the excellent letter from our chairman which was published in *The Times*.

#### DEFENCE OF EUROPE

As regards the first pillar, the deterrent, I will have more to say in a moment. Pillar number two, our defence of Europe, is widely regarded as a mainly Army/Air commitment, though this leaves out of account the vital need to maintain the security of our supply lines particularly across the North Atlantic. The whole of the NATO defence plans are based on the assumption that we continue to control the sea. It is pillar number three, our world-wide strategic position, to which the Navy has so vital a contribution to make. To maintain our position overseas we must be able to intervene if necessary with balanced forces. The crux of the business — and there's no dispute on this between the Services — is the air-

craft carrier. A military intervention must be sea-borne; that means a large naval force at sea, landing-ships, transports, logistic and replenishment ships. The Carrier Task Force provides their main protection. Carriers are the best and possibly the only way of providing close support for an opposed landing. As they are needed anyway for the protection of shipping, can they not also provide all the tactical aircraft needed for our world-wide strategy?

#### FLEET'S BACKBONE

Our present aircraft carriers, the backbone of the Fleet, are fitted with the most modern equipment and devices, and they are second-to-none in operational efficiency. None of them, however, are new ships, and, assuming there is no change of naval policy, they'll have to be replaced, starting about 1970. A great deal of preliminary work on design has already been done by the Admiralty, but as it takes eight or ten years to produce a new type of so complicated a ship, it won't be long before someone will have to decide that the first new carrier is to be laid down. It will be the replacement for the *Victorious*.

A ship like a carrier lasts anything up to 25 years, and the new carriers must be designed to operate the aircraft that may be expected to become operational in the 1990s. The carriers, Britain's mobile airfields, must be able to operate both Royal Air Force and Fleet Air Arm aircraft. I believe our first new carrier will probably have a very similar appearance to our present ones. But it will be very different inside. It will incorporate the great advances which have been made in recent years in metals, machinery, electronics and living accommodation.

What about vertical take-off

aircraft? Anyone who went to this year's Farnborough must have been impressed by the vertical take-off and landing aircraft, the Hawker P-1127. There's no doubt it stole the show. Its jet engines can be directed downwards or backwards, and the things it can do seem almost incredible. It is in fact a supersonic Strike fighter. The military significance of an aircraft which has a completely flexible range of speed from hovering to supersonic, is obvious. But I also felt that this is the start of a new era in flying.

#### CARRIER PROBLEMS

A lot of people have thought that with the advent of vertical take-off aircraft, there will be no need for catapults, arresters wires and long flight-decks; and that the size of future carriers could be very much smaller than the present ones. But the main thing in determining the size of a carrier is the size of the hangar. To carry enough aircraft for the many functions of the modern aircraft carrier you need a big ship; and in a big ship a long flight-deck, catapults and arresters wires create no problem. Vertical take-off aircraft have the drawback of greater weight than the ordinary aircraft of the same type. You can't get the "vertical" qualities for nothing. This means that though the performance of the vertical take-off is the same as the normal one, it won't be able to carry either so much fuel or such a weight of bombs. The difference is quite considerable, something like 30 per cent. On the other hand, vertical take-off would have distinct advantages; landing and taking-off would be much easier, and, for example, Royal Air Force pilots who have not been trained in deck landing would be able to land on board without difficulty.

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As for size, the Navy is thinking of a ship of about 50,000 tons. The number of aircraft you can carry on board increases very sharply once a certain size of ship is passed. A 50,000-ton ship can embark almost twice as many aircraft as one of 40,000 tons. A carrier of 50,000 tons will, of course, be very expensive; but so is the modern aircraft. In our defence planning, increasing emphasis is being put on a mobile sea/air strategy. It may well be that the most economical way of exercising this strategy is to deploy a relatively small number of aircraft in our mobile airfields — our carriers — in which they can be carried to whatever part of the world they're needed.

I said I would have something more to say about the deterrent. Looking at the defence strategy of the West as a whole, sea-power is vital to the continued effectiveness of the deterrent to

war. The positions of airfields, and missile sites on land in the free world must be known to the Russians, and they might be knocked out, but the sea gives mobility and concealment to carriers, and, in particular, to Polaris-firing submarines. The Royal Navy is not at present developing Polaris submarines, and Britain's contribution to the deterrent is the V-Bomber force, which will be effective until the 1970s. Our authorities haven't yet made up their minds what the successor to the V-Bomber Force will be. It might be Polaris submarines. The decision will obviously be a big one, but the Navy could, if required, develop a nuclear-powered submarine capable of firing both Polaris missiles and operating in the attack role.

It can be argued that in some fields it is duplication by the Navy that should be eliminated.

What about the Royal Marines? Aren't they duplicating something which can be done by the Army? I admit that's a perfectly good point. But it leads on to ideas of the integration of our fighting forces to a much greater extent than there is at present. The answer might well be — more Marines. After all, there's a perfectly good precedent in the United States Marines.

#### SUMMARY

To sum it all up. The Navy of to-day, though not as large as anyone in the Navy League would like, is able to play an effective part in Western defence and in maintaining Britain's world-wide strategic position. As for the future, the Navy is ready to develop the ships and weapons that will be needed to meet increased reliance on mobile sea/air strategy. The all-important decision for the Navy is on the building of a new generation of aircraft carriers. The problem of increasing costs for defence is a very acute one, and we certainly can't afford to have any duplication of effort. We in the Navy League cannot do a better service for our country than constantly to remind our fellow-countrymen of the vital need to maintain and so far as possible to increase the strength of the Navy, to explain to them what it does and can do, and, if the decisions go that way, its capacity for even greater responsibilities in the future.

#### COVER

The cover depicts H.M.A.S. VOYAGER proceeding to sea with the ashes of the late Commodore J. C. Morrow.

## NAVY PROMOTIONS

The Royal Australian Navy's half-yearly promotion list includes four new Captains and five new Commanders.

Among the new Captains are the Commanding Officer of the Royal Australian Naval College, Acting Captain N. H. S. White, and the Captain of the Daring-class destroyer, H.M.A.S. VOYAGER, Commander D. H. Stevens.

Captain White was Commander at Flinders Naval Depot in Victoria before becoming Captain at the Naval College towards the end of last year, while Captain Stevens has just returned from two years' exchange duty with the Royal Navy.

The other new Captains are: —  
• Acting Captain R. G. Craft, the Director-General of the Supply and Secretariat Branch at Navy Office in Canberra; and  
• Surgeon Commander J. A. B. Cotsett, of Sydney, who later became Medical Officer-in-Charge at Flinders Naval Depot in Victoria.

The five new Commanders

are:—

• Lieutenant - Commander J. Lancaster, of Sydney, at present on loan to the Royal Malayan Navy;

• Acting Commander H. K. Duncan, of Melbourne, who is the Training Commander at Flinders Naval Depot;

• Acting Commander B. H. Worrall, of Frankston, Victoria, serving at Flinders Naval Depot;

• Instructor Lieutenant-Commander K. R. Kinnorley, of Frankston, Victoria, the Course Planning Co-ordinator at Flinders Naval Depot; and

• Lieutenant-Commander A. H. Brown, of Sydney, serving in H.M.A.S. MELBOURNE.

An officer in the Women's Royal Australian Naval Service, and a Royal Australian Naval Reserve officer, are also included in the promotion list.

Acting Second Officer M. T. Markham, of Sydney, who is Unit Officer of Wrans at H.M.A.S. PENGUIN, has been promoted Second Officer.

Lieutenant R. D. Davies, R.A.N.R., of Mt. Pleasant, Western Australia, becomes a Lieutenant-Commander.

## U.S. NAVY PILOT FOR R.A.N.

A United States Navy pilot with wide experience in anti-submarine warfare has arrived in Australia for a period of exchange duty with the Royal Australian Navy.

Lieutenant Charles B. Smiley, U.S.N., began duty at the Naval Air Station at Nowra in December.

Lieutenant Smiley has flown both fixed-wing aircraft and helicopters in the anti-submarine role, and is qualified as a special weapons delivery pilot.

He will be appointed to the R.A.N.'s new operational training squadron for Westland Wessex anti-submarine helicopters. His experience would be invaluable in helping teach R.A.N. air crews the techniques of hunting submarines from helicopters.

Lieutenant Smiley's most recent assignment has been flying anti-submarine helicopters from the American carrier, U.S.S. BENNINGTON. His squadron worked closely with the R.A.N. earlier this year when BENNINGTON joined the Australian flagship, H.M.A.S. MELBOURNE, during the SEATO exercise, "Sea Devil".

Lieutenant Smiley will be the second United States Naval officer to serve on exchange duty with the R.A.N. The other, Lieutenant-Commander R. E. Pettit, U.S.N., is a submariner, and is on the staff of the Australian Joint Anti-Submarine School at Nowra.

Two Australian Naval officers are serving with the United States Navy.

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## SEA CADETS EFFICIENCY AWARD

The result of the annual efficiency competition for Australia's 38 Sea Cadet units was announced by the Minister for the Navy, Senator Gorton, recently.

The Navy League of Australia Annual Efficiency Trophy goes to Western Australia for the first time. It has been won by Training Ship BEDFORD, which is a "frigate" class cadet unit at Kwinana Beach.

The unit has four officers, two instructors and 63 cadets, and was selected after an Australia-wide inspection of Sea Cadets by the R.A.N.'s Director of Naval Reserves.

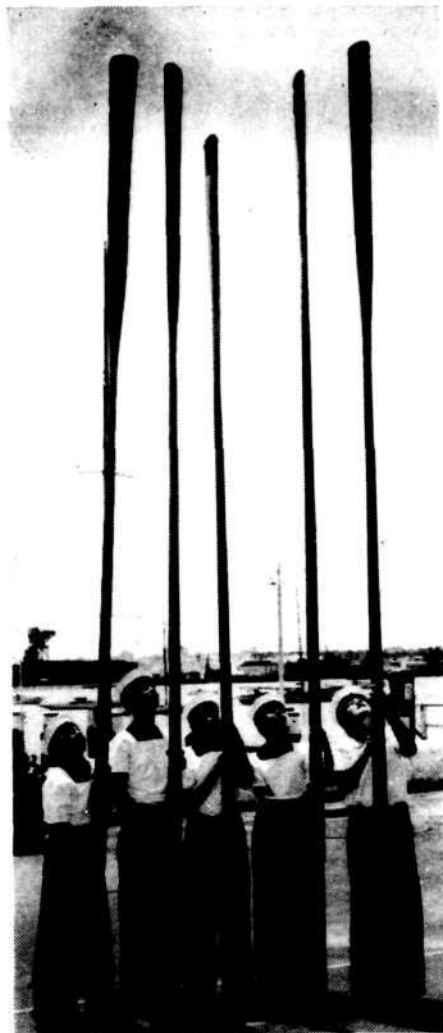
Training Ship BEDFORD was first formed in 1957, and has been judged the best West Australian unit for the past three years.

The National Efficiency Trophy has been available for competition since 1959, the previous winners being Training Ship BARWON (Geelong, Victoria), Training Ship MAGNUS (Church of England Grammar School, Brisbane) and Training Ship GAYUNDAH (Brisbane).

The Naval Board in Canberra has signalled its congratulations to "all hands" of Training Ship BEDFORD.

The Sea Cadet Corps, which is run jointly by the Navy League and the Royal Australian Navy, is designed to teach basic seamanship and to encourage character development and community spirit among boys aged between 13 and 19.

New South Wales has eight Sea Cadet units, Victoria eight, Queensland seven, Tasmania six, Western Australia five, South Australia two, Australian Capital Territory one, and Northern Territory one.



A group of Sea Cadets recently underwent training at H.M.A.S. WATSON. This picture shows Cadets R. Hurst, N. Taylor, R. Marfleet, M. Pollock and D. Thorsell (right) lining up their oars after training in a whaler at H.M.A.S. RUSHCUTTER.

## NAVY TO PROVIDE ROYAL COMMUNICATIONS

The Royal Australian Navy will provide the facilities to keep Her Majesty the Queen in regular communication with London during the forthcoming Royal Visit to Australia.

The Navy, in co-operation with the P.M.G., is making comprehensive arrangements to ensure constant communications between Her Majesty and Buckingham Palace. These arrangements will ensure that important matters of State could be transmitted to the Queen within minutes of despatch from Whitehall. The signals would be delivered, whether Her Majesty was ashore, in the Royal yacht, or in the air.

The Navy's shore radio station at Canberra (H.M.A.S.

HARMAN) will be the main Australian terminal for all Royal communications; it will re-transmit the signal traffic according to the Queen's programme.

If the Royal visitors are at sea, the information will be transmitted to H.M.Y. BRIT-ANNIA. Urgent signals received while Her Majesty is in the air will be passed to the aircraft through the Department of Civil Aviation.

To provide Royal communications ashore, the Navy will establish temporary radio offices as close as possible to the Royal Secretariat. These radio offices will be set up in Canberra during Her Majesty's two separate visits to the national capital, and in Alice Springs during the Royal visit to Central Australia.

The Navy communication centres will be equipped with teletype machines and staffed by senior Naval ratings and Wrens.

## R.A.N. TO TRAIN PAKISTANI OFFICERS

Officers of the Pakistan Navy are visiting Australia for training in the communications field with the Royal Australian Navy.

The visit has been arranged under the SEATO training programme.

The four Naval officers will spend seven weeks in Australia, and will study communications at Flinders Naval Depot in Victoria, at Naval establishments in the Sydney area, and at the Navy's main shore radio station in Canberra.

Australia is providing telecommunications equipment for installation at Pakistan Naval establishments.

The R.A.N. was happy to provide training which would contribute to SEATO's basic concept of collective defence.

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Please note that all annual subscriptions now commence in January. New subscribers after January should send only 1/11 for each month remaining up to and including December. Otherwise back copies from January will be posted.



## NEW ZEALAND GIFT TO NAVAL COLLEGE

The Royal New Zealand Navy has presented the Royal Australian Naval College with a specially-designed catamaran as a goodwill gesture.

The catamaran is a welcome and useful gift. It is a New Zealand-designed "Kitty Cat", and was built by apprentices at the Devonport Naval Dockyard at Auckland.

This type of craft provides a safe way of teaching sailing under rough conditions.

The College already has one catamaran based on the New Zealand design, but the New Zealand Naval Board decided that it would be fitting to present the cadet midshipmen with a truly New Zealand craft. The New Zealand Navy is making the gift as a token of appreciation for the training of their cadet midshipmen at the Royal Australian Naval College at Jervis Bay.

Right:—  
Midshipmen R. N. HILL, Perth, and B. F. WOOD, Sydney, had the privilege of trying out the "Kitty Cat" shortly after it was presented to the College.



# THE MERCHANT NAVY

By  
SIR NICHOLAS CAYZER,  
Bart.

\* Extracts from an address given at the Navy League Trafalgar Day Luncheon on Wednesday, October 17.

It is always intriguing to ponder on what events were turning points in history, events that set off a chain reaction which altered dramatically what had gone before. I think it is possible to consider the Battle of Trafalgar in this light, for not only was it a great Naval victory, but from then on history in this country began to change, growing in momentum as it went along.

At about the time of the Battle of Trafalgar the population of these Islands was approximately 12 million. To-day it is about 52 million, and compared to the rate of increase prior to Trafalgar, it is an amazing change. Until about the beginning of the 19th century we were largely an agricultural country able to sustain our population, but as the century went on all this was to alter, until to-day we find that we are only able to grow half the food we need, and have to import most of the raw materials that form the basis of our exports.

It was during this period that the Merchant Navy, as we know it to-day, was born. Although a maritime nation, we had not, until then, developed our ships or trade to anything approaching the extent to that which we did in the 19th century. It is interesting to note that until the advent of steam we had made very little progress in ship con-

struction. We did not seem to have studied such things as hull form and sail propulsion with marked success.

But with the coming of steam a great change took place. Of course, the steam engine had already had a profound effect in industry, and with cheap coal the time was ripe for expansion. Great industrial progress was made, and for a time we were virtually the workshop of the world. This meant that ships were needed, with regular and reliable services, playing a new part. So far as steam is concerned in relation to ship propulsion, the United States nearly pipped us at the post. The first steamship to cross the Atlantic was the *Savannah*. It is probable that the engine of this vessel was British, but for some reason or another — perhaps the cost of running — on her return to the United States from her maiden voyage her engine was taken out, and she reverted to sail.

British shipowners did not miss the significance of the steam ship, but in its early days they found it a most uneconomical vessel. An event took place, however, which helped them on their way. During Lord Melbourne's Ministry of 1835-41 it was decided to put out to public tender the carriage of mails. Hitherto they had been carried by Government-owned ships. A number of enterprising shipowners took advantage of this, and were successful in their tenders. The mail money received tipped the scale and made

just the difference between profit and loss. The steam engine, plus mail contracts, and the freeing of trade with the repeal of the Corn Laws in 1846, were the ingredients of progress, and gradually the steam engine became more efficient and economic.

Between the second quarter and the end of the century most of the large shipping companies that are household names to-day were born. By the turn of the century we were carrying no less than 53 per cent of world trade. In the last quarter of the century refrigerated vessels were introduced which have greatly altered the standard of living of those who inhabit these Islands. Also about that time the first oil tanker made its appearance. The beginning of the present century saw the commencement of the transport of fruit and other perishable products in refrigerated vessels.

As the Victorian era drew to its close Great Britain could indeed feel proud of herself. She was prosperous and the centre of a great Empire that was rapidly developing. All looked set fair. But storm clouds were gathering.

I do not propose to speak to-day of the gallant and vital part that the Merchant Navy played in two world wars or the partnership that grew up between the Royal and Merchant Navies. Once more, sea-power, as in the past, was our sure shield and in the fullness of time the springboard to victory.



These two wars had a profound effect on the fortunes of British shipping. We had been far the largest carriers of trade, so that when the first world war started the United States and other neutrals found themselves short of shipping, and decided never to be caught out again. So new Merchant fleets were born. During the second world war these fleets grew. At the conclusion of the late war other new factors entered the field. During the war the world had been deprived of goods and services. This vacuum was bound to be filled, and great opportunities opened up. Ships were in short supply. British shipowners were busy replacing the large number of ships they had lost for their traditional trades. Their funds were not unlimited, and others were not slow to enter the field.

Thus we saw the creation of new national fleets, tanker fleets, and the advent of the bulk carrier. Shipyards were being rebuilt and expanding all over the world, and when the pace of building tended to slacken, Korea and the Suez crises served to emphasise the need for ships, particularly tankers. Another new factor of great significance was the rise of nationalism. Nations throughout the world felt that national prestige demanded a Merchant Navy. As our dependencies achieved their independence they were not slow to follow the fashion set. A sinister aspect of these developments was the advent of flag discrimination. We had grown to believe in the freedom of the seas and in free, fair and unfettered competition. All this was changing. Flags of convenience was another development. Nationalism led to national fleets or fleets subsidised by nations. Governments became interested in shipping for pres-

time and strategic reasons, and, so they said, for the conservation of foreign exchange. All this has led to there being far more ships in the world than cargo to carry, and even with five years of shipping slump behind us people are still building ships — in many cases without clearly knowing how to employ them.

So from 53 per cent of the carriage of world trade at the turn of the century we have sunk to less than 18 per cent. Admittedly the cake has grown, and we still have the largest dry cargo fleet afloat, but we can hardly view this situation with complacency.

Samuel Johnson said: "Depend upon it, Sir, when a man knows that he is to be hanged in a fortnight it concentrates his mind wonderfully." If we are to survive, let alone increase our standard of living, we shall have to concentrate our minds wonderfully.

British shipping, unlike the Air Corporations, has, over the years, made a substantial contribution to the national income. We shall strive to continue to do so. We cannot help, however, being perturbed that one of our main competitors, especially where passengers are concerned, should be allowed to pile up such heavy losses. The Chairman of B.O.A.C. says that he thinks the financial structure of the Corporation and the way it is expected to operate is crazy. These are strong words.

Shipping depends on trade, as all our livelihoods depend on our export trade. Our two immediate aims seem to me to be peace and trade; and they have this in common, that our success in trying to achieve these aims will depend on our efforts and on our ability to co-operate with other nations and play a leading part in counsel with them. Great industrial changes must

come about. For shipping, efficient docks, railways and roads are essential. It is obvious that change is painful, but we must put first things first; that is, we must get our industrial shape right, and the question of hardship in change must then be faced. To put things the other way round must mean that we shall fail and there will be hardship all round. New industries are evolving, some old industries are on the way out. A realistic and flexible approach to these changes is necessary for success.

In shipping we seek the closest co-operation with industry. We look to the shipbuilder to evolve with us the most suitable and economic ships for our trades. Ships are very expensive items, and we must give the closest attention to such matters as cargo handling and automation. The development of new and better forms of propulsion are of vital interest. The technique of management must be studied. By these means we seek to give the right kind of service to those who use our ships, so that they have their cargo economically and expeditiously handled.

British shipping has the backing of a large export and import trade, and we shall, as far as one can see ahead, have need for a large Merchant fleet. Nevertheless, as I have shown, circumstances have radically changed since the turn of the century, and we must be ready to discuss our mutual difficulties with the shipowners of other nations.

The Royal Navy will, I am sure, continue to play a very important part in keeping our sea lanes open and in the protection of our Merchant fleet as occasion requires. Some may say that the air has taken the place of the sea, and that the command of the air is the way to victory in war to-day. In the

initial stages of a war there may be force in this argument, particularly in a nuclear war, but history has taught us many times not to belittle the value and importance of our Royal and Merchant Navies. Certainly in the cold war the Royal Navy and the Merchant Navy must continue to play a vital part.

Finally, there is no denying that we live in most bewildering and exciting times. We are subject to every kind of intrusion in our individual thought. It is vital that we think for ourselves and do not get confused.

I have suggested two aims —

## PAPUAN SAILORS TO MAN R.A.N. VESSEL

A ship of the Royal Australian Navy is to be manned almost entirely by members of the R.A.N.'s Papua-New Guinea Division.

Papuan sailors will comprise two-thirds of the crew for the general-purpose vessel, H.M.A.S. BANKS.

A total of nine Papuans will serve in the ship, including one petty officer, four able seamen, and four engineering mechanics. Three Australian ratings would be required, an engine-room artificer, a radio electrical mechanic and a communication operator, because members of the Papua-New Guinea Division were not trained in these specialisations.

The only other members of the ship's company of 14 will be two Australian officers.

This is the first time that members of the Division had manned a commissioned ship of the R.A.N. BANKS would be based at Manus Island, and will be used for general duties and for training members of the Papua-New Guinea Division.

peace and trade. The Gospel tells us that man does not live by bread alone, but if we can achieve these aims then the rest is possible and can be added. Our hopes of achieving them depend on our ability to work together, to think clearly, and to put first things first. I recognise the difficulty and urgency of our task, and our future must rest on enough people in Government, Industry and the Unions, and behind them the thinking public, finding unity of purpose. The aim is clear and must surely be our heart's desire to keep Britain, with its long and proud history, great.

## DELIVERY OF R.A.N. SURVEY HELICOPTERS

Two Westland "Scout" helicopters that will provide greater mobility for Royal Australian Navy hydrographic surveyors, were test flown in Britain in December.

The two helicopters were expected to be handed over to the R.A.N. and to be shipped to Australia in the New Year.

The "Scouts" are turbine-powered helicopters, being obtained specially for use in hydrographic surveying. They will operate from the Navy's new survey ship, H.M.A.S. MORESBY, due for completion at the Newcastle State Dockyard this year.

The "Scout" is particularly suitable for survey work. It is a fast machine, with a speed exceeding 100 miles an hour, and a rapid rate of climb. The helicopter provides surveying parties with speedy access to vantage points, reducing time-consuming expeditions through difficult terrain. It can also be used for reconnaissance and aerial photography from the survey ship.

## A MODERN SHIPYARD

(Continued from Page 24)

Between 1954 and 1957 an order for 20 special trawlers for the U.S.S.R. was completed. The total value of this order was in excess of £7,000,000. In addition to this, vessels built and exported to Australia already exceed a value of £1,000,000.

More recent orders, in addition to the two minesweeper conversions for the Royal Australian Navy include one 338ft. refrigerated fruit carrier, five cargo-passenger vessels up to 302ft., one 220ft. buoy and survey vessel, two Pilot ships for Trinity House, three landing craft for the British Air Ministry, a fisheries research vessel for Nigeria, a general purpose Missionary vessel for the South Pacific, two small passenger vessels for Bermuda, and ten trawlers.

Amongst the vessels under construction at the moment are two 1600 h.p. diesel electric tugs for the Whangarei Harbour Board, New Zealand. These tugs will be used for the handling and manoeuvring of oil tankers up to 87,000 tons, at Marsden Point, and for general harbour and fire-fighting duties at Whangarei Harbour.

Various pilot cutters, luxury yachts and other small craft have also been completed in this period.

The aggregate value of the above orders amounts to several million pounds sterling.

Ships have been exported to Iceland, Argentina, Nigeria, Belgian Congo, Aden, Malta, Gold Coast, India, Pakistan, Bermuda, Maldiv Islands and other countries.

Brooke Marine Limited are builders of all types of vessels up to a maximum overall length of 420 feet, especially special purpose craft.



## A MODERN SHIPYARD BROOKE MARINE LTD., ENGLAND



The extensive conversion works recently completed on H.M.A.S. HAWK and TEAL, including the fitting of stabilizers and 'Deltic' diesel engines were carried out by one of the most modern shipyards in the world, Brooke Marine Limited of Lowestoft, England.

Brooke Marine has very close ties with Australia and New Zealand, being an Associated Company of Dowsett Engineering (Australia) Pty. Ltd. The Hon. Sir Edward Warren, K.B.E., C.M.G., M.S.M., M.L.C., has recently joined the Board of this Company, of which Mr. Basil Merry is Managing Director. The Resident Manager of Dowsett Engineering (Australia) Pty. Ltd., Northern Territory, is Captain S. H. K. Spurgeon, D.S.O., O.B.E., R.A.N. (Ret'd), who was lately Senior Naval Officer at Darwin.

The company was founded in 1874, and in 1900 began constructing 3-cylinder and 6-cylinder engines for marine purposes, having previously been engaged in manufacturing the "Brooke"

car, the first vehicle in the world with a 6-cylinder engine. In 1906, however, car production was abandoned, the Company having decided to develop ship and boat building.

For many years Brooke racing craft achieved numerous successes both at home and abroad, including the World's 1½-litre speed record. Outstanding boats were the first British Hydroplane, the "Surprise," built in 1908, and the "Crusader," produced in 1912. The "Crusader" was a single step Hydroplane fitted with a 300 h.p. V type Brooke motor, which gave her a speed of 40 knots. In August, 1914, she easily won the eliminating trials for the Harmsworth Trophy before the First World War stopped further racing. An old letter head of J. W. Brooke & Co. Ltd. bears the caption: "Awards: 8 Gold and Silver Medals, 140 Cups."

During the First World War, boat building activity was expanded in order to employ the Yard to its full capacity on Admiralty requirements for motor

boats, steel launches and mine-sweepers, and in 1918 work was begun on a fleet of 18 steel steam drifters, the steam engines being supplied by outside manufacturers. Three of these were lost in action in the Second World War but at least one, the "Blare," renamed the "Domayao" was fishing under the Spanish flag in 1962.

At the beginning of the Second World War, Brooke Marine Limited was acquired by Mr. Harry L. Dowsett and the North Yard was extended to meet wartime requirements.

The Company launched and commissioned one craft for the Royal Navy and Royal Air Force for every week of hostilities and maintained Coastal Forces from the Humber to Harwich, carrying out over 2,000 major repairs, many due to enemy action. Brooke built craft saw action in every theatre of operations and took part in the raids on Dieppe and Saint Nazaire. In addition to this some 1,500 tugs and barges were prefabricated and constructed for the war against Japan in co-operation with the other companies of the Dowsett Group.

After the war, Brooke Marine Limited continued with Admiralty work, this including the building of nine inshore mine-sweepers. In 1949 the "Jorundur," the largest trawler to be built in East Anglia to that date, was launched from the south bank.

Mr. Harry L. Dowsett drew up the first tentative scheme for the South Shipyard in 1952 and construction started in January, 1954. Shipbuilding and construction work advanced together and by June, 1955, the South Yard was in full production.

THE NAVY

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

All British subjects who signify approval to the objects of the League are eligible. MAY WE ASK YOU TO JOIN and swell our members so that the Navy League in Australia may be widely known and exercise an important influence in the life of the Australian Nation?

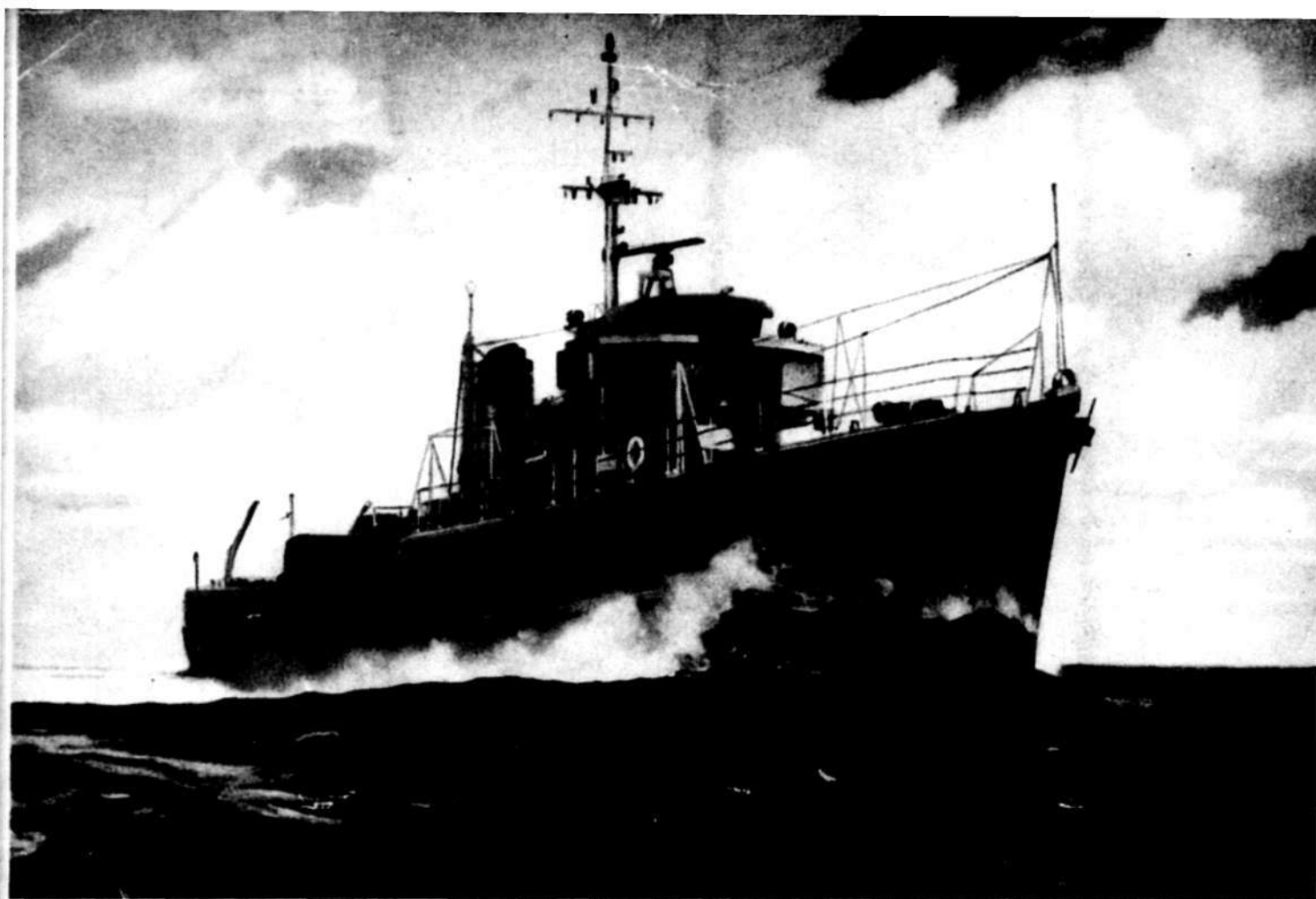
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MARCH, 1963

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# THE Navy



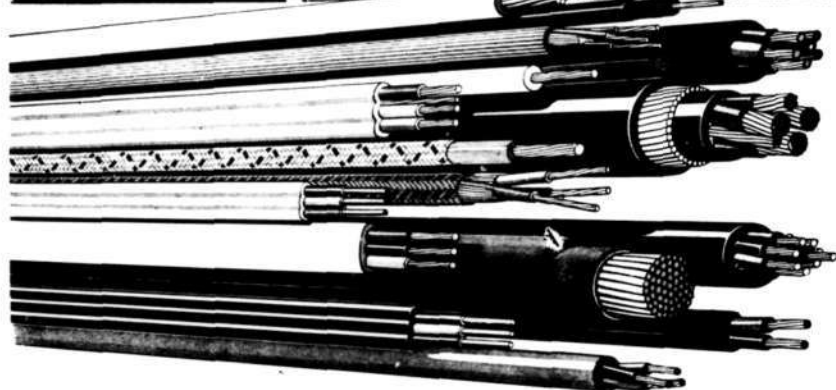


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Over the years the work carried out by the Fenwick tugs has not always been confined to the sheltering ports. Some of the most colourful pages in the company's history have been those which concerned the tasks performed on the high seas. Long sea tows and the salvage of wrecked and endangered vessels along the coast provided thrilling stories of courage and seamanship. During the first four years alone of the present century, for instance, four big sailing vessels were saved from destruction and salvaged, one of them as far away as the coast of New Caledonia, by Fenwick tugs.

The present fleet consists of eight tugs, four diesel vessels and four steam. One of these, the S.T. Heros is among the largest tugs in commission in the Southern Hemisphere.

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## Royal Tour



The Royal Australian Navy assumed many responsibilities to ensure the safety of Her Majesty, Queen Elizabeth, and Prince Philip, Duke of Edinburgh during their stay in Australia.

The Navy's responsibilities included sea patrols during Royal flights, the escort of the Royal Yacht, the provision of Royal Guards and sentries, and the handling of all Royal communications.

ANZAC has been responsible for the safety of the Queen and Duke of Edinburgh aboard the Royal Yacht in Australian waters, carrying clearance divers to cope with any underwater emergencies.

The frigate, H.M.A.S. YARRA, was on the alert in the Tasman Sea while the Queen and the Duke of Edinburgh were flying from Christchurch to Canberra on February 18.

YARRA was stationed on the Royal aircraft's flight path, about 300 miles off the coast.

The New Zealand Navy also provided a frigate to patrol in the eastern half of the Tasman.

When Her Majesty and Prince Philip entered Sydney Harbour on March 2 in BRITANNIA, the Royal Yacht was followed by ANZAC, YARRA and PARRAMATTA. Ten naval ratings and an officer are serving in BRITANNIA.



Queen Elizabeth and the Duke of Edinburgh.

In ports, the Navy provides guard boats that patrol continuously around BRITANNIA.

The R.A.N. contributes to security at the Royal wharves, making available the necessary ceremonial and security sentries.

The Navy is responsible for ensuring rapid communications between the Queen and Whitehall.

Whether on land, sea or in the air, the Navy is in constant communication with the Royal party.

Among the regular transmissions are special weather forecasts for the Royal Yacht and bulletins prepared by the B.B.C. to keep the Queen up to date on current news events in Britain.

The Navy's shore radio station in Canberra (H.M.A.S. HARMAN) is the main terminal for all Royal communications and the R.A.N. has also set up temporary communication centres at Parliament House in Canberra, and at the Northern Territory Administration's District Office in Alice Springs.

Wrens and sailors from Canberra Sydney and Darwin staff these temporary radio centres.

A W.R.A.N.S. officer, Second Officer Pat Broadbent, has been appointed as cipher officer at both Canberra and Alice Springs Centres.





H.M.A.S. ANZAC — Escort for H.M.Y. BRITANNIA while she is in Australian Waters.



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THE NAVY

## PRAISE FOR GUARD AND BAND

Rear Admiral G. G. O. Gatacre, C.B.E., D.S.O., D.S.C. and Bar, Flag Officer in Charge East Australia Area, has promulgated the following signal:

"I was tremendously proud of all Naval personnel who participated at the Overseas Terminal this morning in berthing the Royal Yacht and of the ceremonial greeting of Her Majesty and His Royal Highness.

"Some tasks were more glamorous and spectacular than others, but all were performed with a distinction that earned great credit for the Navy and for the Nation.

"The Royal Guard and Band were magnificent. I was informed by a member of the Royal Entourage that it was 'the best so far'."

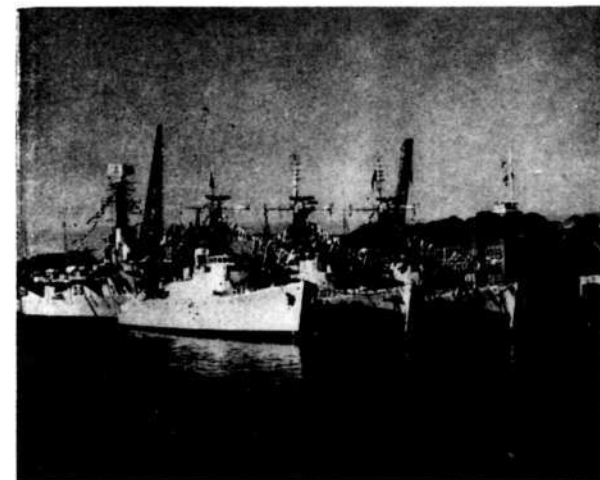


Right Top: Guard Commander Lt. Cdr. D. F. Wilkinson, escorts Her Majesty as she inspects the Royal Guard-of-Honour, average age 18 years, at the Overseas Terminal, Sydney Cove.



**DRESSED FOR THE VISIT:** The three O's of the R.A.N., H.M.A.S. QUIBERON, H.M.A.S. QUEENBOROUGH and H.M.A.S. QUICKMATCH, "dressed" at Garden Island during the Royal Visit.

MARCH, 1963







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THE NAVY

## R.A.N. TO BE STRENGTHENED

The Minister for Defence, Mr. A. G. Townley, recently announced plans for a substantial strengthening of the Royal Australian Navy with the purchase of —

- A squadron of British Oberon-class submarines (Australia now has no submarines in its fleet) and
- A third guided-missile destroyer of the Charles F. Adams class. The first of two such destroyers, ordered from the United States two years ago, is to be delivered in 1965.

Mr. Townley announced the new plans for the Navy after a meeting of Federal Cabinet.

He said the two major decisions would add still further to the strength and efficiency of the Navy.

Some newspaper reports claim that behind the decision is the Government's desire to strengthen the Navy to match Indonesia's naval build-up.

### Oberon Class Submarines

The Oberon Class submarines

are a modern type of conventional diesel-electric submarine.

They first went into service in Britain less than two years ago.

The Oberon Class is 295 feet long, has a displacement of 2030 tons on the surface, and carries six officers and 62 ratings.

It fires homing torpedoes from eight 21-in. tubes.

It is capable of high underwater speeds for long periods, and can remain on patrol for

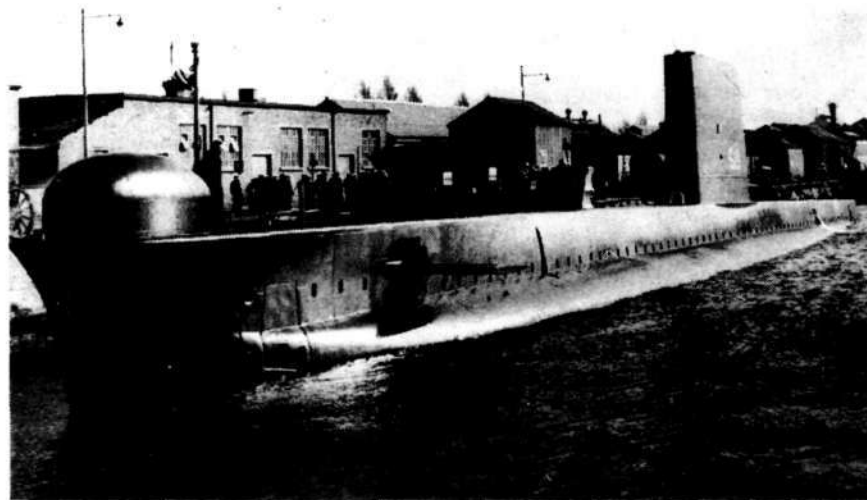
several months without support.

The submarine has oxygen replenishment gear and hydrogen and carbon-dioxide eliminators, which enable it to remain submerged for several days without even using its snorkel.

### Saving On Nuclear Power

The choice of the Oberon Class submarines is linked also with cost. The Oberon is the most modern conventional type available.

By buying conventional-type submarines, Australia will get a squadron for less than the price of a single nuclear-powered submarine, estimated at nearly £25 million.



An Oberon Class Submarine.

MARCH, 1963



## FOUR SUBMARINES AND NEW DESTROYER FOR R.A.N.

DETAILS ANNOUNCED By  
NAVY MINISTER

The Minister for the Navy, Senator Gorton, has given the following details of the Government's plans to obtain submarines for the Royal Australian Navy.

He said a total of four "Oberon" class submarines would be purchased from Britain. The cost of each submarine would be about £4,500,000. The total order, including stores and spares, would be in the region of £22,000,000.

The first submarine was due to be completed and commissioned by the R.A.N. in December, 1966. The remaining three would be finished by mid-1968.

Senator Gorton said the R.A.N. had already called for volunteers for submarine service, and the first group of officers and men would leave in April to begin training in Britain.

The Australians would undertake courses at the Royal Navy's Submarine School in Portsmouth (H.M.S. DOLPHIN), and then obtain seagoing experience in submarines in Britain. The first crew would complete its comprehensive training in time to commission the first R.A.N. submarine for its delivery voyage to Sydney.

The three Royal Navy submarines at present on loan to the R.A.N. would be withdrawn progressively as the new "Oberons" were delivered.

The submarines would be based in Sydney, using the existing submarine facilities at Balmoral. They would be entirely maintained in Australia, and would be re-fitted at the Cockatoo Island Dockyard.

Senator Gorton said the "Oberon" ranked as one of the world's most advanced conventional submarines. It was capable of high underwater speeds, and could maintain continuous submerged speed in any part of the world. It was equipped to fire homing torpedoes.

It had been decided to obtain four submarines, because this was the minimum requirement to meet the needs of the R.A.N. and R.A.A.F. One of the submarines' major peacetime tasks would be to provide efficient training for Australia's sea and air anti-submarine forces by assuming the "enemy" role in exercises. This in turn would give the submarine experience in offensive roles. The submarines would also be trained for use against submarines, which was a modern development in anti-submarine warfare.

Senator Gorton said that in war, the Australian submarines would have a great variety of uses, ranging from the disruption of enemy sea communications to the landing of commandos.

Referring to the decision to purchase a third guided-missile destroyer of the "Charles F. Adams" class, Senator Gorton said immediate negotiations would begin with the United States Navy, and construction would start as soon as possible. The first two missile destroyers, already under construction, would be completed in 1965, and the first of them was due back in Australia by December of that year.

The new guided-missile destroyer would cost about £20,000,000, the same as the first two.

Senator Gorton also made the following points:—

\* The R.A.N. was embarking on one of its most intensive peacetime periods of development. During the next five years it would commission two new Australian-built frigates and an Australian-built survey ship, as well as the guided-missile destroyers and submarines.

(Continued on page 32)



Guided Missile Destroyer

Minister for the Navy,  
Navy Office,  
Canberra, A.C.T.

5th February, 1963.

My Dear Admiral,

Thank you for your letter as Federal President of the Navy League of Australia, concerning the recently-announced expansion programme. The Department, and I, thank you for the congratulations you extend to us.

I appreciate your remarks as to the Australian Naval Shipbuilding Industry, and you have, of course, raised a very important and a very difficult matter. As you say, time is a relevant factor in this consideration, and so is cost. It costs, and there is no question whatever about this, 30% more to build a Naval ship in Australia than it does to build it abroad, even when the local industry has had practice in building a particular type of ship.

This means that for a given outlay the Navy could have, roughly, four ships built abroad for the cost of three constructed in Australia. Since, at present, I am personally seized with the need to build our Naval forces as quickly as we can, this is, to me, pretty decisive.

I would also point out that the ships constructed in Australia are, for the most part, assembled, rather than constructed, because of the radio, electronic gear, and special equipment of all kinds which are brought from overseas to be assembled in them. This, together with the time taken to build a ship even under wartime conditions, renders the military value of possessing a Naval ship assembly capacity rather limited—particularly if we have a smaller fleet in being at the outbreak of a war as a result of obtaining such capacity.

However, this is a big and complicated subject and can scarcely be canvassed in this letter, the object of which is to say thank you to the League and to assure you that the views expressed in the second paragraph of your letter, even if they are not followed, will not be overlooked.

Yours sincerely,

(Sgd.) J. G. GORTON,  
Minister for the Navy.

Rear-Admiral H. A. Showers, C.B.E.,  
Federal President,  
The Navy League of Australia.

Double Bay,  
9th February, 1963.

Dear Senator Gorton,

Thank you for your letter of 5th February in reply to mine as President of the Navy League, regarding the current expansion programme of the R.A.N.

The thinking of the League is parallel to your own, and, with regard to the detail of our disappointment, it is agreed that the subject is too complex to be canvassed in a letter. On a convenient day after you return, I, personally, would appreciate an opportunity to discuss it further with you.

The object of this letter, however, is to wish you God-speed and every success during your overseas visit, with a safe return to continue the good work.

Yours sincerely,

H. A. SHOWERS,  
Federal President, Navy League of Australia.



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## OVERSEAS ORDER FOR NAVY SHIPS ATTACKED

*The Associated Chambers of Manufactures recently criticised the Federal Government's decision to order from overseas all ships and submarines for the Navy's expansion programme.*

The Director of the Chambers, Mr. R. W. C. Anderson, said it was a matter of grave concern that Australian shipbuilding yards, which had proved their worth during the last war, were now being allowed to languish.

The Government recently decided to order a third Charles F. Adams guided-missile destroyer from the United States, and four Oberon-class submarines from Britain. Two Charles F. Adams destroyers, with medium range sea-to-air guided missiles, were ordered last year.

The order for the seven ships, with spare parts and missiles, will be worth more than £80 million.

### EMPLOYMENT FOR THOUSANDS

Mr. Anderson said the importance of the shipbuilding industry in Australia should need no stressing.

"It provides employment for many thousands of workers, and also a reservoir of skilled workers whose services are available in times of national emergency," he said.

"Our strong view is that, on balance, every effort should be made by the Government to maintain a shipbuilding industry in this country at a level which will permit it to continue to operate efficiently."

THE NAVY

## FACTS ON NAVAL SHIPBUILDING

### MINISTER REFUTES CLAIM OF CHAMBER OF MANUFACTURES

The Minister for the Navy, Senator Gorton, refuted claims made by the Associated Chamber of Manufactures.

The Minister had this to say:—

"The Chamber of Manufactures' statement was notable for the fact that almost every assertion it made was either totally or partially inaccurate. The statement claims that seven minesweepers are on order for Australia, and that Australian shipyards had no opportunity to tender for them.

"In fact:—

- \* "The number is six;
- \* "They are not on order, but have already been delivered, and are in service; and
- \* "An Australian shipyard was given the opportunity to examine the specification with a view to tendering, but indicated that, because of special materials required and special requirements during construction, it was not proposed to tender.

"The statement also claimed that Cockatoo Island Dockyard was forced to tender for construction of a civilian ship be-

cause of lack of a Naval order. In fact, Cockatoo Island Dockyard — which is operated by Vickers and which has always done some civil dockyard work — would be building a survey ship for the Navy to-day had not the Newcastle State Dockyard submitted a lower tender and secured the order.

"It was the loss of a tender for a Naval order, not the absence of a Naval order, which led Cockatoo Dockyard to bid on a civil ship. That Naval order, incidentally, was placed on a strict contract basis without reference to rate of spending of funds.

"The statement claims that the building in Australia of the destroyers being built in the United States would have provided work for thousands of Australians. In fact, what the shipbuilding industry means when it talks of building submarines and guided-missile destroyers in Australia is building the hulls in Australia and assembling inside those hulls the costly specialist equipment, electronic devices, missiles and other weapons imported from abroad.

"The only significant employment provided would therefore be in ship assembly work in shipyards, which would employ not thousands, but at the most a few hundred.

"The statement claims that it is the view of the industry that these destroyers could have been built more cheaply in Australia. Whether this is indeed the view of the industry, I do not know. But if it is, some explanation is required of:—

- \* "The fact that the Australian shipbuilding industry says it requires a 30 per cent. subsidy to compete with overseas prices for building merchant ships; and
- \* "That after full and detailed examination by the Navy, in conjunction with a part of the industry, the lowest estimate of the cost of building a much smaller and less sophisticated warship in Australia was 28 per cent. higher than overseas tenders, even though the Australian price was based on a conception of a strict contract without reference to the spending of funds.

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## FEMALE FRENCH TEACHER FOR R.A.N. COLLEGE

An announcement from Canberra recently indicates that not even the bastions of Naval tradition are immune to modern woman's invasion of the man's world.

The Minister for the Navy, Senator Gorton, said that for the first time in the 50-year history of the Royal Australian Naval College a woman had been appointed to the teaching staff.

This not only shatters Australian Naval traditions, but sets something of a precedent for many world Navies.

Senator Gorton said that Miss Eva Normai, of Caulfield, Victoria, had been appointed to teach French to the 120 cadet midshipmen at the Naval College.

Miss Normai, who is in her twenties, migrated from France some years ago.

Working in an almost exclusively male domain will be nothing new for Miss Normai.

For the past year she has been on the staff of the R.A.A.F. School of Languages at Point Cook, Victoria.

Senator Gorton said the College had been without a regular French teacher for the past year.

Miss Normai was well qualified for the post, being an Arts graduate from the University of Melbourne.

Miss Normai "joined the Navy" at Jervis Bay recently.

The only other woman on the staff at Naval College is a nursing sister, but the families of many staff members live at Jervis Bay.



The picture shows Lieutenant E. Mentz pointing out to Miss Normai some of the beauty of Jervis Bay after her arrival at the College.

MARCH, 1963



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## CHANGES IN BRITAIN'S DEFENCE

The following extracts are from a White Paper issued by the Ministry of Defence in Great Britain. The statement says the policy will remain unchanged following the planned switch from Skybolt to Polaris as the nation's deterrent in the late 1960's.

The statement reveals that Britain will continue to spend 7% of the gross national product on defence — which, in the year beginning in April, is expected to total £1838 million sterling.

This is £117 million more than the estimate made for the year just ending.

The new statement follows on the statement published a year ago which reviewed "the next five years". In the new statement the basic policy is not reiterated, but it is important to recall the objectives set out last year. These were:—

- To maintain the security of Britain.
  - To carry out Britain's obligations for the protection of British territories overseas and those to whom Britain owes a special duty by treaty or otherwise.
  - To make Britain's contribution to the defence of the free world, and the prevention of war in accordance with the arrangements Britain has with individual countries and under collective security treaties.
- The White Paper of a year ago also underlined the fact that while some nations can rely on membership of one collective security alliance to meet their basic objectives, Britain provides simultaneously contributions to N.A.T.O., C.E.N.T.O. and S.E.A.T.O., with the necessary ability this demands at any time to maintain forces in three areas of the world.

### New Nuclear Weapon

It says Britain is developing a new nuclear weapon — unnamed and still on the secret list — which will reinforce the

nation's Blue Steel stand-off bomb carried by the V-bomber force and the future Polaris submarine fleet.

This new weapon is expected to be in service by 1966, and will probably be carried by both the V-bombers and Britain's revolutionary hedge-hopping TSR.2 — an aircraft with no foreseeable contemporary — which is expected to fly for the first time by the end of this year.

### Polaris Plans For Navy

The Royal Navy is to be "responsible for creating and operating, in time to succeed the V-bombers, a force of Polaris-equipped nuclear submarines as Britain's independent contribution to the long-range strategic deterrent forces of the Western alliance."

The first of these submarines is scheduled for early 1968, and three or four others are expected to follow at close intervals. Each costs about £50 million.

It will "continue to be a primary role" of the Royal Navy to contribute to trade by deterring interference with the movement of merchant shipping, a role shared with N.A.T.O., S.E.A.T.O. and C.E.N.T.O. countries.

There will be two aircraft carriers and one commando ship east of Suez at all times.

The Navy votes represent an increase of £21 million.

There will be 273 ships available for various tasks during the year (apart from the reserve ships).

The design of a new aircraft carrier to replace H.M.S. VICTORIOUS "is making good pro-

gress."

The Navy's building programme is ambitious and progressive.

Under construction or on order on March 31, 1963, will be 14 frigates, two nuclear submarines, six conventional submarines, four guided missile destroyers, and two assault ships.

One nuclear submarine, DREADNOUGHT, is now undergoing sea trials.

### Commonwealth Navies

It continues to be a prominent policy feature to provide all practicable assistance and support to Commonwealth and Allied Navies.

In addition to participation in joint exercises, this has included training for officers and ratings of Navies concerned.

Making available R.N. officers and ratings for periods of loan or exchange services with other Navies, and the continued loan of submarines to the R.C.N., R.A.N. and R.N.Z.N. to meet their anti-submarine requirements.

About 1000 officers and ratings from the Commonwealth and from N.A.T.O. and C.E.N.T.O. Navies have taken R.N. courses.

Of the R.N.'s plans towards assisting the International Indian Ocean Expedition and National Institute of Oceanography in South-East Asia, the memorandum states:—

The International Indian Ocean Expedition is a projection of the scientific co-operation which proved so valuable during the International Geo-physical Year.

Scientists participating will work together in the collection of data, and the experience and results obtained will have immediate application to many national and common problems.



The Royal Navy is making available H.M.S. OWEN and H.M.S. DALRYMPLE, of the Surveying Service; R.R.S. DISCOVERY, the newly-built and commissioned oceanographical research ship, paid for jointly by

the Admiralty and the Development Commission and operated by the National Institute of Oceanography, is also participating.

#### R.A.F.'s Role

The effectiveness, and the role

of each of the three Services, are dealt with separately in memoranda issued in the statement.

The Air Ministry memorandum states that notwithstanding the cancellation of Skybolt, the responsibility for providing British strategic nuclear striking power will rest upon Bomber Command for some years to come.

Special measures are being taken to improve operational capacity between the time when Skybolt would have been introduced, and when British Polaris submarines are expected to enter service.

These measures include "the further development" of the new, secret nuclear weapon. This weapon, first intended for tactical operations, is described as particularly suitable to exploiting to the full the capacity of the TSR.2 to fly very fast, and, when circumstances demand it, under enemy radar cover.

In addition, it has been found that the weapon can be adapted speedily and cheaply to give a strategic nuclear punch.

The TSR.2 will carry a wide range of weapons. Its exceptional all-round performance makes it fully capable of working in both strategic nuclear and tactical nuclear roles.

This diversity in weapons and methods, the memorandum adds, "will greatly increase the effectiveness of the British Strategic nuclear deterrent and multiply the problems of finding a counter to it."

The memorandum emphasises that the primary purpose of nuclear strike aircraft will continue to be the prevention

of war involving the use of nuclear weapons.

It confirms that the Ballistic Missile Early Warning Station at Flyingdales, Yorkshire, will enter service this year.

A substantial fighter force will be kept up, and more squadrons will be maintained overseas. Generally, they will be supplemented by deployment of Bloodhound II surface-to-air missiles.

The size of the medium-range transport force in the Far East has been increased. Two Argosy squadrons are now in service in Britain, and one in Aden. The build-up of one for the Far East is now in progress.

#### Army

The Army memorandum envisages an all-regular Army in 1963 for the first time since 1939. This means that all National Servicemen will be "phased out" before the end of the year. The all-regular strength is estimated to reach 180,000.

In the Far East, it comments: "Following a marked increase in armed raiding by pirates off the east coast of Borneo, all three Services have gone to the assistance of the Borneo Government. The Army has contributed by sending troops to assist local police patrols, and has helped to restore confidence."

The memorandum contains evidence of the Government's de-

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One of the first official pictures of the Royal Navy's guided missile destroyer, H.M.S. DEVONSHIRE, in firing trials of the sea-to-air medium range guided weapon, Seaslug.

The missile roars away from the destroyer's twin launcher.

At this early stage of firing, the boosts can be seen still attached to the weapon.

Seaslug's propulsion system consists of a sustained motor with four boosts which are jet-tisoned after the missile has attained supersonic speeds.

It is operated and fired from the after-end of the ship without any personnel being exposed. Shots at long-range targets are directed by radar and subsequently plotted automatically for range, height and bearing.

Details of the target are obtained by the missile guidance control system.

The missile is fired from a twin ramp launcher which is fed automatically from the magazine below decks.

MARCH, 1963

THE NAVY



termination to ensure that the British Army is a hard-hitting, mobile force. It is to have increased striking power, by a production programme of weapons with longer range, accuracy, rate

of fire and lethality.

Exercises are planned this year in the Mediterranean, in Canada — and, for the first time, it is hoped, to send a Strategic Reserve Battalion to train in

Australia.

### New Navy Weapons

A variety of new weapons is now coming into service — Sidewinder, a homing guided missile which will improve the Scimitar aircraft in its air-to-air role; SS.11, an anti-tank wire-guided missile for assault helicopters.

Other deployment features noted provide for Tribal Class frigates to take over in the Middle East from ships of the Loch Class.



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## U.S. Navy Reports 10th Polaris Sub Is Ready

Washington.—The U.S. Navy commissioned its tenth Polaris submarine at Newport News, Va., on January 4.

The ship is the Thomas Jefferson, capable of launching the advanced Polaris A-2 missile, which has a range of 1725 statute miles.

Five additional Polaris submarines have been launched, but are not yet commissioned. It takes about six to eight months to prepare this type of ship for commissioning after it has been launched.

The elapsed time from commissioning until actual deployment with the fleet generally runs about eight to ten months.

### Greater Expansion

The growing Polaris submarine force will begin expanding at an even greater rate this June, when the Navy will start turning them out at the rate of one a month for the ensuing eighteen months.

A total of 41 Polaris subs are planned for the undersea force, with the last craft being commissioned in 1967.

Each submarine carries sixteen missiles.

The first five ships, deployed with the fleet in 1960 and 1961, are in the George Washington class, and fire the A-1 missile with a range of 1380 statute miles.

The Thomas Jefferson, part of the Ethan Allen class, can carry the A-1, or A-2, and will be able to fire the A-3 (with a range of 2875 miles) when it reaches an operational status.

## POLARIS-TYPE MISSILE REVEALED BY SOVIETS

The Soviet Union has revealed its version of the submarine-launched Polaris ballistic missile.

The 50-foot naval rocket was displayed in Moscow on November 7 at a military parade marking the 45th anniversary of the Bolshevik Revolution. It was the only new piece of equipment shown in the 45-minute parade.

The dark green rocket, mounted on a six-wheel trailer, was quickly pulled past the reviewing stand by a tracked personnel carrier. At the rear of the missile was a cluster of what appeared to be seven rocket motor nozzles.

The Government newspaper Izvestia, in a review of the parade, said the rocket was for use by Soviet submarines and surface ships. The paper added: "It can be fired from any position — both above and below the water. Such rockets hit the target with pin-point accuracy."

Western military observers said the rocket appeared to be a three-stage type, probably powered by solid fuel. They estimated range at "several hundred" miles.

### NEW RED EFFORT

The Soviet Union is undertaking a major expansion of its merchant fleet comparable to its efforts in space and atomic energy. The Soviet merchant fleet is expanding at a rate that will outstrip the U.S. fleet by 1966 and double its size by 1971.

That's the word from steamship executive Frank A. Nemec, believed to be the only American steamship official to have a comprehensive look at the Red mer-

chant fleet since the Russian Revolution.

Nemec also stressed that the Red ships are of good quality. He said the Reds are developing automation processes similar to those the U.S. is working on.

Right now the Soviets operate some 900 ships of 5,300,000 dead-weight tons compared to 900 active U.S. merchant ships totalling 12,000,000 tons. With a large percentage of the Red total fish and whale "factory" ships and supply vessels, the Soviets pose no threat to the West's trade supremacy today. But look out for the future, warned Nemec.

### WHY THE BUILD-UP?

A large Soviet merchant fleet would make that nation independent of the foreign merchant ships which must now be hired; it would give Russia access to all world markets, and earn foreign exchange — which would be lost to U.S. and other Western nations.

Nemec was a member of a maritime exchange delegation which visited Soviet ports for four weeks starting last August 11. He is Chairman of the Vessel Replacement Committee of the Committee of American Steamship Lines and Executive Vice-President of the Lykes Brothers Steamship Company.

In his talk — delivered to the Propeller Club of Washington — Nemec also described Soviet seamen, ports and operations.

How can the U.S. meet the Red challenge? Only with a "major effort" by Government, industry and labour, according to Nemec.



## Big Carrier For Royal Navy

A press report from London on the 11th February says:—

The Royal Navy is to order a 55,000-ton aircraft-carrier costing about £50 million as a result of defence talks held during the weekend.

The aircraft-carrier will be the biggest warship ever built in Britain, says the "Daily Express."

The Royal Navy's previous biggest ship was the 41,000-ton *Hood*, which was sunk during World War II.

The new aircraft-carrier will be the British Government's way of fulfilling the pledge by the Prime Minister, Mr. Macmillan, under the Nassau agreement to "increase the effectiveness of conventional forces on a world-wide basis."

The ship, carrying jet aircraft and helicopters, will allow Britain to switch troops quickly to trouble spots.

## CHANGE IN TOP POST

The officer who has held the Navy's top technical post during the R.A.N.'s transition to the "missile" age retired at the end of February.

He is Rear-Admiral K. McK. Urquhart, C.B.E., who has been in charge of Naval Technical Services and ship construction since his appointment as Third Naval Member of the Naval Board in 1959.

The Minister for the Navy, Senator Gorton, said that Admiral Urquhart would be succeeded by Captain F. L. George, who would be promoted to the rank of Rear-Admiral.

Admiral Urquhart began his Naval career forty-four years ago, when he entered the Royal Australian Naval College from Hobart. He specialised in engineering, and has held most of the Navy's senior technical posts. He has been General

Manager of the Naval Dockyard at Williamstown, Victoria, and General Manager of Garden Island Dockyard in Sydney. During the Second World War, Admiral Urquhart served in the Pacific campaign, and was Mentioned in Despatches.

Captain George takes over as Third Naval Member at a time of rapid Naval expansion, with guided missile destroyers and submarines on order for the R.A.N.

Captain George entered the Naval College from Sydney in 1921, and specialised in engineering. In addition to holding important dockyard posts, he was the first Captain of the R.A.N.'s Apprentice Training Establishment, and the first engineer officer to command the Navy's biggest training establishment, Flinders Naval Depot in Victoria.

## SPEEDY SURVEYORS



One of the two Westland Scout helicopters for the Royal Australian Navy lifts a heavy load in a test flight in Britain. The high-speed turbine-powered machines will be used by hydrographers, and will operate from the new survey vessel, H.M.A.S. MORESBY.

H.M.A.S. MORESBY is being built at the State Dockyard in Newcastle and will be launched later this year.

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## Launch of

### H.M. Submarine Otus

The ninth of the Oberon Class submarines was launched and named H.M.S. OTUS at the Greenock shipyard of Scott's Shipbuilding and Engineering Co. Ltd. in October, last year.

The naming ceremony was performed by Lady Carroll, wife of Sir John A. Carroll, K.B.E., M.A., Ph.D., F.R.S.E., Deputy-Controller (Research and Development) at the Admiralty.

H.M.S. OTUS has a length of 295 feet 3 inches, and a beam of 26 feet 6 inches. She will be propelled by diesel electric machinery of the Admiralty Standard Range type, the main propulsion generators, main motors and main controlling switch gear being manufactured by the English Electric Company. Her superstructure is mainly of glass fibre laminate.

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## Helicopter Carriers For South African Navy

A start has been made on the conversion of the two destroyers, SIMON VAN DER STEL and JAN VAN RIEBEECK, into helicopter carriers.

It is providing the Simons-town Dockyard with its biggest peacetime construction job, running into millions of rand.

According to a report in a S.A. newspaper, the two 20-year-old destroyers are unlikely to be ready for re-commissioning by March, next year, as planned by the Minister for Defence, Mr. Fouché. The delivery date is likely to be much later.

The dockyard is neither staffed nor equipped to handle such big projects speedily. Moreover,

both ships deteriorated by lying more than seven years in reserve. The modifications will give the two ships unique silhouettes.

A considerable part of their superstructure will be removed to provide a helicopter landing deck and a big, square hangar at the stern of each ship. The destroyers will each carry two British-type helicopters.

With the conversion of the two destroyers and the re-commissioning of the modernised and rebuilt minesweeper, PIETERMARITZBURG, and the arrival next year of the new frigate, PRESIDENT KRUGER, the South African Navy will reach its strongest peacetime state.

## MARINE CHIEF GIVES ADVICE

Washington, Jan. 2. — Gen. David M. Shoup, Marine Corps commandant famous for his salty and unconventional addresses to his officers and men, gave them another New Year's blast this year.

His special targets are complacency and "fat", whether on the body or the brain. Here is some of the advice he gave:—

1. "Too many fatties are still around. There's too much talking and not enough walking. . . Exercise your brain as well as your muscle — prevent flabbiness in both, an indication of ineffective leadership. Always potential commanders around who'd like a whack at it, you know.

"Roll Log Over"

2. "Drifting along on the log of complacency is dangerous. Roll the log over now and then. You may discover it is held together by termites.

3. "Too many marines kill each other with the equipment

with which they are entrusted. A single injury by accident is too many. Let's have none in 1963.

"What We Make Them"

4. "Many oldsters decry present-day youth. This prerogative is most apt to seize a man when a stomach, a bald spot, a lack of imagination and loss of curiosity begin to take over.

"Let's face the cold fact — the young men of today are just about what we make them. Why not provide good examples for guidance. If we can produce enough properly guided men we won't need guided missiles."

5. "I refuse to deliver our marines and their problems to the spinning tapes and flashing lights of a computer. I am not willing to accept a mechanical solution to a human problem.

"We will take the time and make the effort to deal with the marine as an individual and not a punched card or a blip on magnetic tape."

## THE ROYAL AUSTRALIAN NAVY BAND SERVICE

Bands have been in existence in the Royal Australian Navy since the year 1913, when musicians were recruited as such into the Navy. They were drawn mainly from British ex-service-men. The uniform chosen was an adaptation of the uniform of the Royal Marines. This changed officially on January 1st, 1960, to the normal Naval uniform.

In 1951, the Royal Australian Navy Band Service was enlarged to cope with the training of younger musicians, who entered at a minimum age of 15 and received two years' training. The

School of Music is situated at Westernport Bay, in Victoria. Apart from the training of boy musicians, adults were also trained. This enabled the 17½ to 26 age group to enter the Naval Band.

On completion of training, the man emerges from the School with a very comprehensive knowledge of musical perception, form and harmony, as well as being a competent performer in the Ceremonial Parade Band, Concert Symphonic Band, and Dance Band. Other musical combinations, such as woodwind ensembles, brass quintets and

solo performances, are also given every encouragement.

There are four fully-staffed bands in the R.A.N., with their total personnel of 120 fully-trained musicians, with a further 20 to 40 junior musicians under training at the School of Music.

Over the last 20 years, R.A.N. Bands have been well to the fore in some of the largest spectacles ever witnessed. A quick glance at past engagements shows such memorable occasions as the Victory Parade through London in 1946; the Coronation Parade in 1953, also in London; American Independence Day in Balti-

Right: Old and New — 1963 (left) to 1913 (right).

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more, 1953; the 1954 Royal Tour of Australia, and the 1956 Olympic Games in Melbourne.

As a spectacle, the Massed Navy Bands display before 100,000 avid spectators at the Melbourne Cricket Ground was the ultimate pinnacle of achievement. Who, of that crowd, will forget the sight as the bands marched and counter-marched with perfect precision, culminating their magnificent display by the formation of the five Olympic Circles and the flaming Olympic Torch!

Whenever it is possible, Bands of the R.A.N. combine so that the people of Australia can hear this versatile combination.

As a climax to our various tours around Australia last year, we were selected to take a large part in Australian history, when we performed at the opening ceremony of the British Empire and Commonwealth Games, making a fitting ending to our year's commitments.

## SENIOR NAVAL OFFICER RETIRES

A Naval officer who played a prominent part in the conversion of merchantmen to fighting ships in the Second World War retired on 4th March after 42 years in the Royal Australian Navy.

He is Captain A. M. Clift, O.B.E., who had been serving in Sydney as the Navy's General Overseer and Superintendent of Inspection, East Australia Area, and was the R.A.N.'s senior engineering Captain. He has retired after a distinguished career.

Captain Clift entered the Royal Australian Naval College in 1921, and on graduation became the first cadet to score top marks in every subject. He went on to specialise in engineering, and his pre-war ships included REPULSE, SHROPSHIRE and HOOD.

At the outbreak of war he was serving at Garden Island

Dockyard, and as an Armament Assistant in H.M.A.S. CANNIBERRA and H.M.A.S. WAR-AMUNGA, he returned to Sydney to supervise the increased armament of ships in the British Pacific Fleet.

Captain Clift's post-war service has included appointments as Director of Air Maintenance and Repair, and General Manager of Garden Island Dockyard.

In Sydney, Captain Clift will be succeeded as General Overseer by Commander P. J. A. Daish, of Canberra, who will become a Captain for the appointment.

Captain Daish entered the Royal Australian Naval College in 1939, and served in the Pacific during the Second World War. His most recent appointment has been as Assistant to the Third Naval Member at Navy Office.

## U.S. AIRCRAFT CARRIERS

Perhaps it would be of interest to *The Navy* readers to recapitulate the present United States aircraft carrier line-up.

There are nine anti-submarine carriers, all "Essex" Class ships with varying degrees of modernisation. All but one, the *Lake Champlain*, have angled flight decks. Normally assigned aircraft consist of two squadrons of S2F Tracker A/S aircraft, one squadron of HSS A/S helicopters and a detachment of radar search planes; a total of some 40 aircraft per ship.

The A/S carriers now in service are:—

<i>Essex</i>	In Atlantic
<i>Intrepid</i>	In Atlantic
<i>Randolph</i>	In Atlantic
<i>Wasp</i>	In Atlantic
<i>Lake Champlain</i>	In Atlantic
<i>Hornet</i>	In Pacific
<i>Bennington</i>	In Pacific
<i>Yorktown</i>	In Pacific
<i>Kearsarge</i>	In Pacific

Fifteen attack or strike carriers are also active. There are five "Essex" class ships, three "Midway" type, six "Forrestals" and the unique, nuclear-powered *Enterprise*.

The "Midways" (51,000 tons) were completed just after World War II, and together with the "Forrestals" (60,000 tons) and *Enterprise* (75,000 tons) will form the core of United States carrier task forces from the late 1960's at least into the 1980's. As new "Forrestal" type carriers are completed, the oldest "Essex" type attack carriers are re-designated as anti-submarine ships. In turn, the oldest A/S "Essexes" on the list are then placed in reserve.

Each attack carrier has a squadron of day fighters, one all-weather fighter squadron, three light attack squadrons (two jet and one prop), plus detachments of radar warning and photographic aircraft. The "Midway" and "Forrestal" class ships also have a heavy attack squad-

ron, while the *Enterprise* has a heavy attack squadron and a third light, jet attack unit. In all, the attack carriers each operate some 65 to 95 aircraft.

The attack carriers now in service are: (Grouped by type).

<i>Enterprise</i>	In Atlantic
<i>Constellation</i>	In Pacific
<i>Kitty Hawk</i>	In Pacific
<i>Independence</i>	In Atlantic
<i>Ranger</i>	In Pacific
<i>Saratoga</i>	In Atlantic
<i>Forrestal</i>	In Atlantic
<i>Coral Sea</i>	In Pacific
<i>F. D. Roosevelt</i>	In Atlantic
<i>Midway</i>	In Pacific
<i>Oriskany</i>	In Pacific
<i>Ticonderoga</i>	In Pacific
<i>Shangri-La</i>	In Atlantic
<i>Bon Homme Richard</i>	In Pacific
<i>Hancock</i>	In Pacific

Also in service as an "aircraft" carrier is the *Lexington*, an "Essex" class ship with an angled deck, which is used as a training ship for naval aviators. She replaces the *Antietam*, which is leaving the carrier ranks.

The "older" carriers in reserve are not capable of operating to-day's high-performance jet aircraft, and would prove to be of little value as combatant vessels in modern naval operations. (In fact, the accident rate aboard the modernised "Essex" class is exactly twice as high as aboard the larger "Forrestals").

A seventh, 60,000-ton, oil-burning "Forrestal" class attack carrier is now under construction. She is the *America*, which will join the fleet in 1964. An eighth ship of this type has just been authorised, and should be ready about 1966.

Another six carriers must also be included in any discussion of this sort, although they are not officially rated as such. These are the six amphibious assault ships (Commando carriers) now in service. The *Thetis Bay*, *Boxer*, *Valley Forge*, *Princeton*, *Okinawa* and *Iwo Jima*. The first is a converted escort or "jeep" carrier, the next three are "Essex" class ships, and the

last two are "built-for-the-purpose" helicopter ships. Two more ships of this type are under construction, and another — the ninth helicopter carrier — has just been authorised.

These ships are not equipped to handle fixed-wing aircraft, but can operate helicopters rigged for A/S operations, as well as transport helicopters.

Two small (14,000-ton) aircraft carriers, the *Wright* and *Saipan*, are now in the yards being converted to command ships (similar to the U.S.S. *Northampton*); an escort carrier is being converted to a floating radio relay station; and four other escort carriers are in service as cargo ships.

I hope the above information will be of interest to *The Navy* readers and will set the records straight for the present.

Yours faithfully,

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Washington, D.C., U.S.A.

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## Volunteers for Submarines

*The Navy's call for volunteers for its new submarine service has met with a prompt and enthusiastic response from officers and men of the R.A.N.*

In the first two weeks applications were received from nearly 80 volunteers.

This response was before the announcement of the conditions of service in submarines.

An even greater flow of applications is now expected, following the release of these conditions.

Two officers and 30 ratings to be selected for the first submarine training courses will leave for Britain in April.

Similar groups will begin training in every six months.

It was announced last month that the R.A.N. would acquire four submarines of the Oberon class, the first of which would

be completed by the end of 1966.

The Oberons will be commissioned by Australian crews, who will gain practical experience in British submarines until the R.A.N.'s boats are ready for delivery.

The Navy is seeking submariners in the Seaman, Communications, Engineering, Electrical and Supply and Secretariat categories, and also Ordnance Artificers.

On completion of training, all ratings will be entitled to an additional daily rate of "submarine pay".

The Navy is demanding high standards of fitness and efficiency, and ratings will serve an initial period of five years in the submarine branch.

Meanwhile, officers and lieutenants' ranks in the Seaman,

Engineering and Supply and Secretariat Branches are also being invited to volunteer for submarine service.

The early volunteers include about 60 ratings and 20 officers.

Those not selected for the initial training will be considered for later courses.

In future, all eligible officers and men will be able to indicate preference for submarine service.

The Australian submariners will be trained at the Royal Navy's Submarine Training Centre at Portsmouth (H.M.S. DOLPHIN).

Courses will last from three to six months, and the Australians will then join Royal Navy submarines in Britain for two years' seagoing experience.

The Minister for the Navy, Senator Gorton, said that the R.A.N. submarine branch would require the services of about 100 officers and men.

## ROYAL NAVAL SUBMARINE ESCAPE TRIALS SUCCESSFUL

A team of Royal Naval officers and ratings have successfully completed seven days of trials in the Mediterranean to test new techniques for escaping from submarines at depths up to 260 feet. The team comprised submarine branch officers and ratings, and Royal Naval doctors specialising in the physiology of deep diving and escapes.

H.M. Submarine TIPTOE was employed in the trials a few miles east of Malta to investigate some of the problems entailed in getting men to the surface from greater depths than had before been practised. British policy has always been to concentrate the full escape facilities within the submarine itself and to train all submarine personnel escape technique from depths down to 100 feet. This training is carried out without any individual breathing apparatus.

The present series of trials — "Upshot One" — began in

the Mediterranean on September 24th and ended on October 4th. They employed the current British Buoyant Ascent Method, as well as trying out a new type of escape suit incorporating a specially-developed "hood" which enables the escapee to breathe the "trapped" air during his passage to the surface.

Royal Naval medical specialists believe that individual escapes from 450 feet, or even deeper, need no longer be regarded as an impossibility in years to come, even without the use of breathing apparatus, but much further research will be needed before such a technique could become standard practice for all submariners.

To carry out the trials the submarine H.M.S. TIPTOE was supported by the Torpedo Recovery Vessel, H.M.S. MINER VI, which was used as a base ship for the trials and the divers, who were ensured safety in the event of difficulties. Four days

were given over to a series of escapes starting at 80-ft. to test equipment and personnel and using buoyant ascent methods up to the maximum depth of 260-ft. On October 4th the men returned to Malta, having spent three further days of trials using the escape hood technique, again down to 260 feet. Escapers were flooded to a pre-determined level at atmospheric pressure in the submarine. They were then positioned at the escape hatch and prepared for surfacing by accurate pressurisation. Escapers then surfaced in pairs.

Officer-in-charge of the trials was Lieut.-Commander John Merewether, R.N. He has been 19 years in the Royal Navy, and has spent 17 of them in submarines.

The team of volunteers who carried out the actual escapes was led by Lieut.-Commander Lawrence Hamlyn, R.N., the Command Escape Officer on staff of Flag Officer Submarines.



The object of the Navy League in Australia, like its older counterpart, the Navy League in Britain, is to insist by all means at its disposal upon the vital importance of Sea Power to the British Commonwealth of Nations. The League sponsors the Australian Sea Cadet Corps by giving technical

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

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

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

For particulars, contact The Secretary, 66 Clarence Street, Sydney, N.S.W., or The Secretary, Room 8, 8th Floor, 528 Collins Street, Melbourne, C.I, Victoria

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H.M.S. TABARD



Other volunteers who undertook the full series of first-ever escapes from British submarines at 260 feet were: Chief Petty Officer Coxswain Leslie Crossman; Chief Petty Officer Coxswain Patrick Cadogan; Petty Officer D. W. Rosson; Petty Officer Raymond James; Acting Petty Officer, Second Coxswain Leonard Stokes; Acting Petty Officer Robert Stoopman.

In addition to these, Surgeon Lieutenant H. M. Parsons, R.N., and an Admiralty civilian submarine specialist, Mr. Kenneth Taylor, carried out some escapes from shallower depths to test equipment.

Studying medical aspects of the trials was Surgeon Lieutenant - Commander E. E. P. Barnard. He is on the staff of the Royal Naval Physiology Laboratory, and for the past three years has been a specialist in diving and submarine medicine.

## Homecoming Frigates Honour Lost Cruiser

Two Australian warships returning home from service in South East Asia paid tribute to a famous R.A.N. cruiser lost in the Second World War.

The frigates, QUIBERON and QUEENBOROUGH, held a memorial service in the Sunda Strait at the spot where H.M.A.S. PERTH was sunk by the Japanese twenty-one years ago.

A signal received at Navy Office said that the two frigates conducted the ceremony in the early hours of the morning, at about the time when PERTH went down on the 1st March, 1942.

A PERTH survivor serving in H.M.A.S. QUIBERON, Chief

Ordnance Artificer Mark Goodwin, of Caulfield, Melbourne, cast a wreath into the sea in memory of his former shipmates.

PERTH was torpedoed after a furious running battle with superior enemy forces, and 352 members of her crew were lost. Of the 320 taken prisoner, only 215 survived the war.

QUIBERON, commanded by Commander V. A. Parker, and QUEENBOROUGH (Lieutenant-Commander F. R. Woods) returned home, after five months' duty with the British Commonwealth Strategic Reserve, on the 25th February.

## NEW SCHEME FOR MORE OFFICERS

**It is intended to take advantage of the officer potential among the young men entering two of the Navy's training establishments — the Apprentices' School and the Junior Recruit School.**

Young men selected from these two establishments will be given 12 months of intensive academic training to prepare them for matriculation.

Those who qualify and are selected will then enter the Royal Australian Naval College with the annual senior (matriculation) entry.

The junior recruits will be selected during their first year of training, while apprentices will be chosen during their first

18 months at the Apprentices' Establishment at Quaker's Hill, near Sydney.

They will then attend a special class at the Junior Recruit Training Establishment in Western Australia for their intensive year of academic study.

The first special class has begun, with 13 students.

Senator Gorton said the scheme was expected to provide the R.A.N. with excellent officer material.

Many youths who left school at 15 to join the Navy soon realised that extra career opportunities were only available to those with the necessary educational qualifications.

This realisation gave them the incentive to return to academic study.

The new officer training plan for junior recruits and apprentices is in addition to the Upper Yardman scheme under which any eligible rating can achieve officer status.

## FUTURE OFFICERS



Midshipmen about to embark in a bus in Sydney for the Royal Australian Naval College, at Jervis Bay.  
MARCH, 1963

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## FOUR NAVIES AT HOBART

The navies of Australia, Britain, the United States and France were represented at the annual regatta in Hobart.

In addition to the Royal Yacht, *BRITANNIA*, there were six Naval ships in Hobart for this year's Royal regatta.

France was represented by the modern frigate, *COMMANDANT RIVIERE*, which is based at Noumea. The French warship was in Hobart from 22nd-28th February, and then took part in exercises with Australian warships while on passage from Hobart to Sydney. *COMMANDANT RIVIERE* was in Sydney from 3rd-7th March.

The United States representative at the regatta was the destroyer escort, *U.S.S. DURANT*. She was in Hobart from 23rd-28th February, and also visited Sydney from 2nd-5th March.

The Australian warships were the flagship, *H.M.A.S. MELBOURNE*; a frigate, *H.M.A.S. QUICKMATCH*, and the fleet tanker, *H.M.A.S. SUPPLY*. In addition, the destroyer, *H.M.A.S. ANZAC*, escorted the Royal Yacht, *BRITANNIA*.

The overseas warships were invited to visit Tasmania on personal invitations from Mr. Townley.

## New Submarine Laid Down

The first pre-fabricated unit of a new Oberon Class submarine, to be named *H.M.S. OPPORTUNE*, was laid recently by the builders, Messrs. Scotts Shipbuilding and Engineering Co., at Greenock.

The *OPPORTUNE* is the 13th Oberon Class submarine to be laid down for the Royal Navy in the last three years, and six of them are already in service.

## Carrier Wins R.A.N. Efficiency Award

The Navy's top efficiency trophy, the Gloucester Cup, has been won by the aircraft carrier, *H.M.A.S. MELBOURNE*.

The Minister for Defence and Acting Minister for the Navy, Mr. Athol Townley, said that the *MELBOURNE* had been selected as the most efficient unit of the Australian Combat Fleet.

It is the first time that the carrier, which is the flagship of the Fleet, has been awarded the Gloucester Cup. A consistent winner in recent years has been the Daring Class destroyer, *H.M.A.S. VAMPIRE*.

(Continued from page 8)

- The submarines alone would require an additional 400 officers and men. During the next four years, the Navy's manpower would increase from 11,200 to about 13,500.
- The orders for the submarines would be placed through the Admiralty in Britain, and their advice would be sought on the dockyards to undertake construction.
- Once the Australian submarine squadron was established, submariners would receive training in Australia.
- The submarines would be made available for training with the Royal New Zealand Navy, within the provision of certain financial arrangements.

## Centenary of N.S.W. Naval Brigade

1963 is a milestone in the history of Australia's defence services. The establishment of one of Australia's first defence forces — the New South Wales Naval Brigade — took place 100 years ago this year.

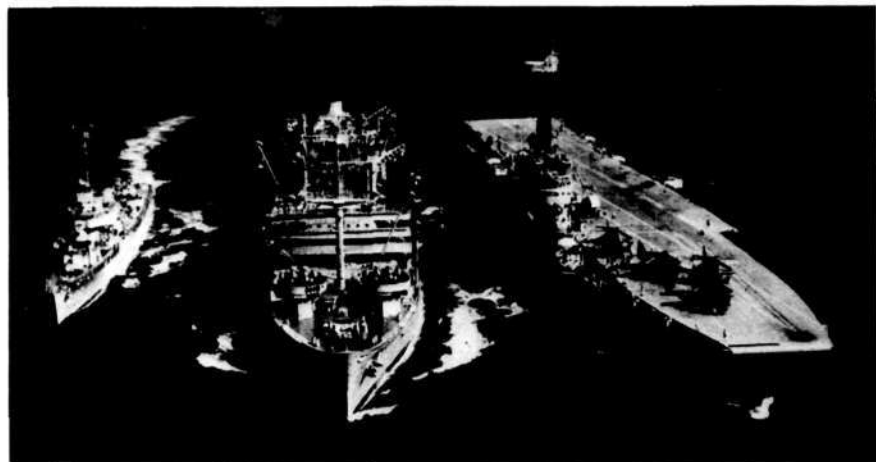
The Minister for Defence and Acting Minister for the Navy, Mr. Townley, said that the Brigade held its first parade in Sydney on the 19th May, 1863. Only 20 officers and men attended this first parade, but by 1885 the strength of the force had increased to 640.

The objects of the Brigade were to man any future ships acquired by the Colony, to provide reinforcements for the Royal Navy, and to take part in any expeditions requiring additional naval personnel.

The main task of the Brigade became the manning of shore defence batteries. Between 1869-1900, the Brigade undertook the entire responsibility of manning the guns on Pinchgut, which was one of Sydney's principal forts.

Members of the Brigade also saw overseas service. Volunteers went to China in 1900 to fight in the Boxer Rebellion.

The Brigade, like the State navies formed in Victoria, South Australia and Queensland, became part of the Commonwealth Naval Forces after Federation. In 1911, these Naval Forces were proclaimed the Royal Australian Naval Reserve.



*H.M.A.S. MELBOURNE* refuels from the tanker *U.S.S. HASSAYAMPA* during SEATO exercises, while the American destroyer *U.S.S. PHILIP* prepares to refuel simultaneously.

## OIL SERVES THE NAVY WELL

Just over 50 years ago there occurred a most significant event in British naval history — the recommendation, by a Royal Commission presided over by Britain's First Sea Lord, that the Royal Navy adopt oil as its fuel.

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## OUR COVER . . .

The cover this month shows *H.M.R.Y. BRITANNIA* at the worst of the rain storm which welcomed the Yacht passing Garden Island.





### *Britannia Sails*

The Royal Yacht, BRITANNIA, makes a graceful picture as she leaves Sydney Harbour on March 4, bound for Brisbane, where Her Majesty and Prince Philip were enthusiastically welcomed on March 6.

Photograph by courtesy  
"Daily Telegraph."



THE

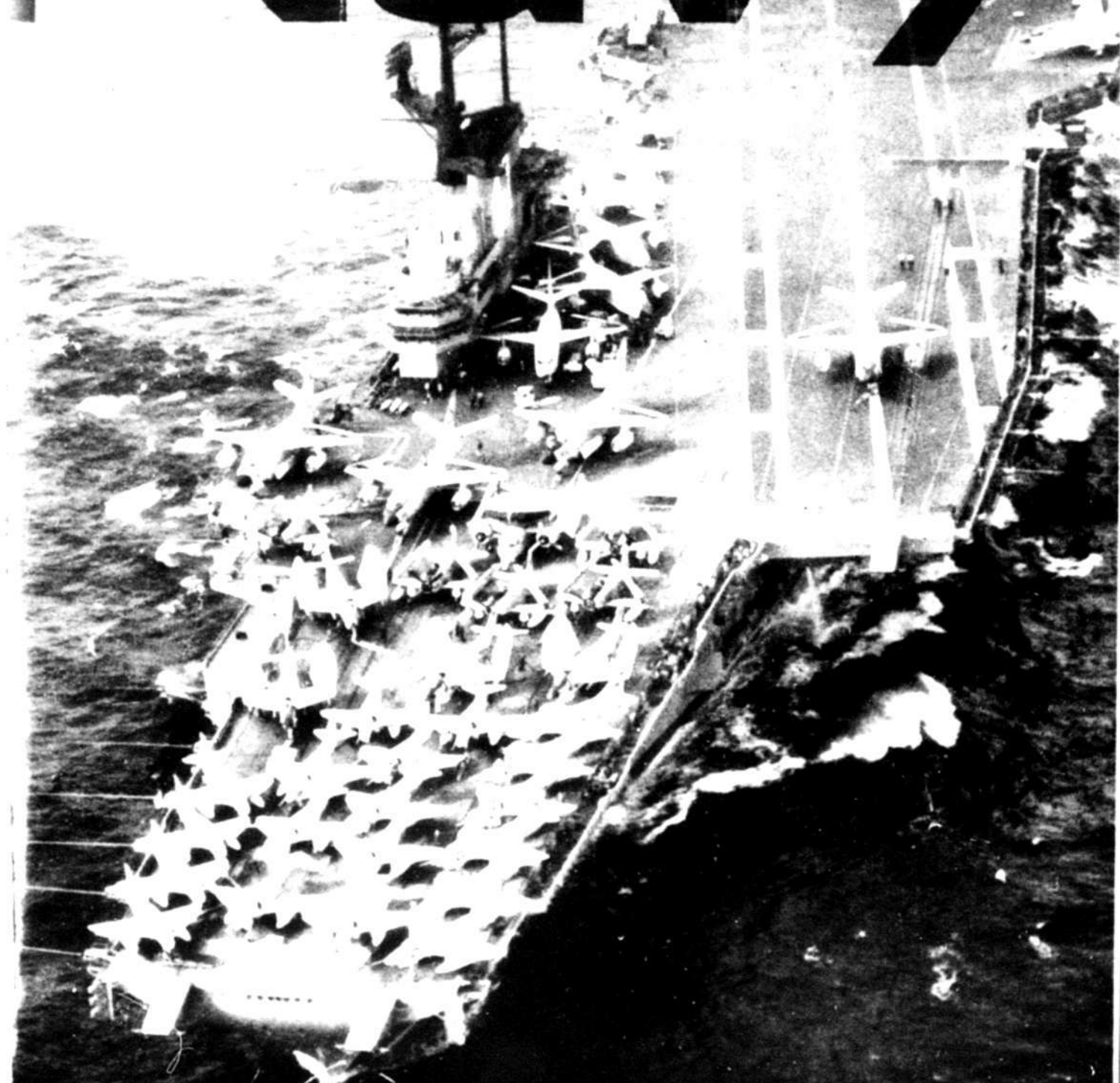
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# Navy







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THE NAVY

# THE NAVY

Vol. 25

APRIL-MAY, 1963

No. 11

The Official Organ of the Navy League of Australia

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Sir Robert Menzies, K.T., C.H., P.C., M.P.,  
Prime Minister of Australia,  
Parliament House,  
Canberra, A.C.T.  
Dear Sir Robert,

The office-bearers and members of the Navy League of Australia join with me in extending to you and Lady Menzies our most sincere and heartiest congratulations for the most noble and high honour that Her Majesty personally has seen fit to bestow upon you for your long, outstanding services to Australia and the British Commonwealth of Nations.

We wish to both Lady Menzies and yourself long life, with future good health and happiness, to enjoy fully the benefits of your endeavours.

Yours sincerely,

H. A. SHOWERS,  
Rear Admiral,  
Federal President.

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THE NAVY

# GOODBYE

In a farewell message, Her Majesty said:—

"As our aircraft leaves Sydney, my husband joins me in a request that you should convey our very sincere thanks to the Prime Minister and to the Government and to my people throughout Australia for their hospitality and for their loyal and enthusiastic welcome which they had given us since our arrival at Canberra five weeks ago.

"We have enjoyed ourselves tremendously.

"We are indeed sorry that the time has come to say goodbye, but we take with us the memory of a deeply impressive experience, and we are more than ever convinced of the vitality of Australia and of the powerful destiny that lies before her citizens.

"Their prosperity and welfare will always remain among my deepest and most heartfelt interests.

—"ELIZABETH R."

## Governor-General Replies

Lord De L'Isle's reply on behalf of the Government and people of Australia read:—

"On behalf of the Government and people of Australia, I beg to thank Your Majesty for your gracious farewell message.

"May I send you and His Royal Highness, from the whole nation, our best wishes for a speedy and successful journey to Britain.

"I offer, as well, our deep and sincere thanks for this visit by yourself and Prince Philip to parts of the Commonwealth.

"Australians will long recall with pride and pleasure Your Majesty's and His Royal Highness' stay amongst us.

"This visit has proved once again an eagerly awaited opportunity to display to Your  
(Continued, page 6)



Despite the soaking rain, the Queen manages a happy smile as she talks to the Prime Minister, Sir Robert Menzies, before boarding the Royal plane at Mascot for the final journey to Britain. The Governor-General, Lord De L'Isle and Prince Philip (observed) look on.

APRIL-MAY, 1963



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## CLOSER R.A.N. - U.S.N. CO-OPERATION

The Australian and United States Navies were co-operating more closely as time went on, Senator J. Gorton said.

### DESTROYER DEAL

Senator Gorton, Minister for the Navy, recently returned from a five-week mission to the United States and Britain.

He said:—

"With the exchange of officers and the standardisation of equipment, it is inevitable that we work more closely together.

"This is not just because we are buying their destroyers. It was happening long before then, too."

In Washington, he discussed payment of terms for the third missile destroyer ordered for the Royal Australian Navy.

He saw the first two destroyers (of the Charles F. Adams class) already in production in Michigan.

He said:—

"We are fitting an Australian anti-submarine weapon to the destroyer, because we believe it is better than that used by the United States Navy.

"The first destroyer will be ready in May, 1965; the second in November that year, and the third about a year later.

"They could be ready earlier than that, but our crews would not be trained in time."

In Britain, he discussed production plans for four new Oberon-class submarines for the Royal Australian Navy.

### TENDERS

He said tenders would be called for their construction in May.

The first should be delivered to Australia in December, 1966.

Australian sailors to be trained in England for the submarines have left Australia.

Senator Gorton said he had discussed research and development programmes with U.S. Navy officials.

"Mine was a purely nuts and bolts mission, not a policy mission," he said.

"I spoke with defence chiefs in the U.S. and Great Britain, and I agree with them that the submarine force is the most vital threat by an enemy, if not the only threat."

Senator Gorton said the United States was not putting pressure on Australia to increase its defence forces.

American defence chiefs had made no suggestions about any particular force or area in Australia.

(Continued from page 5)

Majesty personally our deep loyalty and affection.

"Your Majesty's generous acknowledgment of your sense of the strength and warmth of these feelings has rejoiced all our hearts.

"We cannot help feeling sorry that your visit has now reached its appointed end.

"Your Majesty and Prince Philip take with you the heartfelt good wishes of Australians everywhere and our gratitude that Your Majesty's presence has once more demonstrated the strong and enduring ties which unite the Australian people to their Queen.

"DE L'ISLE,  
Governor-General."

THE NAVY

## Coral Sea Visitors

# ADMIRAL JOHN H. SIDES

Commander in Chief, United States Pacific Fleet



Admiral and Mrs. Sides who will visit most Australian capital cities in the next few weeks.

(U.S. Navy photograph).

Admiral John H. Sides, U.S. Navy, was graduated from the Naval Academy at Annapolis, Md., in June, 1925. During the next six years he served in battleships and destroyers, predominantly in assignments connected with ordnance gunnery. In 1931 he commenced an ordnance post-graduate course which culminated in 1934 with his receiving a Master of Science degree in engineering from the University of Michigan.

During the remaining years before World War II he served in ordnance assignments in cruisers, battleships, and the Bureau of Ordnance, and commanded the TRACY.

The beginning of the war found him as gunnery officer of the cruiser SAVANNAH, but in 1942 he was again ordered to the Bureau of Ordnance, where he was Chief of the Ammunition and Explosive Section, Research and Development Division, directing the development of new and improved fuses, projectiles, and more powerful explosives, for use in underwater munitions. During the latter half of the war, he again went to sea with the Pacific Fleet, serving first as Commander Mine Division Eight, and then as Commander, Destroyer Squadron Forty-seven.

From 1945 to 1947, he served on the staff of Commander Battleship - Cruisers, Atlantic Fleet, following which he attended the National War College in Washington.

In June, 1948, Admiral Sides was assigned duty as Deputy to the Director of Guided Missiles in the office of Chief of Naval Operations. Since that time



he has continually held key positions in directing the Navy's missile programme, except for one year when he commanded the cruiser ALBANY in 1950-51. He became a Rear-Admiral in 1952, and for the next three and a half years served as the Navy's Director of Guided Missiles in the office of the Chief of Naval Operations.

In January, 1956, he became the first flag officer to command a guided missile force at sea as he took over the newly-organised Cruiser Division Six, consisting of the guided missile cruisers BOSTON and CANNABERRA, and the cruiser command ship, NORTHAMPTON. These three cruisers represented the last word in new concept of naval weapons systems, and their operations pointed the way for the large number of missile ships to join the fleet during the next several years.

On 16th April, 1956, he hauled down his flag and relinquished command of Cruiser Division Six, and was appointed to become Deputy to Mr. Eger V. Murphree, recently appointed Special Assistant to the Secretary of Defence for Guided Missiles.

He assumed the rank of Vice-Admiral on 29th June, 1957, and became the Director of the Weapons Systems Evaluation Group, Office of the Secretary of Defence on 1st August, 1957.

He was detached from duty as Director WSEG on 1st August, 1960, and ordered to assume the duties of Commander in Chief, U.S. Pacific Fleet, with the rank of Admiral, on 31st August, 1960.

In 1962 Admiral Sides was chosen as the recipient of the Rear-Admiral William S. Parsons Award by the Navy League of the United States. This

annual award for scientific and technical progress was presented to him in recognition of his outstanding scientific leadership in the development of the Navy's missile programme from its birth to its present highly-advanced state.

Admiral Sides holds the Legion of Merit with Gold Star and Combat "V", two Navy Unit Commendations, Yangtze Service Medal, American Defence Service Medal, the American Campaign Medal, Asiatic-Pacific Campaign Medal, World War II Victory Medal, and National Defence Service Medal.

The Pacific Fleet Commander is married to the former Miss Virginia E. Roach, of Inez, Kentucky, and they have one daughter, Mrs. John Watson. Admiral and Mrs. Sides currently reside at Pearl Harbour, Hawaii, and their official address is Roslyn, Washington.

## THE CORAL SEA BATTLE

The following account of events leading up to the "Battle of the Coral Sea", and of the battle itself, is taken from the U.S. Navy's Official Story issued in a Washington communique on 8th June, 1942:—

(1) Early in March, 1942, the Japanese were observed concentrating transports and combatant ships at the ports of Salamaua and Lae, New Guinea, apparently for an assault on Port Moresby. The occupation of Port Moresby would have afforded the enemy a strategically located advance base from which promptly to make further attacks on Northern Australia.

(2) For some time, the bases of Salamaua and Lae had been subjected to air attacks by United States and Australian shore-based aircraft from Australia.

(3) On March 10, a number of aircraft from a Pacific fleet task force, under the command of Vice-Admiral Wilson Brown, joined these shore-based planes in a successful attack on shipping and shore-based installations at the enemy bases. This attack resulted in the sinking or damaging of more than 20 Japanese ships, and heavy damage to shore installations. The resulting disruption of the Japanese plans delayed the enemy from making any advance by sea to the south for two months. The attacking force was described in a communique as "American and Australian island based forces" since the participation of our aircraft carriers in that action had still not been discovered by the enemy.

(4) During April, Army reconnaissance planes reported that the enemy was once again con-

centrating transports and supporting elements, including aircraft from carriers and shore bases, preparatory to advance on the Solomon and Louisiade Islands. Early in May, these advances actually began. Bases for land planes in both these groups of islands were seized by the Japanese, and the entire northern portion of the Coral Sea was subjected to daily reconnaissance by enemy shore-based aircraft.

(5) On May 4, a task force of the Pacific Fleet, under the command of Rear-Admiral Frank Fletcher, found part of the Japanese invasion fleet anchored in and near the harbour of Tulagi, capital of the Florida Island, in the Solomon group.

In spite of excellent Japanese air reconnaissance facilities, Admiral Fletcher's attack caught the Japanese completely by surprise, and all but annihilated them. A few ships managed to get under way, but most of these were severely crippled, and some were laid up on the beach to prevent them sinking. This engagement was announced in a Navy Department communique of May 7th announcing "the sinking or damaging of 12 Japanese vessels and destruction of six Japanese aircraft; our entire losses amounted to three aircraft." The following day a large four-engined flying boat was intercepted by our forces and shot down.

(6) On May 7, Rear-Admiral Fletcher's aircraft struck the main body of the Japanese force in the Louisiade Archipelago, off Misima. The new Japanese aircraft carrier, RYKOKU, and a heavy cruiser, were sunk. Fifteen bomb hits and 10 torpedo hits were reported on the

RYKOKU, which was turning into the wind to launch her aircraft when she was thus blasted. She sank in a few minutes, with most of her planes on board. The enemy counter-attack which followed was fought off successfully. During this day's fighting, more than 25 enemy aircraft were shot down, compared with our loss of six. Shore-based Army aircraft from Australia assisted the reconnaissance, both before and during the attacks, and added their fire to that of the attacking Naval planes. Eventually, during the afternoon of May 7th, Japanese aircraft located and bombed the accompanying destroyers in the Coral Sea. The U.S. destroyer, SIMS, sunk during the attack, and the tender, NEOSHO, sank several days later as a result of damage. A large part of the personnel of NEOSHO and SIMS were rescued, and reached port.

(7) On May 8th the same task force again carried out an attack on the enemy, and succeeded in inflicting serious damage on a second Japanese carrier, the SHOKAKU, which was left ablaze as a result of bomb and torpedo hits.

(8) During the same engagement, the enemy launched a counter-attack with aircraft while our planes were still attacking. The principal target was the U.S. aircraft carrier, LEXINGTON, which was hit by two torpedoes and by at least two bombs, and further damaged by several near-misses. These attacks were the last action in the Battle of the Coral Sea. Several hours after the battle, while proceeding at 20 knots, a terrific explosion — probably caused by the ignition of petrol fumes from fractured pipe lines in the tank compartments — rocked LEXINGTON and set her afire in many parts. Attempts to cope with this were fruitless, and finally the order

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This company's tugs have had many large ships to manoeuvre in the port of Sydney, including "Queen Mary" and "Queen Elizabeth" during the war years.

J. Fenwick & Co. Pty. Ltd. is wholly owned by Fenwick Holdings Ltd., a public company owned and operated by Australians. Their fleet of eight tugs service the ports of Sydney, Newcastle, Wollongong and Botany Bay.

Fenwick & Co. have been contractors to the Admiralty since 1890. When the first American fleet (the White Fleet) visited Australia in 1908, the Fenwick line had already been operating for nearly 40 years. During World War I, two of the company's tugs saw active service while in the last war the powerful steam tug "Heros" was in anti-submarine service.

Mr. Douglas Fenwick (pictured) is the fourth generation member of the family to hold office in the company.

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"Abandon ship" was given.

(9) Ninety-two per cent. of the ship's company were rescued, after which the ship sank.

(10) The attack on Salamaua and Lae and the Battle of the Coral Sea resulted in the destruction of two Japanese attempts to advance south-east of New Guinea, and cost them one aircraft carrier, three heavy cruisers, one light cruiser, two destroyers, several transports and small vessels. It also cost them severe damage to and probable sinking of one additional cruiser and one destroyer, and also severe damage to more than 20 ships, including one aircraft carrier, three cruisers, two aircraft tenders, and three destroyers.

That ends the U.S. official communique.

### Australian Ships In Battle

(11) While these engagements were taking place in the Eastern area, an Allied squadron, under the command of the Rear-Admiral Commanding the Australian Squadron (Rear-Admiral J. G. Grace, C.B.), and including the Australian cruisers AUSTRALIA (Flag) and HOBART, was operating in the Western area of the Coral Sea, covering any possible enemy attack on Port Moresby. This force successfully withstood, without damage or loss of personnel, an attack by enemy aircraft on the afternoon of May 7th. The attack, which consisted of both torpedo attacks and high-level bombing, was delivered by eight Japanese twin-engined torpedo bombers, and 19 heavy bombers. The Allied force, which was without fighter protection, won the day through brilliant evasive action and the intensity and accuracy of the anti-aircraft barrage. Three of the enemy machines were shot down.

### Ship's History—

## U.S.S. "CORAL SEA" (CVA-43)

The U.S.S. CORAL SEA was named in commemoration of the Battle of the Coral Sea, which took place 4th-8th May, 1942. This battle was unique in naval history in that it was the first major sea battle in which the damage was done solely by opposing aircraft carrier planes.

CORAL SEA was the last of what was described as the "battle carriers" constructed during World War II. The name battle referred to a carrier's heavy class, and with the introduction of jets into the fleet, carriers of this class were renamed "attack" in 1952.

This attack carrier is the third United States ship to be named CORAL SEA. The first was an escort carrier, later renamed U.S.S. ANZIO.

The second CORAL SEA (CVB-42) — started in 1943 — is now the U.S.S. FRANKLIN D. ROOSEVELT, renamed in honour of the President after his death.

The name was then given to the last of the battle carriers under construction at Newport News, Virginia, to-day's CORAL SEA. Launched in April, 1946, CORAL SEA's first commanding officer was Captain Aaron P. Storrs, III.

The first take-off from CORAL

SEA's flight deck was made on December 11, 1947. Since then, the ship has recorded over 112,000 aircraft landings — the second highest achieved aboard any carrier in the United States Navy.

The big flat-top served in the Atlantic for 10 years, deploying with the U.S. Sixth Fleet seven times. Then, in April, 1957, she was decommissioned at Bremerton, Washington, to begin an extensive conversion programme.

CORAL SEA was recommissioned in January, 1960, after 33 months of work. Many of the modifications made in drydock included new developments made since the Korean War. One of the major changes involved the flight deck, where the canted runway was added and new and more powerful steam catapults and arresting gear were installed.

After a goodwill visit to Vancouver, B.C., CORAL SEA operated off the coast of California. Then, in September, 1960, she deployed on her first tour of duty with the U.S. Seventh Fleet in the Far East.

She has since made another cruise in the Western Pacific, visiting such ports as Yokosuka and Kobe, Japan; Subic Bay in the Philippines, and the British Crown Colony of Hong Kong.

### OUR COVER . . .

The cover this issue depicts U.S.S. CORAL SEA en route to Australia.

(U.S. Navy photograph).



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## 20,000th DECK LANDING ON R.A.N. CARRIER

Navy air crews of the Fleet Air Arm have set another milestone in an outstanding record of flying from the Royal Australian Navy flagship, H.M.A.S. MELBOURNE.

The Minister for the Navy, Senator Gorton, said that H.M.A.S. MELBOURNE had just reported her 20,000th deck landing. Senator Gorton said the feature of this record was that not a single injury or fatality had resulted from any one of the 20,000 deck landings in the eight years of H.M.A.S. MELBOURNE'S career. About 25 per cent. of the landings were made at night.

The flagship is at present operating with five other R.A.N. warships in South East Asia. The 20,000th landing was made by a Gannet anti-submarine aircraft flown by Lieut. Ryland E. Gill, of Perth. Other crew members were two observers — Lieut. Arthur E. Johnson, of Bowen, Queensland, and Lieut. Alistair G. Davies-Graham, of Richmond, Tasmania.

Champagne was waiting for the air crew when the Gannet taxied to a stop on the angled flight deck.

Towards the end of last year MELBOURNE reached another milestone when she recorded her 10,000th catapult launching.

"Front-line" squadrons of Venom jet fighters and Gannet anti-submarine aircraft operate from the Australian carrier.

H.M.A.S. MELBOURNE is under the command of Captain R. I. Peek, O.B.E., D.S.C., and is at present flying the flag of the Flag Officer Commanding the Australian Fleet, Rear-Admiral Alan McNicoll, C.B.E., G.M.

## ANTI-SUBMARINE WARFARE

Address by Vice-Admiral J. S. THACH, U.S. Navy, Commander Anti-Submarine Warfare Force, Pacific, to the Cadet Midshipmen of the Royal Australian Naval College

I am honored to be here this morning, and quite relieved. With 40 years in the U.S. Navy and with something less than that left to go, I had begun to despair of ever getting down to see your wonderful country. So I count this, my first visit, as a rare treat and opportunity. I had, many years ago, gotten a distant glimpse of your north-eastern shores from my plane, but, like Moses, I never quite made it to the promised land. So let me repeat for the record:

It strikes me that there ought to be some proper way in which we could celebrate the coming of age of Australian-American co-operation, which began in earnest just 21 years ago. It started, very hastily as I recall it, in the closing days of 1941, and arrived at its finest hour six months later, with our victory in the Coral Sea in May of 1942. It was a glorious victory — a stunning victory, but not without its price — for you. It stopped Admiral Yamamoto's invasion plans, to be sure, but alas, not even the good Lord Himself could save you from the Americans. I understand the ransom finally came to a matter of several thousand brides and unlimited rights to sing, play, hum, and otherwise butcher that great Australian epic, *Waltzing Matilda*.

I, for one, am delighted to note that our close association has continued to this moment, strengthened not only by such formal ties as the ANZUS and SEATO agreements, but by a steady and solid growth of understanding and genuine goodwill.

So I greet you this morning as my country's warm friends and staunch allies, with my hearty wish that you ever remain so.

I come here as well to acknowledge a debt owed in a special sense to your college. For the past year I have been privileged to have the services of one of the fine officers of your Navy, Lieut.-Cdr. Ike Wilson, who was a member of the Philip Year which entered the R.A.N.C. at Flinders in 1945. Since reporting to me, he has kept himself busy with the complex problems of control of shipping with which my staff must deal. In addition, he has proven to be a valuable channel of communication. It is rumoured that he has established himself as the Hawaiian area Recruiting Officer for the Royal Australian Navy. I consider his appointment to my staff a symbol of our common interests in getting an important job done. It is a job which will become more important with each passing year, because it vitally affects our continued ability to keep open the sea highways that join us to each other, and to our friends of the free world.

Our two nations are alike in many things. We share a great heritage of law and language and custom. Each of us is geographically remote from the world's central block of land and people and power — separated from it — and from each other — by thousands of miles of blue water. We are bounded by enormous lengths of coastline, and we have heavily concentrated our population and in-

dustries in our coastal areas. Shipping and foreign trade are important to us, and we are dependent upon certain key imports and exports which are essential to our economies and which grow more demanding every year.

For example, there are 77 strategic raw materials which my country requires for its economic well-being. We are self-sufficient in only 11 of these materials, and I imagine that the Aussie aircraft which transported me here to-day was basically dependent on fuel brought to this country via the sea. Although I understand that you have great hopes for your recent oil discoveries.

However, I believe your graziers would be rather unhappy if they suddenly found that there was no shipping available to export this year's wool clip.

We are, both of us, maritime nations with a great and abiding interest in the sea, and in the great ships that sail it. Whatever affects the free passage of ships on the oceans of the world affects us, directly or remotely. No threat to shipping is too small to deserve our attention. For the truth is simply that these patient, plodding ships that serve us carry 99 per cent. of all the goods that move in our overseas commerce, and that is quite enough to make their defence, in the words of our Chief of Naval Operations, Admiral Anderson, "the most crucial task of the United States to-day." I am sure Admiral Harrington has similar convictions about the mission of your Navy as well.

We must use the sea. We must keep it free, and we must



be prepared to meet and defeat the most devious means a resourceful enemy can think of to exclude us from areas where we have a proper business to be.

We have too long taken for granted the doctrine of the freedom of the sea. You know, it is not a natural condition, and no divine authority guarantees the sea's continued use to us. In reality, the sea is free only because free men have chosen to make it so, and it will remain free only so long as free men

have the strength and resolution to resist those who would have it otherwise.

I'm not talking about a threat that may some day present itself as part of a general war in some distant, hazy future; I speak of a clear and present danger — one that is with us now, and has been for several years gone by. Look around at what has been happening to the free nations of the world since you were born.

How is it that the Communists are able to extend their control without the expense and trouble of a major war? They do it by pressure — by steady, relentless pressure, by wedging and probing, by filling up the empty spaces and engulfing those that are weakly held — but always keeping up that subtle, continuous, unyielding pressure — until the free nations get tired or discouraged, and yield the issue.

Up to now this tactic has been most noticeable on land, where the Communists have had the advantage of contiguous boundaries, large numbers of expendable troops and the opportunity to practice the guerrilla warfare in which they excel. But I can tell you, it is also happening at sea, although it usually goes unnoticed until some spectacular incident reminds us of it. But the pressure is there, just as it is on land.

The Soviet Union has, in defiance of the historic three-mile convention, claimed sea areas out to 12 miles from its shores as territorial waters. The Sea of Okhotsk — one half million square miles of the Pacific Ocean — has been closed for years by nothing more legally substantial than Soviet edict; and ships using the Gulf of Bothnia and the northern half of the Black Sea are left in no doubt of the Soviet proprietary interest in those areas. American aircraft have been shot down over the open ocean.

The Chinese Communists have just issued another of their so-called "serious warnings" against free world ships transiting the China Seas. I believe they envisage this as a congealing process, like a lake freezing up in winter, first around the shores, then steadily extending toward

the centre, till at last the entire surface is frozen solid.

1. for one, expect no let-up in this Communist campaign to freeze us out of an ever-widening proportion of the world's sea areas. It is too much to imagine that they some day seek to exclude free world ships from the Yellow Sea, the Sea of Japan, or, say the Java Sea? I think not.

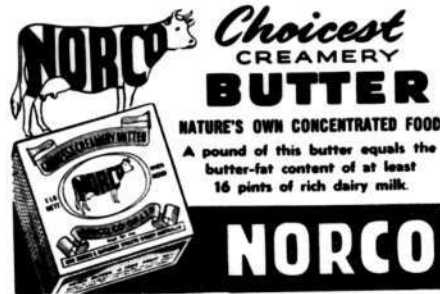
We are living in strange times, and there is not the clear, sharp boundary between peace and war that existed when I was your age, and I believe it will grow even fuzzier and more ill-defined than it now is. The threshold of provocation to general nuclear war gets higher each year, and indeed it is the policy of every civilised nation to prevent it altogether. However, we can still expect no end of mischief in the areas of cold and

limited war, and we must be prepared to defend ourselves against—

1. Harassment of shipping and naval forces;
2. A strong and concentrated bid to control such vital areas as the approaches to the Suez and Panama Canals, and the Strait of Malacca;
3. More illegal claims of exclusive right to open sea areas; and
4. Perhaps the outright sinking of ships by "unidentified" forces.

In short, the maritime nations of the world stand to be attacked at their most vital point: the sea routes which bind them together and we would do well to accustom ourselves to the thought that some very rough water lies ahead.

The Soviet Far Eastern Sub-



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Officers of the Royal Australian Navy and the Royal Australian Air Force confer with U.S. Navy anti-submarine authority, Vice Admiral John S. Thach at the Australian Joint Anti-Submarine School at H.M.A.S. ALBATROSS.



marine Force to-day counts just about twice the number of submarines with which Germany entered World War II. It is the largest submarine force ever to operate in the Pacific in peacetime, this being about one-fourth of their total submarine strength.

Moreover, the Soviet Union has placed over 20 of its submarines at the disposal of the Chinese Communist regime. This action and the arrangements for placing Soviet-built submarines in so-called neutral countries has set the stage for use of submarines

in limited wars. These submarines could be used covertly in such a manner that it would be hard to prove their actual nationality. The majority of these subs. are the long-range, offensively-armed Whiskey class, and are designed for one mission. Primarily, the sinking or interruption of shipping of nations dependent upon the sea — and this includes Australia, New Zealand, and the United States.

It seems obvious! The free nations of the world are dependent upon the sea; our enemies are not, to any great degree. The free nations are pre-eminent in naval power on the surface of the sea, and above it. The Soviet Union, as a land-locked nation with little dependence on the seas, has taken the natural course: it has directed its limited resources into the submarine, a weapons system which has great potential for

denying our use of the seas; you will recall that the Germans began the Second World War with 57 submarines, and during the course of it built 1000 more. They never had more than 325 operational at any one time, but they sank nearly 3000 allied merchantmen, amounting to a total of over 14,000,000 tons!

In many ways, the submarine takes the art of the guerilla to sea. The same features prevail: stealth and concealment; ambush and evasion; anonymity and ambiguity; initiative and surprise. It is a made-to-order instrument for an enemy which has traditionally sought its victories at limited commitment and cost.

And every advance in technology seems to add to the submarine's natural advantage. The World War II submarine was eventually defeated, although at tremendous effort — because it was short-winded and slow.

The snorkel-equipped boats of

the Soviet post-war submarine fleet are a significant advance over the older models, and the nuclear-powered boats which are now coming out of the yards represent a quantum jump in both speed and underwater endurance. This has complicated our problem of detection, classification, and localisation—which were difficult enough even with the old adversary. Add to this a stand-off capability for the submarine — the ability to fire a missile 100 miles or so — and you have a challenge well worth your best efforts.

I do not mean to imply that the problem is insurmountable; we have made some very great advances over the past decade in both the tactical and technical approaches to anti-submarine warfare, and we shall go on making more.

The fact is, this is a fascinating business. There is scarcely any segment of the United States Navy that does not have some

role to play against enemy submarines. Our attack carrier striking forces would destroy their building yards and operating bases and the tenders which support them; our aircraft, surface ship and submarine ASW forces would destroy them in the narrow straits they must transit on the way to their patrol areas; our Hunter-Killer Groups would seek them out in their own hunting grounds. When we need it, we have an enormous amount of power we can bring to bear on this particular task of our naval forces.

Meanwhile, we are searching for improvements — more effective hardware, and better ways of using it. We have continued to improve the range and definition of our sonar, both active and passive, and we have not given up looking for a window in the electromagnetic

(Continued on page 27)

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## SUBMARINE VOLUNTEERS SAIL IN "ORION"



The last voyage of the ORION maintained her trooping tradition as she carried the first volunteers for the new Australian submarines.

Left: Captain Harris (ORION) with some of the volunteers and their wives.



Other volunteers who also sailed in the ORION receive their "Australia" flashes at H.M.A.S. PENGUIN prior to embarkation.

## LAST VOYAGE OF "ORION"

The well-known and popular P. & O. Orient liner "Orion" (24,000 tons) is on her way home to Britain, after having made her last voyage to Australia.

"Orion" was launched in unique fashion in 1934 by the Duke of Gloucester. His Royal Highness was visiting Brisbane during the course of a tour of Australia, and, at a gathering in the Brisbane City Hall on 7th December, 1934, he named the new ship "Orion". With the words, "Good fortune attend you always and those whom you bear across the world to their brothers overseas," the Duke pressed a wireless key, which actuated the launching apparatus at Barrow-in-Furness, England, thus releasing the ship.

"Orion" takes her name from a brilliant group of stars — the constellation Orion — probably

the best-known to people of both hemispheres, and certainly among the most beautiful in the heavens.

The ship was the first Orient liner to have the now familiar golden-buff hull. She set a new pattern in ship design, not only externally, with her single graceful funnel and mast, but also inside, where the simple decor and thoughtful arrangement of spacious public rooms and cabins aroused much favourable comment. She was the first ship on the Britain-Australia run to have public rooms designed by an interior designer and decorator.

"Orion" arrived in Australia on her maiden voyage late in October, 1935, and, until the outbreak of war in 1939, regularly engaged in the service between Britain and Australia, interspersed with pleasure cruises.

In September, 1939, the ship was requisitioned as a troop transport, and served in this capacity until April, 1946. During this time, her wanderings were world-wide. "Orion's" first war service was to rush reinforcements from the United Kingdom to Egypt; after the Mediterranean became closed to our shipping, the voyage to Egypt and India had to be made via the Cape of Good Hope.

In November, 1942, "Orion", carrying 5300 troops, was present at the North African landings, and during her stay in Algiers came under heavy air attack, but was undamaged. On her next voyage to North Africa, she was again attacked, unsuccessfully, from the air on both her outward and homeward passages. During 1943, "Orion" took part in the Battle of the Atlantic, ferrying U.S. forces to England, carrying over 7000

troops each voyage. Late in the same year, whilst on passage to Port Said, the ship was subjected to two massed attacks from the air, the first by 30 planes using glider bombs, and the second in which 12 dive bombers made four near-misses. Fortunately, no damage resulted from either attack.

"Orion's" war service took her over 380,000 miles. She carried more than 175,000 troops, civilians and prisoners of war. On completion of her service as a troopship, she was refitted in 1946 as a passenger vessel at Vicker's-Armstrong's yard at Barrow-in-Furness, where she was built. Her conversion took nearly nine months, and cost almost two-thirds as much as she cost to build.

In 1947, on her first post-war outward voyage to Australia, "Orion" carried a rare and precious cargo — the bones of Buddha's Disciple. In a golden casket, the relics were carried from London (where they had rested in the British Museum) to Colombo, en route to India. A High Priest of Buddha met the ship and received the relics; in an impressive ceremony, he blessed the ship, praying that she would always have good weather.

On her final homeward voyage, the ship will fly a paying-off pennant 84 feet in length. This represents half a fathom for each year of the ship's life (paying off pennants are usually one fathom for each year, but because "Orion" has only one mast, the length has been shortened for convenience).

"Orion" is commanded by Captain E. V. Harris, R.D., R.N.R., who joined the Orient Line in July, 1939.

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## THE IMPORTANCE OF SEAPOWER IN NUCLEAR AGE

An Address by Rear-Admiral G. G. O. GATACRE, C.B.E., D.S.O., D.S.C.,

Flag Officer in Charge, East Australia Area

*It is a clear reminder of the might of seapower that in two World Wars Germany couldn't cross the 20-mile width of the English Channel, yet forces from all parts of the British Commonwealth and Allies were safely deployed by sea, and supported by sea, in whatever theatre they were needed. Neither now, nor in the foreseeable future, is there any possibility of bringing armed forces to bear in a war thousands of miles from their sources of supply, without supremacy on the sea.*

*Will all that is now transported by ships ever be carried by air? Emphatically no! Here's a comparison made in U.S.A. of the comparative effort and time involved in deploying by sea and by air 10,000 tons a distance of 8000 miles.*

By sea — one Mariner-type ship in 22 days; the ship would be only 1% of the available military sea lift capability.

By air — four round trips by each of 122 large cargo-carrying aircraft; the aircraft would use five ships' tanker loads of fuel; the deployment would take 24 days. The aircraft would represent nearly all of the overseas military air lift capability.

This consideration deals with only 10,000 tons, but even during a limited war such as in Korea in early 1950's, U.S. ships transported to Korea 54 million tons of dry cargo and 22 million tons of petroleum products! Five million personnel also were transported by U.S. ships to, from and within

the Korean theatre. Quite obviously the task could have been done *only by sea transport*, and sea transport in war can operate only under the umbrella of dominant seapower.

**TAKE A BOEING 707:** It carries 52 tons fuel; it has a payload of 14 tons. It requires 650 tons of black oil to produce the 52 tons of fuel carried by a 707.

So, every time a 707 takes off from Mascot, 650 tons black oil must be delivered by sea to Kurnell refinery next door — and the aircraft is carrying a payload of only 14 tons!

The cost — bulk transport by sea, by rail and by air is in the ratio 1 : 10 : 100.

Without question, *ocean shipping* is still the only means of maintaining the material flow and volume necessary to mutual support between nations — the only means of handling the bulk and volume of essential trade and military cargoes. *The strength of the free world depends upon uninterrupted use of sea communications between its member parts.* Such freedom of the seas is gained and kept by sea-power. Without sea-power to keep secure, the sea communications, Australia would be unable to give or receive assistance in time of war, unable to contribute anything to the Free World Alliance. We would become a liability in an alliance which cannot afford liabilities.

*Modern sea-power* is a combination of mobile air-power (aircraft carriers), of mobile land

power (marines and commandos), of amphibious lift and seaborne logistics.

*Naval forces are economical.* A naval force operating in the Mediterranean one month, can be found off Korea the next, in the South China Sea a few days later, and be back in the Mediterranean two weeks after that — *all with the one initial cost!* Naval forces can, in a few hours or days, establish in an area such power as would take months to develop on land.

Naval forces are the essence of the concept of *employable power*; they operate on the seas and oceans, which are international highways, not subject to foreign approval, or requiring local foreign friendship, as do forces operating from a shore base located on foreign soil.

A naval force can exert any desired amount of military power from a threat to a full-scale attack with nuclear weapons — the same force; its versatility is unequalled.

Naval forces offer *unlimited mobility* — mobility of weapon systems and bases. In the so-called Cold War, which is a feature of our present uneasy time, navies have the mobility, the flexibility and the range of capabilities which make them highly effective instruments of military power and foreign policy.

*So, looking into the future,* we can agree with Field-Marshal Lord Montgomery, who said:—

"If navies lose control of the seas, the Western Alliance will have to go out of



business. . . . The last (Second World) war was, in essence, a struggle for the control of sea communications, and until we won that struggle we were unable to proceed with our plans to win the war. *It will*

*be the same in a future war."*  
And statements by Russian Service leaders are of the same sense:—  
General Zukhov (1956):  
"In a future war the struggle at sea will be of immeasurably

greater importance than it was in the last war."  
Admiral Andreev:  
For the imperialistic states the very possibility of conducting war depends upon the support of uninterrupted sea and ocean communication."

Following this opening part of his lecture, the Admiral went on to talk on a number of Defence matters, such as: deterrent, missile gap, the need for conventional forces, the future of manned aircraft, nuclear propulsion in ships and aircraft, airborne alert, oceanography, etc., and of a number of modern weapons and equipments, such as: I.C.B.M., Polaris, warning of missile attack by B.M.E.W.S. and satellites, commando carriers, nuclear-powered aircraft carrier, cruiser, frigate, submarines, merchantship, anti-submarine warfare, Nike Zeus anti-missile-missile, etc.

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THE NAVY

# MACQUARIE ISLAND EXPEDITION

The following was written by Sea Cadet Petty Officer David Parkinson, a member of the Darwin Sea Cadet Unit, T.S. Warramunga, who recently visited the Antarctic in the *Thala Dan*.

During the afternoon of Friday, November 30, I boarded M.V. *THALA DAN* and met the other lads who, together with myself, had been given the opportunity to take part in this adventure.

M.V. *THALA DAN* was underway in the mid-afternoon, and during the night we cleared the Heads of Port Phillip Bay, with Bass Strait before us.

Our destination was Macquarie Island, 1400 miles south, and our expected time of arrival, December 4.

As supernumeraries, we had as our leader Colonel Black (ret.), who saw that we had every opportunity of taking part in various activities and finding out what really takes place on an expedition of this type.

On the trip south, members of the relief party explained how the work they would carry out, and the observations they would make, would enable weather patterns to be established.

The radar technician and meteorologist explained how, by the use of balloons fitted with aneroid barometers and small radio transmitters, they were able to receive information about the upper atmosphere.

Radar tracking produced information about wind direction and velocity.

This information is co-related at the International Antarctic Analysis Centre in Melbourne.

Cliff Sims, the other Sea Cadet, (who is from Tasmania) and I spliced several ropes when we were helping with the assembly of the pontoon on the cover of No. 3 hold on the Tuesday morning before arrival at Macquarie Island.

With these ropes we helped the men secure the decking to the pontoon.

With everything in readiness for taking supplies ashore on the pontoon, we rested in the cabin until afternoon, and then helped Sergeant Kelly and his men with the preparation of the dukws for the landing that night.

At 1930 hours we sighted Macquarie Island and the surrounding rocks.

### "SMALL MOUNTAIN RANGE"

When I first saw the island on the morning of Wednesday, December 5, it looked like one of the small mountain ranges in Central Australia with the tussock grass from a distance resembling the spinifex grass of "The Centre".

Being the first Cadet ashore, I was able to look around before the Colonel and the other boys came ashore.

Mr. Jones, the expedition leader, introduced me to Mr. Peterson, the 1962 O.I.C., and several others waiting to meet members of the relief party.

The Colonel and the other boys were on the first dukw load of supplies.

Cliff Sims and Warwick Teasdale went with the carpenter to help dig the foundation for the new generator hut.

The rest of us assisted in the unloading of the main unloading area.

After lunch aboard, I came ashore and helped with the hut foundations.

Our efforts at digging the holes with a jack-hammer brought forth results, but the carpenter had a hard job finding sand to make cement.

At the end of the day, the foundations were excavated, and the building's position was marked out with string.

From Wireless Hill we were able to take some photos of the base and some of the penguins while waiting for the Colonel to come ashore on the morning of Thursday, December 6.

Making our way along the beach with the Colonel towards the Nuggets, we saw hundreds of seals and penguins, and an enormous elephant seal.

We passed a small stream trickling down from the mountains above.

Because of the high winds and heavy seas, the dukws could not work that afternoon, and we stayed aboard.

December 7 saw David Harrod off shooting rabbits with Dr. Duncan. Dr. Duncan had to collect samples of rabbit blood for testing in Hobart.

Cliff Sims accompanied a lady doctor to collect samples of peat, a type of fossil.

Colonel Black, Warwick Teasdale, Barry Donahue and I climbed the plateau.



After an hour-and-a-half of climbing we sighted Lake Scoble.

We were unable to get very close to the lake because of a fog which came up and obscured the upper area of the plateau.

With the fog came a strong wind which carried to us the sound of hundreds of penguins from the rookery at the Nuggets.

#### THOUSANDS OF PENGUINS

We were amused at the way in which the trail was marked with sheep and cows' heads on stakes about every fifty yards.

The ground was very soggy, and moss grew in large patches.

During our walk we came cross the source of the small stream we had seen from the beach the day before.

As we ascended the slopes through the lush vegetation the sound of the penguins became louder.

On the beach we worked our way past many seals and through the rocks until, on rounding a small point, we came upon the penguins.

There were thousands of penguins for about a mile along the beach, and in places up the side of the mountain.

After watching the penguins we returned along the beach to the landing point, and I felt quite tired after our long hike.

That afternoon, back on board, I slept very well.

For a couple of hours in the morning on Saturday, December 8, I helped load supplies into slings for the dukws to take ashore. While I was below, a dukw with Mr. Elwood aboard went close inshore and fired a rocket line to the shore.

This light line was fixed to a heavy line, which was in turn fixed to the rubber hose used for transferring fuel oil from

ship to shore.

The dukw was loaded for the trip to Green Gorge at 0915.

At Green Gorge there is a hut fitted with supplies and radio gear.

The dukw was followed by the ship's motor cutter, which carried several of the lads, including myself as well as crew members and others.

David, Warwick and I had to sit for'ard in the tiny cabin. David and I felt sick, so we moved out near the engine. Cliff, the other Sea Cadet, had a turn at the wheel as the waves and spray crashed over us.

At Green Gorge we transferred to the dukw, as the cutter's skipper did not want to come in close.

Mr. Jones said we would spend about half an hour ashore, so, with the Colonel, we walked along the beach for a look around.

As the cutter was having engine trouble, we all returned in the dukw.

Because the dukw had less freeboard, the waves broke right over the side, and I think the driver was the only dry one aboard.

One of the lady biologists collected plankton in a drag-net during the trip.

Several more penguin rookeries and some waterfalls were sighted along the coastline.

#### BOUND FOR MELBOURNE

Green Gorge is roughly halfway down the eastern coast of Macquarie Island.

We came alongside the THALA DAN, and, as the weather had deteriorated, we stayed aboard, and unloading operations came to a standstill.

Barry Donahue and I accompanied Dr. Ashton, the botanist, to collect grass samples on December 9.

Instead of "throwing the hat" he "threw the rule" to mark the spot where samples would be collected.

Within a square made of conduit, the samples were cut, and, at the same time, a sketch was made of the area within the square.

We helped cut every blade of grass within three such squares, and when we returned to the ship for lunch Dr. Ashton remained to finish off two more.

During the afternoons, Warwick, Cliff, David Harrod and I climbed Wireless Hill and came across many penguins' nests and the slippery tracks they used to slide down to the bottom of the hill.

On the morning of December 10, David Ellis, David Harrod and I volunteered to assist Dr. Cook and help him clean up the operating theatre and the adjoining room.

I helped clean sterilisers, stomach pumps and some things I didn't even know the names of.

The afternoon was taken up with a round trip of the island to drop off supplies at various points.

The first stop was Bauer Bay.

The one dukw aboard was to be used to land the supplies, but, as it was being lifted from the deck, one of the ropes came loose.

There was a fair swell at the time, and considerable damage was done to the dukw before it was safely lowered back to the deck.

The three crew members had to hold tight during the swinging around, and I think they were probably pleased to be back on deck at the finish. Because of the damage to the dukw, the round trip was cancelled.

At 1130 on Tuesday, December 11, we all went ashore for the change-over party.

Farewells were said at 1400, and we returned to the ship to have a last view of Macquarie Island.

With all dukws secured, and everyone aboard, we weighed anchor at 1615 — destination, Melbourne.

The sea became very rough during the early morning of Wednesday, and I spent most of the day in my bunk, feeling sick. To-day was also Cliff's birthday.

The trip home for most was uneventful, with pictures on Thursday night and a party on Friday night, from which we retired early. A whale was sighted in Bass Strait.

M.V. THALA DAN berthed at 0920 at No. 3, North Wharf, Melbourne.

During the last sixteen days I had travelled many miles by sea and had taken part in many different activities during a trip that was educational and adventurous.

Now, at the end of those sixteen days in the company of men who venture to the Antarctic and Sub-Antarctic, I feel

I can more fully appreciate all they do and what careful preparation and organisation goes into the work of A.N.A.R.E.

I hope that in years to come my chosen career might lead me back to be one of them, possibly with one of the other boys who made this trip with me.

I shall certainly remember the cold spray in my face during the humid days of Darwin's Wet.

## SEA CADET TIE AND NAVY LEAGUE CAR BADGE

The Navy League in Australia has received advice from the Navy League in the United Kingdom that, while there is no Navy League tie, there is a Sea Cadet tie which may be obtained direct from the makers, C. H. Munday Limited, 7 Irving Street, Leicester Square, London, W.C. 2, at 13/6 (Terylene); 11/6 (Rayon and Terylene); 10/6 (Rayon).

These are the prices in English sterling.

The advice also includes reference to Navy League car badges, obtainable by Divisions direct from the Headquarters of the Navy League in London at a cost of £2/2/- stg., plus postage.

Any Australian Sea Cadet desiring to obtain a tie should consult his commanding officer, with a view to obtaining a letter which would identify the Sea Cadet as an authorised applicant.

Payment accompanying any order to C. H. Munday Limited would need to be made by money order.

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## Natives Help Rescue Navy Fliers

A signal received at Navy Office in Canberra tells of the assistance provided by the native peoples when a Royal Australian Navy aircraft ditched near Manus Island recently.

A Gannet anti-submarine aircraft flying from the carrier, H.M.A.S. MELBOURNE, came down in 10 feet of water near the island of Palali, off the western tip of Manus Island.

The three members of the crew carried out the correct escape drill, and, much to the surprise of the natives, were quickly clambering from the aircraft.

The local people immediately went to the aid of the Australians, and helped them to get ashore. One of the crew, Lieutenant Ian Lawson, of Nowra, who had suffered a few minor cuts, was towed ashore in his dinghy. The islanders then set about treating his cuts and helping in the evacuation of the fliers.

While some natives assisted with the laying out of a ground signal to attract a searching helicopter, others climbed coconut trees to supply the air crew with refreshments.

The arrival of the Naval helicopter from H.M.A.S. MELBOURNE astonished the islanders, as did the technique of rescuing the stranded fliers by winching them up as the helicopter continued to hover overhead. All the male islanders insisted on shaking hands with their new-found friends before the helicopter rescue.

The Gannet ditched during routine flying operations while H.M.A.S. MELBOURNE was heading for duty in South East Asia.

## British Admiral In Charting Talks

Closer liaison between Australia and Britain in hydrographic surveying and the production of navigational charts has been the object of discussions in Sydney and Canberra.

The Hydrographer of the Royal Navy, Rear-Admiral E. G. Irving, C.B., O.B.E., attended the talks, together with the Admiralty's Chief Civil Hydrographic Officer, Mr. L. Pascoe. They had discussions with the Royal Australian Navy's Hydrographer, Captain A. H. Cooper, and with senior officers at Navy Office in Canberra.

The main purpose of the talks was to bring about closer co-ordination in the conduct of

surveys and the production of charts. In view of the importance of modern navigational charts, and the limited number of ships available for hydrographic surveys, it was essential to eliminate any duplication of effort.

Admiral Irving is responsible for the Royal Navy's charting throughout the world. The Royal Australian Navy has its own active hydrographic programme, which at present covers Australia and New Guinea.

The R.A.N. has four vessels involved in hydrographic work. A new survey ship, H.M.A.S. MORESBY, is under construction at the Newcastle State Dock-

## Navy Starts Anti-Submarine Helicopter Training

Australia's Fleet Air Arm began a new phase early in the New Year, when Navy air crews commenced the first R.A.N. course in the techniques of detecting and attacking submarines from helicopters.

During the training period, the air crews will be instructed by Australian officers who recently have completed special training in the United Kingdom. For the first part of the course the pilots, observers and sonar operators will concentrate on their own specialist training. The pilots will become familiar with flying the Wessex, the observers will do advanced work on anti-submarine tactics, while the sonar operators will study

the helicopters' detection devices.

The essential team work will be developed during the second stage of the course, when the pilots, observers and sonar operators serve together as crews in the "seek and kill" helicopters. During this period, they will actually operate against submarines.

The air crew are due to complete their training in the middle of the year, when they will form the R.A.N.'s first "front-line" anti-submarine helicopter unit. This squadron will begin flying from H.M.A.S. MELBOURNE later in the year.

The Navy is obtaining a total of 27 Westland Wessex anti-submarine helicopters.

(Continued from page 17)

spectrum that will let us see through sea water. Computer techniques look good to us as a means for classifying underwater sounds. And we are doing a lot of research work in that area. We have developed various ways of getting under thermal layers, including variable depth sonars.

In the field of weapons, our early attack rocket, ASROC, in both torpedo and depth bomb versions, has been operational in our fleet for several years. We are watching the development of your IKARA ASW system with great interest, and sincerely wish it every success. It is my firm conviction that the allied navies need the best and most versatile ASW arsenal possible. The development of weapons like IKARA will help ensure that we achieve a more effective kill capacity.

And this brings me back to the point from which I started this morning. It is that we can help each other greatly — and we must do so — if we are to meet the common threat that makes no distinction as to name, interest, population, or on which side of the equator we live. This is a threat which menaces all maritime nations equally, and one we must meet successfully or give way to an order of far less promise and potential, but one which grasped the essential meaning of the sea to those who live along its shores.

To you young men of Australia and New Zealand who will soon be prepared to man and fight in the ships of your fine Navy, I leave these thoughts:—

Anti-submarine warfare is a demanding, exacting, and sometimes frustrating task that requires the constant attention of dedicated men. Not only must we of the free world's navies be

concerned with ensuring our free use of all the seas, upon which our economies are so dependent — but we must also concern ourselves with the anti-submarine warfare problems attending so-called limited, local, or brush wars. The ability of the free world powers to project their military might wherever and whenever it is needed, and the ability to support and sustain these forces for as long as necessary depends on our allied anti-submarine warfare capability — and the importance of this allied naval capability is going to steadily increase. The impact of the remarkable Polaris system on the balance of power has been

profound. However, we must recognise that future Communist progress in this same field will undoubtedly provide them with a like capability — to assume anything less would be disastrous. When this point is reached, there will have occurred what is often referred to as a complete nuclear stalemate. Then the factor which will decide the balance of power will be our capacity to effectively reduce the enemy's capability to employ his submarine force. And so it may be that the free world's anti-submarine warfare capability will become the key to our very survival.

## EVACUATION BY NAVY HELICOPTER

One of the Navy's new anti-submarine helicopters was used recently to evacuate a group of three soldiers from rugged country in southern N.S.W.

One of the men had suspected appendicitis. Bad weather had closed the road, and evacuation by air was the only solution.

A Westland Wessex helicopter from the Naval Air Station at Nowra was assigned to the task. Piloted by the commanding officer of the new Wessex training squadron, Lieutenant-Commander B. Matthews, the helicopter flew through heavy rain squalls to make the evacuation.

The helicopter picked up a warrant officer and two gunners from the Army training area at Tianjarra, about 12 miles south of Nowra. One of the gunners had suspected appendicitis, and was taken to the Nowra Base Hospital.

The Navy's new Wessex anti-submarine helicopters are designed to operate in virtually all weather conditions.

## Australians Remain in "Britannia"

The Flag Officer Commanding the Royal Yacht has asked to retain the services of the Australian sailors who joined BRITANNIA for the Royal visit to Australia.

The Minister for the Navy, Senator Gorton, said that in view of the special request, arrangements had been made for six of the ten Australian ratings to remain temporarily in BRITANNIA.

They are now returning to Britain in the Royal yacht, which is due at Plymouth on 6th May. They will then serve on board BRITANNIA during the Queen Mother's forthcoming visit to the Channel Islands.

The Australian ratings will return home after the Channel Islands tour.

The Australian officer serving in BRITANNIA, Lieutenant Christopher Hole, of Adelaide, will remain in the Royal yacht until September.



# JANE'S FIGHTING SHIPS 1962-63

The following are extracts from a review of *Jane's Fighting Ships* which appeared in *The Navy*.

The Editor of *Jane's* was asked if he would like to make any further comments, and his article in reply follows these extracts.

## THE SMALLER NAVIES

Whilst interest naturally centres round the navies of what Mr. Blackman describes in his forewords as "The Three Big U's" (United Kingdom, United States and the Union of Soviet Socialist Republics) there are many important developments elsewhere.

In Europe the rapid expansion of the West German Navy is exemplified in its projected guided-missile destroyers and new fast anti-submarine frigates, whilst the Italian Navy, the first outside the United States to have a guided-missile cruiser in commission, also has a number of new and interesting types. Further afield we may note that the Indonesian Navy is expanding fast and in numbers at least could now match the very small naval component of the British Joint Task Force sent to quell the recent revolt in Brunei. Japan is also enlarging her Navy, and a programme of submarine construction is projected. Lastly, the youthful Navy of Ghana has ordered two corvettes of 500 tons, the design of which is a most interesting example of a modern, inexpensive and quickly-built anti-submarine vessel.

## THE SOVIET NAVY

Turning now to the first of the Big U's, the tremendous mis-

sile capability of both surface ships and submarines and the several types of nuclear-powered submarines are developments of major strategic significance in the Soviet Navy. Of special importance is the fitting of surface-to-surface missiles in both destroyers and small craft of the motor torpedo boat type, and in this respect the U.S.S.R. would appear to be leading the field over its rivals in the big league. *Jane's* lists a total of some 465 Soviet submarines of all types, of which between 350 and 400 are believed to be effective sea-going units. Recalling the Russian boast that nuclear rocket submarines are now the main striking force of the Soviet Fleet, the Editor adds significantly that "information which has reached this annual indicates that more than 12 nuclear submarines are operating and on station, and five or six are expected to be completed every year". All this raises complex and fascinating questions in the mind of the naval strategist: how are these great numbers of submarines disposed round the coasts of the Soviet land mass? How well-trained are their crews, and what would be the strategy and tactics of their employment in a future maritime war? Do the Russians possess their own submarine-borne deterrent, patrolling the Atlantic depths with missile target systems locked in to the major cities of the North American continent? At present we do not know, and probably we shall never know the answers to these questions, but one thing is certain: the Russians are becoming more and more conscious of the importance of sea power and of the threat to their

security posed by the Polaris submarines of the United States, and this new maritime awareness is reflected in the expansion of both their navy and their merchant fleet and in the worldwide deployment of their fishing trawlers, the activities of which now so often figure in the newspapers of the Western Powers.

## THE UNITED STATES NAVY

The most striking feature of this year's *Jane's* is, of course, the tremendous application of nuclear-power to warships of every category, from the mammoth aircraft carrier *Enterprise* of 85,800 tons (the largest warship ever built), the cruiser *Long Beach* and the frigate *Bainbridge* (7,600 tons) to the astonishing total of no less than 27 submarines. The revolution in naval operating logistics which the advent of nuclear-power has brought about is shown by the enormous endurance of ships driven by this method; the *Bainbridge* can steam 150,000 miles continuously at full power, or more than 400,000 miles continuously at 20 knots. Nevertheless, whilst a nuclear-powered Navy may have no problems of fuel replenishment, ammunition, provisions and stores will still be needed at regular intervals, and relief crews would be necessary if these endurance figures were ever to be put to their full test in sea-going operations. At present, it does seem as if the advantages of nuclear-power for surface warships are marginal, when viewed against the very high capital cost of this method of propulsion.

Of topical interest to us in Britain at this moment when

the sudden demise of the Skybolt missile has become headline news in the United States' programme of nuclear-powered fleet ballistic missile submarine (SSBN) construction. A total of 41 of these submarines is planned; of these, 12 will be of an advanced design capable of firing the latest A-3 Polaris weapon, and requested in the 1963 and projected 1964 Fiscal programmes; 19 will be of the "Lafayette" class of 7,000 tons with 16 A-3 Polaris missiles; five are "Ethan Washington" class of 5,600 tons armed with 16 A-1 Polaris missiles. British taxpayers will note with apprehension that each of the "Lafayette" class will cost some £40 million; a modest British Polaris deterrent of eight smaller nuclear boats each armed with eight Polaris missiles would represent a construction programme totalling some £200 million. This is the price of Britain retaining

an "independent" nuclear deterrent.

For the rest, we may conclude this review of the American Navy with one final observation. The submarine-borne deterrent apart, the sea-power of the United States is deployed to further the aims of its foreign policy in the unending struggle of the Cold War. Three huge fleets, each entirely self-sufficient and each capable of either a major carrier-borne aircraft strike, or a full-scale amphibious landing operation, face the Communist heartlands, the Seventh Fleet in the China Sea, the Sixth in the Mediterranean, and the Second in the Atlantic. But not even this mammoth navy has sufficient resources to cover as well the ominous gap in the Western defence line, the military power vacuum which currently stretches from Suez to Singapore.

## THE UNITED KINGDOM

And so we come to the last of the "Three Big U's", our own Royal Navy, and to Mr. Blackman's pungent comments on our naval affairs. Two quotations will serve to illustrate the burden of his argument; by a strange coincidence the events of the past few weeks since they were published have added to their urgency and topicality.

After noting that the Royal Navy's former role of world policeman has now been largely assumed by the U.S. Navy, the Editor adds that "we still have responsibilities and commitments East of Suez and further afield. But the thin grey line of British warships around the world is now stretched to breaking point, as events in recent years have proved." A few days later the revolt in Brunei underlined the truth of these remarks.



The object of the Navy League in Australia, like its older counterpart, the Navy League in Britain, is to insist by all means at its disposal upon the vital importance of Sea Power to the British Commonwealth of Nations. The League sponsors the Australian Sea Cadet Corps by giving technical

sea training to and instilling naval training in boys who intend to serve in Naval or Merchant services and also to those sea-minded boys who do not intend to follow a sea career, but who, given this knowledge will form a valuable Reserve for the Naval Service.

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

All British subjects who signify approval to the objects of the League are eligible. MAY WE ASK YOU TO JOIN and swell our members so that the Navy League in Australia may be widely known and exercise an important influence in the life of the Australian Nation?

For particulars, contact The Secretary, 66 Clarence Street, Sydney, N.S.W., or The Secretary, Room 8, 8th Floor, 528 Collins Street, Melbourne, C.I, Victoria

or one of the Hon. Secretaries at:

- Box 376E, G.P.O., Brisbane, Queensland
- 11 Quorn Street, Sandy Bay, Hobart, Tasmania
- C/- H.M.A.S. "Melville", Darwin, N.T.

- 39 Pirie Street, Adelaide, S.A.
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# THE FLAG COMES FIRST

By R. V. B. BLACKMAN, Editor of "Jane's Fighting Ships"

Readers of *The Navy* will have seen that in the January issue the latest edition of *Jane's Fighting Ships* was reviewed by "Reactor" to the generous extent of four pages. This review was largely based on my foreword, which was of course written before the Polaris v. Skybolt controversy hit the headlines. The Editor of *The Navy* has asked me if I have any second thoughts about the future size and composition of the Fleet now that the Royal Navy seems destined to be a Polaris power.

Let me say at the outset that while Polaris submarines are to be welcomed into the Royal Navy if they are to constitute an independent deterrent for Great Britain, the fact that submarines are to be the vehicles for the deterrent should in no way detract from the building up of the country's conventional naval forces to the level where they are adequate to safeguard our ocean trade routes and our still vast mercantile marine. They must constitute a potential for containing initially any foreign submarine menace, for protecting our remaining positions and wide interests all over the world, for maintaining continuous watch against the brush-fire type of local warfare, and what is probably most important of all, for showing the flag to such an extent that there is little possibility of brush fires starting at all.

Nobody knows for certain if or when we shall get Polaris. There are too many factors militating against it — power politics; international pride, jealousy and wrangling; national aspira-

tions and antagonisms; party strife; internal trade disputes; pacifist factions; and economic crises. Elections in either the U.S.A. or Great Britain could make or break a Polaris deal. And the cost of equipping a single squadron of submarines with Polaris could eventually be decisive.

Assuming, however, that Polaris submarines materialised in the Royal Navy, the money to pay for these deterrent vehicles should not come out of the vote provided under the annual Navy Estimates. It should come either from a separate, special fund or be charged directly to the Ministry of Defence Estimates. Otherwise the amount of money available for building the now very necessary conventional warships will be correspondingly reduced. If the chosen deterrent really is a deterrent, then it will never be used. And if it is never used then we need conventional naval forces just as much as we did before, not only as a sea police force but as a maritime fire brigade to put out brush fires before they can grow into conflagrations and all-out war. If the deterrent is still a deterrent then we need enough conventional naval forces to be able to take the initiative to defend ourselves first and then follow up with an attack to win that war, or at least stop the enemy from defeating us.

The Royal Navy to-day is more important for the defence of this country and the protection of our legitimate rights and interests abroad than it has ever been, for it is using and deploying all the arms of all the Services — not only ships and

fixed-wing aircraft, not only guided missiles and conventional guns, but helicopters, small arms and military vehicles as well.

Personnel under naval command include airmen and soldiers, as well as sailors. But the Royal Navy is not getting its fair share of the money allocated for defence. Under the 1962-63 Estimates £552,150,000 was provided for the Royal Air Force and £523,920,000 for the Army, but only £422,270,000 went to the Royal Navy. So if Britain is to have Polaris submarines their cost must be borne by some other fund and not by funds provided to build and maintain the Navy's conventional ships.

The Royal Navy might be even more important in the future. It might be the Service. As B.A.O.R. is one of the few operational requirements left for the Army, all other soldiers might be seconded to the Royal Marines to form a highly trained mobile commando force with adequate reserves, ready to go to a trouble spot at short notice. And the Air Force might constitute their ferry service for reinforcements, landing on strategically stationed aircraft carriers operating as mobile transit aerodromes, since we have so few overseas bases now. That is a future concept study.

To come back to the present, and what we need to provide a balanced and adequate navy for current needs, first let us leave out of account the submarine service which, weighed in the balance, is up to its required peacetime strength. In quantity the number of units is a little down, as compared with the pre-

war flotillas, but in quality it is up. Nuclear-powered submarines will considerably reinforce its strength.

So, disregarding Polaris and conventional submarines, what does the Royal Navy need in this day and age? First: many more frigates. Second: an aircraft carrier replacement programme.

Let us examine the frigate position. Before the last World War Great Britain maintained an escort force of 220 units (comprising 180 destroyers and 40 sloops — the then equivalent of frigates), and these constituted our anti-submarine and convoy protection strength. We also had 65 cruisers, compared with our present five, to lengthen the then "deterrent" chain of British warships stretched right round the world along the ocean trade routes, showing the flag in our overseas possessions or wherever we had interests, and ensuring the uninterrupted progress of 9,488 British merchant ships aggregating 21,215,261 tons gross. So we then had 285 warships of the escort or convoy type to show the flag.

To-day we have only 25 orthodox destroyers and 73 frigates, a total of 98 escorts for anti-submarine, anti-aircraft, radar picket and general purpose duties. This force is not only totally inadequate for commerce protection in peacetime, but is pitifully small as a potential for containing the enemy submarine menace when it is remembered that Great Britain needed some 650 frigates and anti-submarine escorts to fight the last war.

Now, it is not much use showing the flag in anything less than a frigate. The flag must represent substance and the promise of more to come, if not force. So we have 98 frigates, or 98 flags to stretch right round the world where formerly we

had three times that number.

There are those who would argue that our latest frigates are bigger and better than any frigates which have gone before, and I would be the first to agree that this cannot be gainsaid. But what can be disputed is whether one frigate, however much bigger and better, can do the work of two frigates. Our frigates of the "Rothesay" class are second to none, and those of the "Leander" class will be even better. So we have quality instead of quantity. But quantity can bring more units to the hunt of the lurking submarine; quantity can be stretched around the world, whereas quality can go only so far as the number of units permit.

At present quality goes hand-in-hand with paucity, and this is likely to be accentuated if the current building ration is adhered to. Of our remaining 98 orthodox destroyers and frigates only 44 are under 10 years old, and no fewer than 54 are between 11 and 21 years old. If the Admiralty continues to order only three frigates per year, as has been the case in recent years, the situation will gradually deteriorate until in 10 years' time only 30 units of our escort fleet will be under 10 years of age and 44 will be 10 to 20 years old. That will constitute our entire anti-submarine fleet, for vessels reaching the age of 20 years, a normal span of life, will almost certainly be scrapped.

We shall thus have an anti-submarine and general purpose escort force of only 74 units, compared with the 650 frigates and anti-submarine vessels which were needed to fight the last war, and the 220 which we maintained before the war, when we also had 65 cruisers for commerce protection compared with the five remaining now. We

shall be incapable of defending the trade routes, on which there still ply 5,009 British merchant ships totalling 21,658,142 tons gross, let alone have a sufficient potential for emergency.

One does not teach one's grandmother to suck eggs. The Admiralty, of course, knows how many frigates we need for defending the country, for the protection of commerce, and as the minimum potential for containing the submarine menace in the event of war. The Admiralty knows how many frigates were needed to fight the last war, how many we maintained in the past, and how many we need to show the flag effectively now. The Admiralty has doubtless estimated, as far as anyone can anticipate the future, how many frigates we shall need in 10 years' time. So the run-down must be deliberate. And it is not straining anyone's powers of reasoning to deduce that the run-down is dictated neither by the country's need nor by the Admiralty's requirements, but by the national purse. It all boils down to a question of cost.

How then can we obtain more frigates within the present financial framework? Only by building frigates more cheaply. Building more cheaply would presume a sacrifice of individual quality which no one would willingly advocate. Our latest frigates have won the admiration of many countries (Australia, India, New Zealand and South Africa have built, and the Netherlands is building, similar ships). But can this quality be overdone at the expense of quantity? Are too many black boxes being crammed into our new frigates? Has habitability been improved so much as to amount to luxury?

In the days when ships served 2½ to 3 year commissions overseas, living conditions were austere, if not bleak, but now



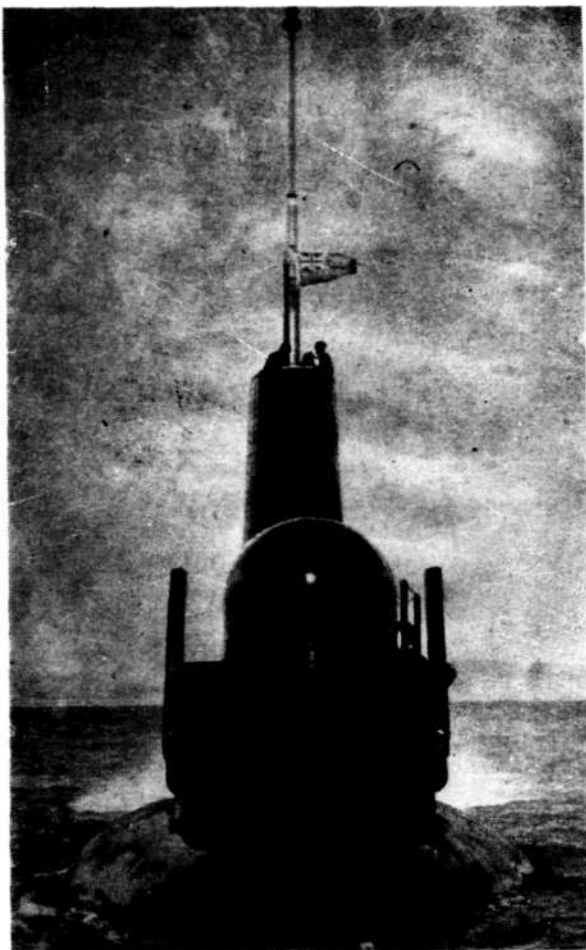
when ships serve only months abroad and then return for the home leg the living quarters, paradoxically, are comparatively palatial. The quality of mercy would not be strained if quality were constrained to the bare essentials. And is not the quantity really required for the needs of the Navy and the country a quality in itself?

How can we build frigates more cheaply? By building slightly smaller and slightly simpler frigates. Our pre-war destroyers, only two-thirds the displacement of our latest frigates, have been described as the finest anti-submarine escorts, general purpose vessels and maids-of-all-work ever built. And the war-built frigates of the "Loch" type, also only two-thirds the displacement of our latest frigates, have given excellent service overseas for nearly 20 years. Would it be possible to build a modern frigate type with characteristics something between these two?

A warship design stems, of course, from a set of operational requirements (these requirements often technically conflicting in themselves) passed from the Naval Staff at the Admiralty to the Ship Department; and the naval constructors and engineers have to devise, with a large measure of compromise, the best ship to fill the bill. One cannot help thinking that, with the naval architects, marine engineers, electrical engineers, electronics experts and other scientists all insisting on embodying the ultimate in technological progress and development into each and every ship, too much is being contrived in a single hull. This increases the price of the individual ship so much that the number of ships that can be built within the limit of funds allocated is restricted.

(To be continued next issue).

## NEW SUBS FOR R.A.N.



The Royal Navy submarine, H.M.S. OLYMPUS, returns to port. The submarine is similar to the four ordered by the Federal Government for the Royal Australian Navy. The first of the vessels, which rank among the most advanced conventional submarines in the world, is due for completion in 1966.

THE NAVY

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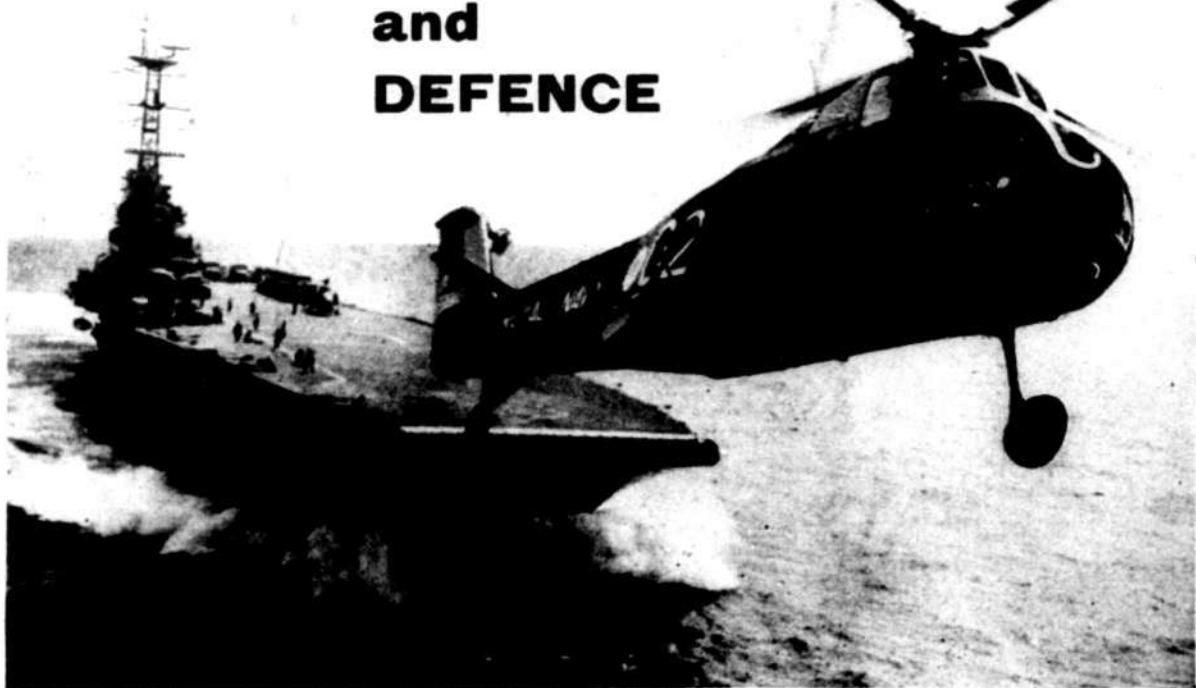
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escort vessels too small to accommodate the "Wessex". As demonstrated in recent evaluation trials, it can operate successfully, even in moderate seas, from a platform only 26ft. x 21ft. In commando carrier operations from H.M.S. 'Bulwark', "Whirlwinds" are giving vital mobility, enabling shock troops and supplies to be put ashore rapidly in remote places, and subsequently providing a fast, direct transport link between the troops and their parent carrier. Soon a larger "Wessex" will bring even greater striking power, carrying 16 fully-equipped troops (as against 10 in the "Whirlwind") or twice the amount of freight.



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