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A Message from...
The Minister for the Navy
THE HONOURABLE D. J. KILLEN, M.P.

This year the Royal Australian Navy has 53 ships of various types in service. Never in peacetime has it had a Fleet of this size, a fleet which is shaping the Navy towards a balanced force possessing versatility and flexibility and a capacity for rapid deployment in a wide range of situations.

Never before has the Navy's development been directed towards such a high degree of self-reliance. As each year goes by the R.A.N. becomes more noticeably an Australian Navy. New projects announced in the past year will further these trends.

These projects include the designing of a new class of Australian light destroyer, the building of a fast combat support ship, an oceanographic ship and a small hydrographic ship.

Two more Oberon class submarines will be bought in England, 10 further Skyhawk fighter-bombers are to be purchased, new training and support aircraft will be bought, communications facilities ashore will be improved and several existing ships will be modified to improve their fire-power and efficiency.

Those who have an understanding of our Navy have always been proud of the fine fighting service and of the men who serve it.

I can assure those who take pride in the Royal Australian Navy in 1970 that their faith is not misplaced.
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A Message from the
First Naval Member,
Chief of Naval Staff

Vice-Admiral
SIR VICTOR
SMITH
K.B.E., C.B., D.S.C.

In this 1970 Message I am happy to inform you that the R.A.N. has the largest peacetime fleet in its history. Fifty-three ships of various types were in service on 30th June, 1970, shaping the Navy towards a balanced fleet possessing versatility and flexibility and a capacity for rapid deployment in a wide range of situations.

Then, as I hope you are already aware, the design of a new generation of destroyers has begun and approval has been given for the Navy to acquire a fast combat support ship, two more submarines, an oceanographic ship, additional aircraft and a hydrographic ship. These are the major projects, but there is also good progress in many other spheres.

I wished to let you know the foregoing in order to assist you in achieving that object in your Memorandum of Association which states:-

"To spread information showing the vital importance to the British Commonwealth of maintaining such sea and air power as will ensure the permanent safety of the British Commonwealth of our trade and of our supplies of food and raw materials, and will secure British prestige on every sea and in every port in the world."

Finally, in this special edition of “The Navy” I would like to take the opportunity of wishing The Navy League of Australia continued success during the next twelve months.
DESTROYER IS REBUILT

A large part of the workforce at Williamstown Naval Dockyard is being progressively switched to the $8 million project to rebuild the destroyer H.M.A.S. VAMPIRE.

The 3,600 ton warship is lying alongside at Williamstown with practically all its superstructure cut and removed.

Although the rebuilding job will last until mid-1971, the first of the new prefabricated sections of superstructure has been hoisted onto the ship.

VAMPIRE, built at Cockatoo Island Dockyard in Sydney and commissioned in June, 1939, is having a modernisation that will change her appearance and update her equipment.

The three twin-gun turrets are being modernised by improving the drive and other systems.

The present analogue fire control systems will be replaced by digital systems and will include new radars.

This will lead to a reduction in the number of sailors required to man the fire control systems. It will also reduce VAMPIRE's weight, take up less space and will simplify maintenance.

The ship's sonar will be improved and the ship will also be fitted with a new air-search radar and new navigation/surface search radar.

The present open bridge will be enclosed.

Dockyard workers at Williamstown are carrying out the refit by using fabrication methods developed during the construction recently of the destroyer escort, H.M.A.S. SWAN.

After the new sections have been added to the ship, a team of electricians will move in to replace miles of electrical cable needed for the ship.

When the task is finished, the sister ship H.M.A.S. VENDETTA will be docked at Williamstown and the $8 million process will be repeated.

NOTICE OF MEETING

Notice is hereby given that the Annual General Meeting of the Navy League of Australia will be held on Friday, 16 October, 1970, at Industry House, National Circuit, Canberra, A.C.T.

More detailed information is available from the Federal Secretary, Lieutenant Commander A. A. Andrews, M.B.E., Box 1719, G.P.O., Sydney, N.S.W. 2000 – telephone Sydney 31 5830 or 41 4218.

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“The Civilian Arm of the Navy”

We invite you to swell our ranks and so keep up to date with Maritime Affairs to help to build an ever-increasing weight of informed public opinion. The Navy League will then become widely known and exercise an important influence in the life of the Australian Nation.

The principal objective of the Navy League of Australia is to stress the vital importance of Sea Power to the Commonwealth of Nations and the important role played by the Royal Australian Navy.

The League, in conjunction with the Commonwealth Naval Board, administers the Australian Sea Cadet Corps, by providing finance and technical sea training for boys who intend to serve in the Naval or Merchant Services, 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.

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The Armada Argentina, the Argentine Navy has ordered the Hawker Siddeley Dynamics Sea Dart anti-aircraft area defence guided weapon system, as the main armament for two Type 42 destroyers which they are purchasing from Vickers ship building group.

Sea Dart is the most advanced naval anti-aircraft guided weapon in the world and is being installed in the Royal Navy type 82 and 42 destroyers, as the main British naval air defence system in 1970/80 long range planning. Sea Dart also has a powerful anti-ship capability.

The missiles and other equipment will be supplied direct to the Armada Argentina.

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August-September-October, 1970

**EXPANDING TRAINING NEEDS**

Of the R.M.N.'s new frigate HANG JEBAT, presently undergoing trials in Biak, he said, the ship was commissioned in July, and after further trials, will sail home in April or May next year.

The HANG TUAH, the R.M.N.'s present frigate and flagship would be converted later this year from a warship into a training ship to meet the navy's expanding training requirements.

New facilities for the maintenance of the ships were also being planned in Malaysia.

The Government had granted pioneer status to a private shipyard in Sungai Nylor, Butterworth, which would slip and refit R.M.N. ships.

The shipyard is now actively engaged in planning to meet Malaysia's requirements and it is hoped that it will be able to refit the first patrol craft at the end of the year.

**NETHERLANDS NEW FRIGATES**

A new class of frigate to be built by the Royal Netherlands Navy will use Rolls Royce power.

Two of the ships are to be built and each will have two Tyne and two Olympus engines.

The £3 million ($A6,428,700) order was announced by Rolls Royce recently and it brings the number of world navies using the firm's marine gas turbines to fifteen.

The 4,100 bhp Tyne will be used for cruising and the 23,200 bhp Olympus as boosters.

**UNITED KINGDOM**

**NEW STYLE MARINE RADIO**

Two new multi-channel single-band receivers, introduced by Eldscent, Radio, provide a completely new concept in shipborne receiving equipment. They combine high performance and crystal-controlled accuracy and stability with the extreme simplicity of operation provided by switch-selected spot frequencies. One of these models, Type EC964/1, provides a choice of no less than 52 spot frequencies in the medium and high frequency bands, while the other, Type EC964/3 offers a choice of 24 spot frequency channels in the medium frequency maritime band.

The new receivers have been designed to fit into the current plan for introducing single-sideband in the maritime communications field during the period 1971/72 onwards.

Additionally, they satisfy the present trend towards greater simplicity of operation.

**USE OF PLASTICS IN SHIPS**

The Royal Navy may soon be building a small 160-foot long coastal mine-sweeper made of glass reinforced plastics (GRP). Currently, a large section of a minesweeper made of GRP is being put through trials by the Naval Construction Research Establishment (NCRE) at Duntreath, Scotland.

"The main worry is the brittle character of GRP, which does not yield like steel and at the end of its elastic range just breaks," Michael Westlake, head of the Surface Ship Division of NCRE, said.

Advances being made at the research center are viewed as providing valuable spin-off data for private shipbuilding.

**BIG NEW SEACAT ORDER PLACED**

ROYAL NAVY PURCHASE

The Royal Navy has placed a multimillion-pound order with Shorts' Missile Systems Division for twenty-five of the Seacat close-range ship-to-air guided missile. Already used throughout the fleet, in warships ranging from Leader-class frigates to the aircraft carrier H.M.S. HERMES, Seacat has been the Royal Navy's standard short-range shipborne anti-aircraft weapon since 1962 (see photo). Adopted by 14 other navies too, it is the world's most widely used shipborne guided weapon system. Primarily installed for defence against aircraft, it has a secondary role as a surface-to-surface weapon.

"The size of this latest order, involving many hundreds of missiles, indicates that the Royal Navy considers Seacat to have a very long future," said Commodore K. Thanabalasingam.

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naval craft can now be equipped with effective guided-weapon defence against low-level attack aircraft. Seacat is only one of three weapon systems of which Shorts’ Missile System Division — a winner of the Queen’s Award to Industry for the last three years in succession — is engaged. Tigracat, the highly mobile land-based derivative of Seacat, using a common missile, is in production for the R.A.F. Regiment and five customers overseas. Blowpipe, a man-carried supersonic anti-aircraft weapon fired from the shoulder, is in an advanced stage of development.

Seacat as 100ft (30m) fast patrol boats, and inshore minesweepers, can enjoy sophisticated missile defence against attacking aircraft and surface targets. Broadening of the Seacat market to embrace such small craft promises to lead to further widespread adoption of Seacat, already the world’s most widely used shipborne missile.

The Royal Navy, Seacat-equipped for some years, is planning new Seacat installations as far ahead as 1978 and an operational life for the weapon to the mid-1980s.

HARRIERS IN DISPERSED OPERATIONS

Further successful Harrier trials in a naval role have been carried out in recent weeks by the British ministries of Technology and Defence. Two Harriers, flown by R.A.F. and Hawker Siddeley test pilots, completed in a two week period nearly 60 V-STOL sorties in day and night operations from the carriers H.M.S. Eagle, with one take-off and landing also from H.M.S. Ark Royal. The aircraft carried what are described as “realistic warloads”, including 1000 lb. bombs, high velocity rockets, 30mm Aden cannon, and full internal fuel. With these 5000 lb. loads, operating weight was up to the maximum permitted for service flying. Wind speeds over the Eagle’s 500 ft. angled deck varied between 20 and 40 kt. This was the eleventh sea trial of the Harrier — previously it has been operated from H.M.S. Ark Royal (twice), H.M.S. Blake, H.M.S. Bulwark (twice), Italian, Argentine and U.S. carriers and the U.S.N. helicopter platform ships Raleigh and La Salle — and it is believed that the latest trials will be followed by a clearance for the Harrier to operate from aircraft carriers leading to further sea exercises and an increase in interest by a number of navies. Currently the Harrier is powered by the Pegasus 101 vectored-thrust turbofan engine of 19,000 lb. Rolls-Royce announced in late March that the advanced Pegasus 10 (developing 20,500 lb.), which will power later versions including the U.S.M.C.s AV-6B version, had successfully completed its official 150 hr. declared type test at the Bristol Engine Division. Full type approval of the Pegasus 10 was granted before June. Also under development is the 21,500 lb. Pegasus 11.

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25 GERALD ST., MARRICKVILLE
Telephone: 51-3231
The ocean pressure simulation facility means a big step forward for the United States in the entire spectrum of ocean technology. Among other considerations, the accelerated emphasis in deep-submergence and swimmer-driver operations show a critical need for an advanced engineering research and development program for undersea equipment.

The Panama City ocean lab will be interconnected with an already installed and operating $5-million hybrid computer complex, which will make possible simulation of complete missions in real environment under laboratory control.

A steel-frame masonry building will house the facility (see photo below).

NEW TRAINING BOAT

H.M.S. Scimitar, the first of three fast training boats for service with the Royal Navy, is pictured manoeuvring off the South Coast of England. Built by Vosper Thornycroft Ltd., she is designed to give the Fleet practice in countering enemy missile-carrying vessels and although only lightly armed, she has the capacity to carry heavier arms.

Scimitar is fitted with two Rolls Royce gas turbines giving her a speed of over 40 knots, and with a third engine, for which there is accommodation, she could achieve 60 knots. The 100 foot long craft has a displacement of 100 tons and carries two officers, three senior sailors and seven junior sailors.

The other two boats in the squadron, H.M.S. CUTFIASS was launched last February, and H.M.S. SABRE is nearing completion in the company's yard.

U.S.A.

NAVY FACILITY TO SIMULATE OCEAN ENVIRONMENT

A $7.4-million ocean simulation facility that will enable the U.S. Navy to develop, test, and evaluate underwater man-in-the-sea systems is under construction at the Naval Ship Research and Development Laboratory at Panama City, Florida, and is expected to be in operation by 1971.

The pressure complex will have the unique ability to test man and machine together in a simulated ocean environment to a depth of 2,000 feet. The man-rated facility will be the largest of its type in the world.

Sea simulators — Depicted here is a cutaway view of a Navy ocean pressure simulation facility now under construction at Panama City, Florida (see story). Two dry chambers and a control room occupy the upper portion of the building, and a single, water-filled chamber is located below. Both wet and dry chambers are interconnected to permit use in several testing combinations.
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THE NAVY August-September-October, 1970

The building will have an area of about 22,500 square feet and will include a three-story administrative section, a high bay area with mezzanine, a one-story mechanical room, and a testing pool. The entire complex will cover an area of about three acres.

The research facility will center around an arrangement of two connected pressure chambers with diver supporting equipment and controls to permit simulating various depths of sea-water to 2,000 feet. All compartments can be operated independently at different pressures and with different gas mixtures. All chambers and associated locks can be operated to 1,000 psi.

CONTRIBUTIONS INVITED

The editor invites persons to submit articles, photographs and drawings (black ink) for inclusion in the magazine, but regrets that no payment can be made for contributions submitted. Contributions should be addressed to: The Editor, “The Navy”, Box C178, Clarence Street Post Office, Sydney, N.S.W., 2000, Australia.

The Editor does not hold himself responsible for manuscripts, though every effort will be made to return those with which a stamped and addressed envelope is enclosed.

This is an artist's concept of the USS Dwight D. Eisenhower (CVAN-69), the Navy's third nuclear-powered aircraft carrier. The first to be named for a U.S. president, she will be 1,082 feet long, have a waterline beam of 134 feet, and a full-load displacement of 94,400 tons. She will have a two-reactor power plant and will be equipped with the naval tactical data system, and integrated operational intelligence centre, and the automatic carrier landing system. Construction of the carrier, beginning this year, will take approximately five years.

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The first of four pilot production models of an advanced integrated sonar system, developed by the Sperry Gyroscope Division of Sperry Rand, has been delivered to the U.S. Navy for installation aboard the destroyer U.S.S. BROWNSON. Designated PAIR (Performance and Integration Retrofit), the equipment is to be subjected to extensive technical evaluation and operational appraisal at sea.

PAIR is designed for ease of installation and integration with the existing principal sonar installations in the U.S. surface fleet, the AN/SQS-23 systems. Extensive use of microcircuitry, digital techniques and modular packaging has resulted in a lighter and more compact equipment having greater reliability, simplified maintenance and reduced logistic requirements.

The inclusion of built-in, computer-aided fault localisation enables PAIR to be maintained by fewer sonar technicians. Short, intensive maintenance courses for such technicians are being held by Sperry. Operational capability is increased by using the latest signal processing methods and computer-aided displays. These features, together with built-in performance monitoring, greatly improve the operator’s ability to detect and identify submarines. The performance monitoring permits a rapid check of the system to ensure that all modes of operation are performing in accordance with the system requirements.

The other three systems of the quartet are to remain with Sperry to undergo environmental, reliability and maintainability tests. They will also be used for the operational and maintenance training of personnel.
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DARTMOUTH -
Where Prince Charles Will
Learn The Ropes
by Basil Gingel

Capt. David Williams, R.N, the 31st to hold the important post of captain of the college, summed it up to me thus: "Our object is to get young men to act and re-act as officers. All training here is devoted to that end.

"In addition, however, we give them the necessary naval knowledge to aid them in the next stage of their career which may be either at sea with the Fleet, or flying.

"We work on the basis that all training has to be progressive, either the curriculum therefore is constantly under review to meet the changing requirements of our modern navy.

"At the moment we have 550 under training of whom, about a hundred are at universities but remain my responsibility. Our numbers are divided roughly between cadets doing their first year course, and acting sub-lieutenants who return to the college in their third year for academic studies, having done a year at sea as midshipmen.

Tough Training

"The training is reasonably tough, but no tougher than need be to produce the final result. We find the new entrants shape-up well and we are happy with the quality of young men who join," Capt. Williams spoke enthusiastically about the surroundings in which the college is situated. "They are ideal in every way," he said. "Almost every kind of sporting opportunity is available, either on the splendid playing fields, on the moors nearby, or the river and the open sea."

The minimum age for entry to the college under any one of twelve different methods of joining is seventeen. The age is higher if the would-be officer has attained diploma status or holds a degree. Whatever technical qualifications are possessed, however, training starts initially with what might be called Nauticalisation.

The newcomer is made acquainted with the navy's way of doing things and the phraseology and terminology it employs. He learns to call floors, decks; beds are bunks; and rooms are cabins.

A young officer takes a sight aboard a frigate of the Royal Navy's Dartmouth Training Squadron, which is attached to the Royal Naval College. The young men who enter the college as cadets to be trained as officers, are soon to be joined by the Prince of Wales, who will follow in the footsteps of his father, the Duke of Edinburgh, and his grandfather King George VI. The College, with its great reputation and traditions, not only trains officers for the Royal Navy, but many from overseas as well.

A young officer takes a sight aboard a frigate of the Royal Navy's Dartmouth Training Squadron, which is attached to the Royal Naval College.
In the present term there are, besides those destined for the Royal Navy, young men from Libya, Iran, Ireland, Nigeria, Malaysia, Singapore, and New Zealand. For these international cadets, who number 79, the course is varied after the first year to meet the requirements of the individual countries but some come back as acting sub-lieutenants in their third year for senior courses.

Of 220 entrants for the General List of seaman and supply officers who come annually to Dartmouth, 175 of them are from public schools and grammar schools with above average educational ability and who are over 17 but under 20.

24-Hour Programme

For the first month in their new surroundings there is no leave and, in a day that begins at 6.30 a.m. with what is called "early morning activity", the whole of the 24 hours is programmed. Classrooms are spacious and well provided with models, plans, and diagrams and it is in these that most of the six hours of daily instruction is given.

Healthy appetites are well catered for. Meals are served to first year cadets on the cafeteria principle, but to older students at the tables.

The cadet's day leaves only two hours 45 minutes of free time, but provision is made for seven and three quarters hours of sleep.

The sleeping accommodation varies between single and two berth cabins and many of them have been brightened by the individual taste of the occupants. At one time much of the sleeping accommodation at the college was in large dormitories, but these have been sub-divided to make the attractive cabins now available.

Besides the standard naval pattern bed with its counterpane bearing the Admiralty design, each cabin has a wash basin with hot and cold running water, a wardrobe, and a desk. Some even boast a settee as well as an arm chair. Power points offer the means for tea and coffee making.

Sailing Trips

But whether the future officer is undergoing formal instruction, engaged in "other activities" or even on "free time", the objectives which the captain stressed — young men should be taught to act and react as officers — shine out. Weekend exercises with practical boat work becomes training in leadership; arranging and sponsoring some useful undertaking in leave time becomes an essay into community enterprise; while sailing trips across the Channel, to Royal Air Force stations, or tours of Germany develop initiative.

A young officer records pressures in the engine room of H.M.S. Scarborough, a frigate of the Royal Navy's Training Squadron, which is attached to the Royal Naval Training College.
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The planning in each case is left to the participants. Teams have recently worked with the Iona community in Scotland, while on the sailing side young men from the college regularly crew the Dartmouth sailing craft across the English channel and along the waterways of Europe.

College Frigates

For most of the students the last term of the first year is spent in one of the four frigates comprising the Dartmouth Training Squadron. Here an opportunity is afforded them of seeing a practical application of their classroom instruction.

Such time as he spends at sea with the squadron gives him some insight to what it will be like in his second year when he leaves the college for a year as a midshipman with the Fleet. In the search for the best method of training naval officers a year or two ago the system whereby an officer under training went to sea as a midshipman was dropped. It was restored however when it was recognised how valuable this training is in the overall education of the officer.

When the midshipman returns to the College he is an acting sub-lieutenant. He has been Navigated, undergone instruction in the broadest sense on all aspects of the service, and has gained a watchkeeping certificate.

Academic Life

In his third year he settles down to a mainly academic life. There was a time when naval officers, in common with other professionals in the services, were chided for the limitation of their knowledge outside their own particular field. That is far from the case today and the reason is largely to be found in this third year at Dartmouth.

There is a library of 20,000 books, and a wide variety of cultural activities are available. For those interested in music there is a musical society and a choir. Also a thriving drama group exists which recently entered a production, "A Penny for a Song" for the Royal Naval Drama Festival.

The College is notable in many ways perhaps, not the least because all the staff officers there have at one time or another been students. As such they can appreciate the position of those now undergoing instruction.

Dartmouth is of course just the beginning. From here the young naval officer goes on to courses in the navy's specialised establishments, or to groundwork he receives at the Royal Naval College on which others will build. That is why it remains so important that the level is maintained.

SUBSCRIPTION FORM

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Subscriptions for shorter periods than 12 months cannot be accepted. Overseas subscription rates by air mail supplied on request.
From patrol boats for the Bahamas Police and the Panama National Guard to miniature but powerful warships armed with guided missiles; that is the range of small ships being produced by the Vosper Thornycroft Group of designers and builders of warships, patrol craft and hovercraft on the English south coast.

The name Vosper is particularly associated with the swift little sea-wasps of World War II, the motor torpedo-boats (MTBs) and motor gun-boats (MGBs). Those were the forerunners of the Brave and Tenacity classes of fast patrol boats today.

The Brave were born in the middle 1950's when the Bristol Siddeley and marine version of the Rolls Royce Proteus, gas turbine, became available. These hard-chine, 25ft. 6in. beam, planing boats, 99ft. were the first fighting ships to be powered by such turbines, and the latest developments of this class can approach 60 knots under full power from three turbines, in good weather. They were designed to be armed as torpedo-boats, with four side launching chutes for 21in. torpedoes or guns-boat or a combination of both. They can also be armed as minelayers and raiding craft.

Next came the Ferocity class, only 91ft. long overall carrying similar armament and having much the same performance as the Braves. This class has only two Proteus engines, of higher horsepower, for high speed attack, but is also equipped with two diesel engines for cruising at low speed on long patrols.

Ferocity was designed to cope with chemical, bacteriological or nuclear warfare conditions, having, besides the normal open bridge, a closed bridge from which the little ship can be sailed and fought. In event of nuclear fallout or chemical threat, this space and all manned areas can be shut down and supplied with filtered air while the upper deck and open bridge can be washed down automatically to remove contamination.

Variants of both the Brave and Ferocity classes have been sold to the West German, Danish, Malayum and other navies. Finally, a unique type was produced for the Libyan Navy, three boats being equipped to fire eight wire-guided missiles which can hit an enemy target at ranges up to 3.5 miles, with the impact of a 4.5 inch shell. Within the past year, Vosper Thornycroft took another step forward in this field in presenting Tenacity, prototype of a new class which is practically a front-line warship in its own right. This latest development in fast patrol boats is designed to carry guided missiles with warheads packing an equivalent impact to a 6 inch shell, and such guns as twin 35 mm Oerlikons for defence against aircraft or use against other ships at medium range. Both items of main armament are operated by fire control equipment serviced by a small computer.

The Vosper Tenacity is 144.5 ft. long overall and has a full load displacement of 180 tons, drawing nearly 8ft. of water.

The hull is welded steel, with upper deck and superstructure of weight-saving marine aluminium alloys. She has three Rolls Royce Proteus gas turbines to give her a top speed (in triple series) of almost 40 knots, with Paxman diesel engines on the two wing shafts for cruising and manoeuvring at 16 knots. Full power is available within one minute of starting the gas turbines, which can be completely controlled from the bridge.

Tenacity has been designed to maintain patrol for up to a week at sea, instead of being limited to sorties of about 12 hours by the earlier, conventional fast patrol craft. For this sort of duty her top speed of 40 knots is adequate.

The superstructure includes an open bridge, with a short ladder leading down to the wheelhouse where a compact, steering and engine control console is situated. Another short ladder leads from wheelhouse to operations room housing the fire control, radar and navigational equipment.

This is certainly a formidable little fighting ship, representing a potential menace to other warships as large as destroyer or frigate.

At the other end of the scale are the four patrol boats being built for the Marine Division of the Royal Bahamas Police for fishery protection duty and to guard against infiltration.
The R.L.N.S. Susa, the first of three gas-turbine fast patrol boats designed and built by Vosper Thornycroft for the Royal Libyan Navy. She is seen discharging one of her Nard-Aviation wire-guided missiles.

A 56ft. GRP patrol boat undergoing sea trials at speeds in excess of 19 knots.

These boats are intended for a wide variety of duties, including coastal patrol, fishery protection, air-sea rescue duties, servicing buoys and offshore lighthouses, anti-smuggling operations, and for the transport of medical equipment and government officers to and from isolated areas.

An expanded version, 110 ft. long, with more powerful engines, higher speed, heavier and more complex armament and accommodation for more crew was produced by Vosper Thornycroft for the Peruvian Navy. In this type, the armament includes an 80 mm Oerlikon rocket-launcher.

Six 110 ft. fast patrol boats are now being built for the Republic of Singapore, in two groups of three.

These boats are built of steel and powered by diesel engines providing a maximum speed of more than 30 knots. The armament of the second three vessels differs from that of the first three in being more advanced, which places the craft among the most effectively armed patrol boats in the world.

A sloop. These boats are intended for a wide variety of duties, including coastal patrol, fishery protection, air-sea rescue duties, servicing buoys and offshore lighthouses, anti-smuggling operations, and for the transport of medical equipment and government officers to and from isolated areas.

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Such boats take about 18 months to build and fit out and cost approximately £1,750,000. At the other end of the scale, a mighty little warship like Tenacity would cost from £8m to £8.3 million and take from 18 months to two years to complete.

Price, of course, largely depends on the advanced armaments and electronic equipment specified by the buyer and the building time is also governed by the state of the Vosper Thornycroft order book. But the company has substantial building capacity, and so the Vosper patrol boats and high-speed launches spread around the world in increasing numbers.

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BOOK REVIEW

THE OBSERVER'S BOOK OF AIRCRAFT

By William Green


Price: £1.10

Reviewed by: STEPHEN H. SCARLETT.

Like most of the books in the Observer series, this book makes life extremely hard for the reviewer, who finds it difficult to do anything but give praise. As usual, the book is extremely well produced - the photographs are for the most part first-class and the three-view silhouettes are superb. The text itself is full of accurate, interestingly presented facts. Having praised the book to the skies, what can the poor reviewer do now to fill up his quota of words? All that can be done really, is to make a few minor criticisms.

First, I am a little sorry to see that in the present controversy, the comments on the F-111 are non-committal as to be almost hilarious. The book causes so many other thoughts to spring to mind. In the helicopter section, the piece about the Bell H34Cobra illustrates the stage to which the helicopter gunship has developed. George Orwell made a surprisingly accurate prediction of the helicopter gunship in his chilling novel, "1984".

Whilst on the subject of helicopters, the model of the Bell Iroquois, described, the UH-1H, is no longer the latest model of this highly successful helicopter. The Canadian Armed Forces have recently purchased the UH-1N, which has two T74-CP-400 turboshafts mounted in a twin-pack arrangement. Still on helicopters I note that in the 1960 edition, of the 30 helicopters featured, 13 were American and 4 were Russian. In the present edition, of the 31 helicopters featured, 11 were American and 7 were Russian, including the Mi Mi-12, the world's largest helicopter. Russia has certainly made great strides in helicopter development over the last decade.

A grain of comfort can be gleaned from this book by noticing that Australia and New Zealand are at last making some attempts to come together on the question of aircraft types. Both countries now operate the Lockheed P-3 Orion and slightly different models of the McDonnell Douglas Skyhawk and the Lockheed C-130 Hercules. Well, at least it's a start.

There is so much to be gained from this little book that I recommend that you do not borrow this book from the Library - you should buy a copy. At only 50p, you will find it an excellent investment.

In the present edition, no Australian designed aircraft are to be seen. This seems a tragedy, when one considers the thriving Canadian aircraft industry, four of whose products are featured in this book (including the excellent Buffalo). Again, 3 Swedish designed and built aircraft appear in the book. The Swedish aircraft industry has reported contracts for 86 aircraft, which will not doubt help Sweden's balance of trade. I hope that Australia will not have to pay too dearly for its neglect of its aircraft industry.

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The aim of the Australian Sea Cadet Corps is to provide for the spiritual, social and educational welfare of boys and to develop in them character, a sense of patriotism, self-reliance, citizenship and discipline.

Uniforms are supplied free of charge. Cadets are required to produce a certificate from their doctor to confirm they are capable of carrying out the normal duties and activities of the Cadet Corps. If injured while on duty, Cadets are considered for payment of compensation.

Parades are held on Saturday afternoons and certain Units hold an additional parade one night a week. The interesting syllabus of training covers a wide sphere and includes seamanship, handling of boats under sail and power, navigation, physical training, rifle shooting, signalling, splicing of wire and ropes, general sporting activities and other varied subjects.

Instructional camps are arranged for Sea Cadets in Naval Establishments, and they are also given opportunities, whenever possible, to undertake training at sea in ships of the Royal Australian Navy. Cadets, if considering a sea career, are given every assistance to join the Royal Australian Navy, the Mercantile Marine or the Royal Australian Naval Reserve, but there is no compulsion to join these Services.

For further information please contact the Divisional Senior Officer in your State, using the Form provided below.

Senior Officers, Australian Sea Cadet Corps

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NAVY WEEK
IN AUSTRALIA

Navy Week is one week in each year when Australians from coast to coast are urged to pay grateful tribute to those who have served and those now serving Australia at sea.

During this week it is fit and proper that a nation of free men and women should resolve to do its share and to meet its responsibilities so that those who served in the past and those now serving shall not be in vain. It is fitting and proper that the surest way of meeting the responsibilities of freedom and self-government is to ensure that those who have served in the past shall not be in vain. It is the week in which grateful citizens should salute their Royal Australian Navy and make sure that it is adequate to fulfill its contribution to our national security.

In the Royal Australian Navy the month of October has always held special significance. The 21st commemorates the 156th anniversary of the victory of the Battle of Trafalgar. It is an event that Australians have looked forward to for half a century. They were their own ships, paid for by their own money and manned in large proportion by their own men; the nucleus of what they hoped would be their own Fleet.

The Squadron comprised the Battle Cruiser Australia; Light Cruisers, Encounter, Sydney, Melbourne and the Torpedo Boat Destroyers, Warrego, Parramatta and Yarra. It is appropriate at this time to recall the words expressed by the then Prime Minister of Australia, The Honourable Sir Joseph Cook:

"Since Captain Cook's arrival, no more memorable event has happened than the advent of the Australian Fleet. As the former marked the birth of Australia, so the latter announces its coming of age, its recognition of the growing responsibilities of nationhood, and its resolve to accept and discharge them as a duty both to itself and to the Empire. The Australian Fleet is not merely the embodiment of force. It is the expression of Australia's resolve to pursue, in freedom, its national ideals, and to hand down unimpaired the heritage it has received, and which it holds and cherishes as an inviolable trust. It is in this spirit that Australia welcomes its Fleet, not as an instrument of war, but as the harbinger of peace."

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Programme Of Events
arranged for
Navy Week, 1970

NEW SOUTH WALES
AUSTRALIAN SEA CADET CORPS

Units of the Australian Sea Cadet Corps will be open for public inspection on Saturday, 26 September, 1970, between 2.00 and 4.00 p.m. Cadets will be available to conduct visitors on tours of inspection.

A list of the training ships is detailed hereunder:

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<td>ALBATROSS</td>
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<td>SIRIUS</td>
<td>Cahill Park, Levey Street, ARNCLIFFE.</td>
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<tr>
<td>SYDNEY</td>
<td>&quot;Snapper Island&quot;, via Iron Cove Bridge. Launches run from Elliott Street Wharf, ROZELLE (2.00-2.30 p.m.)</td>
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<tr>
<td>TOBRUK</td>
<td>R.A.N. Drill Hall, OFF Nobby's Road, NEWCASTLE.</td>
</tr>
<tr>
<td>WARREGO</td>
<td>Gate Street, WOOLWICH.</td>
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</tbody>
</table>

Programme Of Events
arranged for
Navy Week, 1970

NEW SOUTH WALES
AUSTRALIAN SEA CADET CORPS

Units of the Australian Sea Cadet Corps will be open for public inspection on Saturday, 26 September, 1970, between 2.00 and 4.00 p.m. Cadets will be available to conduct visitors on tours of inspection.

A list of the training ships is detailed hereunder:

<table>
<thead>
<tr>
<th>TRAINING SHIPS</th>
<th>ADDRESS</th>
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<tr>
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Navy Week in Sydney
Display at Garden Island

GARDEN ISLAND NAVAL DOCKYARD OPEN DAY

The Dockyard and certain ships alongside will be open for inspection by the Public, between 1.30 and 5.00 p.m. As various events are scheduled they will be announced over the Public Address System.

The ships only, will also be open for inspection by the Public between 1.30 and 5.00 p.m. on Sunday, 4th October.

Events will include:

a. Inspection of H.M.A. Ships
b. Engineering Workshops, Sail Loft and Chapel
c. Band Concert and Display
d. Clearance Diving Demonstration
e. Helicopter Winching (Rescue) Display
f. Submarine Display
g. Boat trips on the Harbour in the vicinity of Garden Island

Note: NOP - Not open to the Public
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New anti-static drafting film does not store static electricity ... eraser crumbs and specks of dirt don't cling to the surface ... goes through diazo printer with the greatest of ease.

Arkwright Anti-Static film gives a better inking surface ... very durable, matte finish takes pencil or ink to give dense clear lines that reproduce sharply. Plenty of tooth too, erase quickly and easily without ghosting.

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for Diazo Process

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NEW SOUTH WALES

Friday, 2 October
12.30 p.m. Fly Past of R.A.N. Aircraft — GPO Sydney.
12.30 p.m. —
1.30 p.m. Navy Band Recital Hyde Park North.
1.30 p.m. Navy Band leads Waratah Princess Procession from Hyde Prk to Town Hall.

Saturday, 3 October
1.30 p.m. —
5.00 p.m. Garden Island Navy Dockyard and H.M.A. Ships open for Public Inspection (refer map, near centre of this magazine).

Sunday, 4 October
(NAVY DAY)
1.30 p.m. —
5.00 p.m. Church Services Naval Establishment Chapels. Members of public welcome.

H.M.A. Ships open for Public Inspection at Garden Island Navy Dockyard, junction of Cowper Wharf Road and Wylde Street, Potts Point.

WARATAH WEEK

Monday 5, to Saturday 10 October.

Tuesday, 6 October
12.30 p.m. —
1.30 p.m. Naval Apprenticeship, Diving and Submarine Displays, Hyde Park.

Wednesday, 7 October
12.00 p.m. —
1.00 p.m. Navy Band Recital Hyde Park

Thursday, 8 October
12.00 p.m. —
2.00 p.m. Navy Band Recital Wynyard Park

Saturday, 10 October
12.30 p.m. —
approx. 2.15 p.m. Naval Historical and Contemporary section of Waratah Pageant Procession led by NIRIMBA Apprentice Volunteer Band.
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* 

12-2 Counter Lunch. 6-8 p.m. Counter Teas. Barbecue of an evening 6-8 p.m. Dinner Dance every Saturday Night. Imported Floor Show. Exquisite Cuisine by Chef Goczas. 2 Cabarets every Saturday 2.30 and 8 p.m.

CANBERRA — A.C.T.

Wednesday 7 October  
Naval Board Reception
Canberra-Rex P.M.

Friday 9 October  
Naval officers to address students at High Schools

Saturday 10 October  
R.A.N. Band Recital, Queanbeyan
A.M.

Sunday 11 October  
References to Navy Week in churches
Carillon Recital: Nautical Airs
Naval Band Recital
Naval Historical Exhibition (open all week)

Monday 12 October  
Naval display
National Photograph Exhibition
Naval Photographs
Band lunchtime recital
Press, TV, radio cocktail party

Tuesday 13 October  
Band to visit various charity etc. homes
Band television programme
Naval Association Dinner

Wednesday 14 October  
Midday concert by Band
Sport competitions: golf, tennis, bowls
Classical concert by Band

Thursday 15 October  
Further charity visits by Band
Band recital

Friday 16 October  
Navy League and Sea Cadet Council meetings
Band to beat retreat
Navy Ball
Naval Association/Sea Cadets meeting

Saturday 17 October  
Racing events
Naval aircraft on display

Pog's Forty-four  
THE NAVY  
August-September-October, 1970

Page Forty-five  
THE NAVY  
August-September-October, 1970
**VICTORIA**

Victorian sailors are to be offered the traditional freedom of entry to the City of Melbourne.

No date has been announced for the ceremonial presentation, but it is likely to be during Victorian Navy Week which this year falls between 27 September and 4 October.

One of the main features of the week will be the open day at the R.A.N. training establishment at Crib Point, H.M.A.S. CERBERUS.

1970 also marks the 50th anniversary of CERBERUS and day-long displays and ceremonies will be offered to the public on Saturday, 3 October.

Saturday, November 7 – a special race meeting at Belmont Park and trotting meeting at Richmond Raceway.

Sunday, November 8 – Church Parades at St. John's Fremantle and St. Mary's Cathedral Perth.

Sunday, November 15 – Open day at H.M.A.S. LEEWIN.

**WESTERN AUSTRALIA**

**QUEENSLAND**

Friday 2 October
7.00 p.m.  Naval Re-Union Dinner at R.S.L. Club, CAIRNS. Bookings: Telephone 51 2131
8.00 p.m.  Naval Association Ball at Showgrounds Hall, IPSWICH. Bookings, 81540 (after hours 82 1629).
7.00 p.m.  T/S PALUMA open to Public at Gibson Park, STAFFORD.

Saturday 3 October.
9.00 a.m. – 11.00 a.m.  T/S BUNDABERG open to Public in BUNDABERG.
2.00 p.m. to 4.30 p.m.  T/S TYALGUM open to Public at SOUTHPORT.
7.45 p.m.  'Old Ships' Re-union at H.M.A.S. MORETON, NEW FARM. Bookings, 27618.
7.45 p.m.  Navy Re-union at R.S.L Club Room, GLADSTONE.

Sunday, 4 October (NAVY DAY)
9.00 a.m.  Wreath laying Ceremony by ex-navalmen at the War Memorial, GLADSTONE.
9.45 a.m.  Wreath laying Ceremony at the Naval Memorial Cairn at IPSWICH.
10.30 a.m.  Naval Services of Rememberance at Sea Cadet Head Quarters at Yacht Basin, SOUTHPORT.
11.00 a.m.  Seafarers' Service at St.John's Cathedral, Ann Street, BRISBANE.
3.00 p.m.  Naval Service of Rememberance and Wreath laying ceremony at the Shrine, Anzac Square, BRISBANE.
6.30 p.m.  Poolside barbecue, Manly Pool.

Monday, 5 October
7.45 p.m.  Cabaret at Naval Memorial Club, Charlotte Street, BRISBANE. Bookings 27618.

Tuesday, 6 October
12.30 p.m.  Luncheon at Naval Memorial Club, Charlotte Street, BRISBANE. Bookings 27618.
7.00 p.m.  H.M.A.S. MORETON and T/S GAYUNDAH open for public inspection at Naval Depot, NEW FARM.

Wednesday, 7 October
6.30 p.m.  H.M.A.S. BRISBANE arrives in Brisbane.
2.00 p.m. to 4.30 p.m.  Navy Golf Day at Nudgee Golf Club. Nominations Mr N. Laugher 31 0361, Ext. 210.

Thursday 8 October
2.00 p.m. to 4.30 p.m.  'At Home' in Wardroom, H.M.A.S. MORETON. (invitation only).
7.00 p.m.  H.M.A.S. BRISBANE open for public inspection in BRISBANE.

Friday 9 October
a.m./p.m.  School talks throughout Queensland
2.00 p.m. to 4.30 p.m.  H.M.A.S. BRISBANE open for public inspection in BRISBANE.
7.45 p.m.  Navy Re-union at R.S.L Club Rooms, TOOWOOMBA.
2.30 p.m.  Maritime Ball at Cloudland, BOWEN HILL. Bookings at Naval Memorial Club, Charlotte Street, BRISBANE. Phone 27618.
8.00 p.m.  Navy Week dinner at Boomerang Hotel/Motel, MACKAY.

Saturday, 10 October
2.00 p.m. to 4.30 p.m.  T/S PIONEER open to Public outer Harbour, MACKAY.
2.00 p.m. to 5.00 p.m.  Naval Week Trotting Cup at REDCLIFFE.
3.30 p.m.  Dinner to celebrate Navy Day at Wardroom Mess H.M.A.S. MORETON, NEW FARM (Invitation only).
7.30 p.m.  Dinner to celebrate the 156th Anniversary of Trafalgar Day at Anzac House, BRISBANE. Bookings Box 2100 G.P.O. BRISBANE, 2001.

Sunday, 11 October
9.00 a.m.  Naval Service of Rememberance and Wreath Laying Ceremony at TOOWOOMBA.
12.30 p.m.  Navy Bowls Day at WAVELL HEIGHTS Bowling Club. Nominations Mr L. Miles 59 2142.
2.00 p.m. to 4.30 p.m.  H.M.A.S. BRISBANE open for public inspection in BRISBANE.
2.45 p.m.  Ceremonial parade of Sea Cadets at Brisbane Grammar School Grounds, Gregory Terrace, BRISBANE.
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Periscope on Australia
by Grommel

NAVY TO NAME SHIP
AFTER CAPTAIN COOK

The Royal Australian Navy will
name one of its newest oceanographic
ships H.M.A.S. Cook to commemorate
the centenary of the discovery and
exploration of Australia's East Coast
by James Cook.

H.M.A.S. Cook is expected to
displace about 2,500 tons and the total
project cost including spares, shore
support and initial maintenance cost is
expected to be between $16 million
and $17 million. She will be equipped
with a bow thruster unit and activated
tiller to assist slow speed
manoeuvring and she will carry the
latest oceanographic sonar. Propulsion
will be by diesel engines with a variable
cam propeller.

Hunter . . . and the Hunter

As part of the Benanu Padu
exercise off East Malaysia, a Royal
Australian Navy Tracker is seen passing
above the Australian submarine
H.M.A.S. Oxley during the exercise.
Ten R.A.N. ships and Fleet Air Arm
Trackers, Skyhawk jet fighter bombers
and Wessex helicopters are filling the
R.A.N.'s role in the five nation exercise
which ended last June.

BIG MARITIME EXERCISE
OFF WESTERN AUSTRALIA

Australian, British and New
Zealand ships and aircraft will take
part in a major maritime exercise off
Western Australia during November.

The exercise, nicknamed Swan Lake
will be under the operational command
of the Flag Officer Commanding the
Australian Fleet, Rear Admiral N. D.
Stevenson, who will be embarked in the
R.A.N. flagship the aircraft carrier
H.M.A.S. Melbourne.

Units of the Royal Australian Navy,
Royal Navy, Royal New Zealand Navy,
Royal Australian Air Force and the
Royal New Zealand Air Force will take
depth of the exercise will involve
the initial deployment of maritime
forces from the East Coast of Australia
to the Indian Ocean. Then will follow
mine counter measure, submarine,
weapon training and aircraft exercises.

Swan Lake will be the third major
maritime exercise in which Australia,
Britain and New Zealand has taken
part this year.

700th for TRACKERS

Commander M. F. Matthews,
Commander Air in the Royal
Australian Navy's flagship H.M.A.S.
Melbourne, congratulates the
Commander of the Air Group on the
Aircraft carrier, Commander T. A.
Dadswell, on achieving his 700th deck
landing. Commander Dadswell, who
made the landing whilst Melbourne was
off the East Coast of Malaysia, is now
only six landings short of the record
set by Lieutenant-Commander Fred
Lane, Lieutenant Commander (Flying
in the Melbourne. Commander Dadswell, who
has flown Fireflies, Sea Furies, Gazelles and Sycamore
helicopters, made his 700th landing in the Grumman Tracker of Melbourne's
816 Squadron.

NEW NAVAL AIRCRAFT

New South Wales skies will soon
echo to the sound of the Navy's newest
training aircraft.

The Macchi jet trainer will soon
replace the existing Vampire Trainers
and Sea Venoms which have been in
service since 1954 and 1956
respectively. The Italian-designed
Macchi, built in Australia under licence
by the Commonwealth Aircraft
Corporation of Fishermans Bend, Melbourne, is a twin seat trainer
capable of cruising speeds of around
500 M.P.H. A total of ten aircraft and
their necessary support equipment will
be bought for $7.6 million

The aircraft will fly as part of the
shore-based 724 Squadron, and are not
intended for operational carrier flying
on the aircraft carrier, H.M.A.S.
Melbourne. Maintenance personnel are
currently being instructed on the
Macchis.

NAVAL APPRENTICES
PASSING OUT PARADE

For the first time four sailors of the
Papua/New Guinea Division of the
R.A.N. passed out as qualified engine
room artificers at a parade of 95 Naval
Apprentices and 10 Mechanicians at
H.M.A.S. Viznogr, last June. Rear
Admiral R. L. Peck, Second Naval
Member, reviewed the parade and later
talked with the four New Guinea
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DESTROYER CONTRACTS
The new destroyer for the R.A.N. represents the first major warship designed specifically for Australia's needs. The ship which is expected to be about 3,000 tons displacement will have high speed and long endurance and will be propelled with gas turbines. Gas turbines offer significant personnel and weight savings, and the use of well-proven aero gas-turbines modified for marine use offers the advantage of modern technology developed at little expense to the shipowner.

The design of the ship will take into account the Australian environment which will be reflected by the standard of accommodation for ship personnel.

Approval has been given for the preliminary design to be developed further with a detailed design as the next stage.

Construction of the destroyers has not yet been authorised, and the number required is still under consideration.

The fact that the major part of the design is taking place in Australia provides an opportunity to increase the Australian content of the ship.

British Boat industry Trade Mission To Australia
29 October to 10 November 1970

New British marine equipment will be promoted in all States of Australia when nine firms producing boating equipment, hardware and accessories commence their sales drive their first in Australia.

Products to be promoted by the mission include hardware, inflatables, clothing, electronics, fittings, paint and underwater equipment, and representatives hope to meet shipbuilders, yacht clubs, firms and organisations operating in the boating field.

British boating exports had risen from £4,900,000 ($10,500,000) in 1968 to £7,500,000 ($16,071,450) last year and it has been predicted that the figure for 1970 would show a similar improvement.

The mission will be led by Mr. H. S. Lawrence, managing director of Simpson-Lawrence Ltd., who will be promoting hardware. Other members of the mission will be:
- K. F. Russel, of Avon Rubber Co. Ltd. (inflatables),
- G. F. Brown, of Armshire Reinforced Plastics Ltd. (cold injection moulding of fibre glass),
- N. O. Gogen, of Typhoon (Aqua Products) Ltd. (underwater equipment),
- E. W. Whiting, of International Yacht Paints;
- E. J. Mendham, of Jack Holt Ltd. (dinghy fittings); and

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THE NAVY
August-September-October, 1970

NEW SOUTH WALES
QUARTERLY REPORT OF PROCEEDINGS

This report covers training and other activities carried out by the Naval Reserve Cadets in New South Wales for the period 1 April to 30 June 1970.

Weekend training postings were to the following warships:

<table>
<thead>
<tr>
<th>Ship</th>
<th>Dates</th>
<th>No. of Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.M.A.S. Stalwart</td>
<td>3 April-5 April</td>
<td>34</td>
</tr>
<tr>
<td>H.M.A.S. Perth</td>
<td>10 April-12 April</td>
<td>21</td>
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<tr>
<td>H.M.A.S. Paramus</td>
<td>17 April-19 April</td>
<td>23</td>
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<tr>
<td>H.M.A.S. Curlew</td>
<td>17 April-19 April</td>
<td>14</td>
</tr>
<tr>
<td>H.M.A.S. Stalwart</td>
<td>1 May-3 May</td>
<td>34</td>
</tr>
<tr>
<td>H.M.A.S. Perth</td>
<td>1 May-3 May</td>
<td>21</td>
</tr>
<tr>
<td>H.M.A.S. Stuart</td>
<td>8 May-10 May</td>
<td>22</td>
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<tr>
<td>H.M.A.S. Morehu</td>
<td>15 May-17 May</td>
<td>24</td>
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<tr>
<td>H.M.A.S. Perth</td>
<td>12 May-14 May</td>
<td>21</td>
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<tr>
<td>H.M.A.S. Perth</td>
<td>26 May-28 May</td>
<td>21</td>
</tr>
</tbody>
</table>

Six Units carried out their annual 22 Efficiency Shoot in H.M.A.S. Watson:

- T.S. Paramus (2 May)
- T.S. Hawkebury (9 May)
- T.S. Sirius (30 May)
- T.S. Warrego (6 June)
- T.S. Shropshire (20 June)
- T.S. Condit (27 June)

In addition, a range Day at Anzac Rifle Range was arranged for the Sydney Grammar School Naval Reserve Cadet Unit.

The Representative of the Naval Officer Commanding East Australia Area, Commander J. St. B. More carried out the annual inspection of the following units:

- April 4: T.S. Condit (Manly)
- April 11: T.S. Shropshire (Canterbury)
- April 18: T.S. Warrego (Hunter Hill)
- May 9: T.S. Sydney (Lavender Bay)
- May 16: T.S. Sirius (Darling)
- May 23: T.S. Paramus (Kyabram)
- June 3: Sydney Grammar School Naval Reserve Cadet Unit
- June 6: T.S. Albatross (Wollongong)
- June 10: St. Ives High School Naval Reserve Cadet Unit
- June 19: The Scots College Naval Reserve Cadet Unit

The report also covers training and other activities carried out by the Naval Reserve Cadets in other units throughout the state, including the annual inspection of units by the Senior Officer.

In addition, there is a mention of the presentation of the Duke of Edinburgh's Personal Banner to the Australian Army Cadet Corps during the Remembrance Parade of the Scots College Naval, Army and Air Force Cadets.

The report also covers the appointment of personnel to higher rank and the determination of the suitability of applicants for appointment to the Cadet Force.

No periods of continuous training were carried out during the period under review.

Three Selection Boards were convened in H.M.A.S. Watson to examine adult personnel eligible for promotion to higher rank and to determine the suitability of applicants for appointment to the Cadet Force.

The report also covers the activities of the Navy League, including the donation of outboard motors for the boats of the Sea Cadet Corps in South Australia.

SOUTH AUSTRALIA
South Australian Division Sea Cadet Corps Launch
And Name Two Safety Boats.

On Sunday 22 March in the presence of the Naval Officer-in-Charge, South Australia (Commander J. LANCASTER R.A.N.) and Mrs. LANCASTER, Members of Navy League and the parents of Sea Cadets from T.S. Adelaide, Mr. Tom Francis-Matters, the South Australian President of Navy League handed over to the Senior Officer of the South Australian Division (Commander F. B. HOPKINS, M.B.E., V.R.D. R.A.N.R.) two Safety Boats for use in Sea Cadet units in South Australia.

The boats (two photos) are identical Swiftcraft of the Kingfisher class. Constructed of fibre glass, the boats are 14 feet 8 inches long and have a beam of 5 feet 6 inches and have a maximum speed of about 30 knots and a splendid sea-keeper capability.

A Naval Board instruction directs that a safety boat must be in attendance whenever Sea Cadets carry out sailing in their 27 foot whalers or 14 foot skiffs and the South Australian Division of the Navy League took up the challenge to raise funds and provide a safety boat to each Sea Cadet unit. B.P. (AUSTRALIA) LTD., Sir Norman & Lady Jade and many other Navy League supporters made donations to the fund. Outboard motors for the boats were purchased by
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The Sea Cadet units from funds raised by their Parents and
Friends Committees.

VICTORIA
Congratulations to Lieutenant Commander Ray
Applebee on receiving his long service medal. Lieutenant
Commander Applebee – of T.S. Voyager, Williamstown, is a
member of the Victorian Police Force. The medal was (see
photo) presented at the Annual Inspection of the Unit, by
Commander G. J. Harle, M.B.E., R.A.N. T.S. Voyager has very
close associations with the police force and many Officers
and instructors are policemen.

Twenty Cadets and four Officers and Instructors from
T.S. Voyager made a very successful visit to Tasmania in the
Princess of Tasmania on 29 July. A visit to three northern
Tasmanian Units, and an organised tour by bus of the coast
and rural areas was of great interest to the Cadets. On the
return journey the Strait lived up to its reputation as one of
the roughest passages in the world, and the greenhorns were
soon discovered.

T.S. Barwon has been named the best Unit in Victoria for
1970. This very active Unit, situated on Corio Bay, Geelong,
was inspected on 27 September by The Director of Naval
Reserves – Captain B. L. Cleary, R.A.N., who arrived at
the Unit aboard H.M.A.S. Arrow.

During Navy Week – T.S. Melbourne, Voyager and
Barwon will hold open days on 3 October. This is the first
time that Victorian Units of the Corps have been asked by the
R.A.N. to participate in this way during Navy Week. The
response has been most enthusiastic. It is hoped that
members of the League and general public will take this
opportunity to see the Cadets in action.

The following promotions have been approved in the
Victorian Division:

T.S. Barwon:
S.C. Lieutenant J. Baker to
Lieutenant Commander.

S.C. Lieutenant D. McGillvray to
Lieutenant Commander.

Sea Cadet Sub-Lieutenant L.G.
Schilling to Sea Cadet Lieutenant.

Sea Cadet Sub-Lieutenant J. H. Down to
Sea Cadet Lieutenant.

Petty Officer Instructor A. C. Grubb to
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Further information is available from travel agents or Shaw Savill Line, Sydney, Melbourne, Perth; Dalgety Travel, Brisbane and Adelaide; C. Piesse & Co. Pty. Ltd., Hobart.

A world of your own. Shaw Savill.
First of the fleet ballistic missiles, surges from the sea after being launched by the submarine U.S.S. George Washington, ignites and then rears on to its target. The U.S. Navy observed the 10th anniversary of the first submerged launch of the Polaris A-1 on 20 July, 1970.

"Polaris . . From out of the deep to Target . . Perfect"

This brief message from the commanding officer of the nuclear submarine U.S.S. George Washington to the President and the nation announced that Polaris, a revolutionary concept in seaborne weaponry, was a reality.

The first firing of the Navy's Polaris A-1 missile from the George Washington, cruising submerged off the Atlantic coast near Cape Kennedy, took place at 1:39 p.m. (EDT) on 20 July, 1960.

Less than three hours later, a second missile surged from the calm surface of the sea, ignited and then raced to its intended target more than 1,000 miles away.

Success of these two launches — where, for the first time, the stealth and endurance of the nuclear submarine were mated with the defensive capability of the ballistic missile — provided the cornerstone on which America built its global strategy to prevent nuclear war.

It was a policy of deterrence. The United States let it be known that it would never initiate nuclear war. But it also gave warning that a nuclear attack on this nation would trigger instant and devastating retaliation.

Polaris, together with other weapons systems in existence or on the drawing boards, put teeth into the U.S. policy of deterrence.

A decade after the first submerged firing of Polaris, this policy remains a basic tenet of our defense structure. The capability and reliability of the Fleet Ballistic Missile weapons system has gone unchallenged.

What were the events which lead to the decision to develop Polaris? Who were the people behind the technological breakthroughs which made the F.B.M. possible?

Polaris had its beginning in September 1955 when the National Security Council recommended to President Dwight Eisenhower that the U.S. develop a seaborne nuclear deterrent. The President agreed.

On 15 November, 1955 the Strategic Systems Project Office, originally known as Special Projects Office, was established by the Secretary of the Navy and charged with the development of a seaborne nuclear deterrent.
when S.S.P.O. received the green light to proceed with Polaris, the only part of the system in existence was the nuclear submarine. Even this remarkable ship had to be redesigned. The rest of the system had to be developed from the ground up.

After studies during 1956, however, it was decided that complete responsibility for development of Polaris—from missiles to guidance to launchers—be turned over to the Navy.

When S.S.P.O. received the green light to proceed with Polaris, the only part of the system in existence was the nuclear submarine. Even this remarkable ship had to be redesigned. The rest of the system had to be developed from the ground up.

Several leading American companies, with Lockheed Missiles and Space Company as prime missile contractor, began work on various phases of Polaris. In all, the F.B.M. represents the efforts of over 20,000 private contractors, universities and government agencies.

It was estimated that it would take 10 years for Polaris to become a reality. Planners, however, failed to foresee the dedication with which both Navy and industry people applied themselves to the program.

In just 48 months—five years earlier than the original target date of 1965—the Polaris F.B.M. weapons system was operational and guarding the United States against nuclear attack.

The U.S.S. George Washington slipped quietly out of Charleston, and into the Atlantic on 15 November, 1960. It submerged into the protective depths of the ocean and began history’s first deterrent patrol.

The mission of S.S.P.O. was one of project management, to coordinate development and production efforts of industrial contractors, research labs and government agencies involved in the program.

Rear Admiral William F. “Red” Raborn was named S.S.P.O.’s first director. He set up shop in the old Navy Munitions building in Washington, D.C., and began assembling the team which would develop and produce the F.B.M. weapons system.

As originally set up by the Department of Defense, the Army and Navy were to jointly develop a F.B.M. system. The Army was to develop the missile while the Navy was to develop the launching system.
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Illustrated at left is one of the latest high-performance, closed-circuit portable units, the VACU BLASTER, as recently supplied to the R.A.N. dockyards and the Shell Company, Borneo. Such units are extensively used in dockyards throughout the world. The control valve permits the operator full control of the blasting process even though working some distance from the machine in a confined all-steel gun body.

NEW POSEIDON C-3 TO JOIN U.S. DETERRENT ARSENAL IN EARLY '71

Poseidon, newest in the Navy’s line-up of fleet ballistic missiles, will join America’s arsenal of deterrent weapons in early 1971.

Designated the C-3, Poseidon was developed by the Strategic Systems Project Office, S.S.P.O. is the project management team which co-ordinates efforts of private contractors involved in the nation’s F.B.M. program.

A completely new design in missiles, the Poseidon offers a number of improvements and innovations over both the Polaris A-2 and A-3 missiles which are currently being carried aboard the Navy’s fleet of 41 F.B.M. submarines during deterrent patrols.

Poseidon has the same range as the 2,800-mile Polaris A-3, but is larger, heavier and capable of carrying a much greater payload. And like the A-3, it will be able to reach any spot on earth from its firing point beneath the sea.

The Poseidon weighs 65,000 pounds at launch, more than twice the weight of the Polaris it complements. It is 34 feet long, two feet longer than the A-3 and three feet longer than the A-2, and six feet in diameter compared with Polaris 4'/2 feet.

S.S.P.O. had little time to reflect on its successes. During the next nine years, all 41 of the nuclear powered Polaris submarines would be constructed and commissioned. The Polaris A-1 missile would be replaced by the more advanced A-2 and A-3 missiles. And an entirely new fleet ballistic missile, the Poseidon C-3, will become operational in early 1971.

S.S.P.O.’s mission remains that of providing the F.B.M. force with the hardware necessary to continue effective operation. Actual command of the F.B.M. submarines fall under the commanders-in-chief, Atlantic and Pacific. Target selection is a function of the Joint Chiefs of Staff. But only the President of the United States can initiate the sequence of events necessary to actually fire a Polaris missile at an enemy.
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TEST PLATFORM — The U.S.S. Observation Island fires a Poseidon C-3 missile off the coast of Florida near Cape Kennedy as a prelude to the new P-BM joining America's deterrent force in early 1971. Once a cargo ship, the Observation Island has played a key role in the development and testing of both the Polaris and Poseidon missile...

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It carries M.I.R.V. (multiple independently-targeted reentry vehicle) warheads. More simply, Poseidon is equipped with a number of warheads which can be individually programmed to hit pre-selected targets along its sub-orbital route.

Besides adding punch to America's deterrent force without increasing the size of the nation's F.B.M. submarine fleet, the new Poseidon's multiple warhead feature greatly complicates a potential enemy's capability to defend against it.

Scheduled to be carried in 31 of the Navy's 41 F.B.M. subs by the mid-1970s, Poseidon is in its final test and evaluation phase at the Air Force Eastern Test Range, Cape Kennedy. Production of Poseidon was approved in December 1966. A contract for missile development and production was awarded to Lockheed Missiles and Space Company. The first land test pad launch of the new missile occurred on 16 August, 1968.

Since then, Poseidon has undergone a number of successful tests at Cape Kennedy, including three from the U.S.S. Observation Island (AG-154). The Observation Island is a unique surface ship which carries a complete F.B.M. weapon system, including launch tubes, navigational and fire control equipment and a missile check-out system.

The first submerged launch of Poseidon from a submarine is expected sometime this fall, about 10 years after the first underwater launch of the Polaris A-1. The A-1 was the Navy's first F.B.M. capable of being fired from a submerged submarine.

Tenth anniversary of the first A-1 launch, from the U.S.S. George Washington (SSBN 598) submerged off the coast of Cape Kennedy, was observed on 20 July, 1970.

The new Poseidon is designed for use in the Navy's existing F.B.M. submarines with a minimum of structural changes. F.B.M. subs are being converted to carry Poseidon as funds are authorized by Congress and during their regular overhaul periods.

Like Polaris, 16 Poseidon missiles can be carried by each F.B.M. submarine.

The first nuclear-powered F.B.M. sub to be converted to carry Poseidon was the U.S.S. James Madison (SSBN 627), which entered General Dynamics' Electric Boat Division shipyard at Groton, Connecticut, in February 1969.

Following sea trials in the Atlantic, the 425-foot Madison will fire the first Poseidon, from a submerged vessel, later this year.

Congress has authorized and funded conversion of seven other F.B.M. submarines through fiscal year 1970. Scheduled for conversion during regular overhaul periods are the Daniel Boone (SSBN 629), Von Struben (SSBN 632), John C. Calhoun (SSBN 630), U.S. Grant (SSBN 631), Tecumseh (SSBN 628), Sam Rayburn (SSBN 635) and the Pulaski (SSBN 633).

Poseidon was named for the god of the sea in Greek mythology.

F.B.M. COMPARISONS

Following are comparative figures for the Navy's fleet ballistic missiles, all of which were operational in various F.B.M. submarines shortly after the first of this year:

<table>
<thead>
<tr>
<th>F.B.M.</th>
<th>Polaris A-2</th>
<th>Polaris A-3</th>
<th>Poseidon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>31 feet</td>
<td>32 feet</td>
<td>34 feet</td>
</tr>
<tr>
<td>Diameter</td>
<td>54 inches</td>
<td>54 inches</td>
<td>74 inches</td>
</tr>
<tr>
<td>Weight</td>
<td>20,000 lb.</td>
<td>30,000 lb.</td>
<td>65,000 lb</td>
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<tr>
<td>Propellant</td>
<td>Solid Fuel</td>
<td>Solid Fuel</td>
<td>Solid Fuel</td>
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<tr>
<td>Numbers Stages</td>
<td>2</td>
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<td>2</td>
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<tr>
<td>Guidance</td>
<td>Inertial</td>
<td>Inertial</td>
<td>Inertial</td>
</tr>
<tr>
<td>Range</td>
<td>1,725 Mi.</td>
<td>2,880 Mi.</td>
<td>2,880 Mi.</td>
</tr>
<tr>
<td>Warhead</td>
<td>Nuclear</td>
<td>Nuclear</td>
<td>Nuclear</td>
</tr>
</tbody>
</table>

PAD LAUNCH – A Poseidon C-3 is fired from a land pad at Cape Kennedy, for a test flight down the Air Force Eastern Test Range. Poseidon is the newest of the Navy's fleet ballistic missiles.
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The Navy.
SYDNEY, N.S.W.

Dear Sir,

I was pleased to read the Defence Report, 1969, by Mr. Fairhall, M.P. in the November-January, 1969-70, issue of the NAVY magazine.

It was a very compact report of the service and was well presented. After studying the Fleet list, I am surprised to find that there are only 22 H.M.A.S. ships in the Fleet, fitted specifically, in the defensive role.

Three of these are in the reserve Fleet list, and another two are used as training units. This leaves 17 operational units for defensive purposes. If Minesweepers and Mine-hunters are to be classified as defensive, then there are 19 operational ships in the defensive Service. This is 7 less than half the number of ships in the whole Service.

The Flagship Melbourne can be used in two or three roles. (1) Provide air cover to coastal Convoys, (2) Provide air cover to several units on missions. (3) Using aircraft to strike at enemy Convoys and within the operational sphere of its aircraft at any given time. (i.e. The Melbourne is limited to the operational sphere of its aircraft at any given time. Most of these aircraft have an operational range of between 800–1000 miles. Melbourne herself can alter position 400-500 miles a day. In two weeks, she can travel from Brisbane, around the top of Australia, to Perth. But an enemy force can attack the lower Australia within a matter of days, while Melbourne is around the top. – Paratroopers, or a sea landing force, etc.)

With the above in mind, I would like to describe a type of ship which could be deployed as “mini-carriers” to areas around the coast. Enclosed is a news photograph of the Brisbane Trader. Like
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her sister ships Sydney Trader, and
Townsville Trader, she is a roll on, roll
off, container cargo vessel.

General Statistics
Length - 448'
Beam - 62'
Drain - (not known)
Tonnage - (1) Empty 4000 tons.
(2) Loaded 6500 tons.
Propulsion - 2 M.A.N. Diesels. Each
developing 3320 B.H.P. Speed - 17'
Knots. (Maximum.)

(2) Whole of superstructure could be
replaced with a new section.

(1) South Ramp could be replaced
with a cover section for the whole stern.

(5) Suitable Defensive Weapons
could be (a) Two multiple "Sea - cat"
systems. (One each side, abreast the
funnels). Or Four multiple systems.
(Two each side, the funnels).
(6) A twin 5 inch turret could be
situated forward of the bridge. (on the
forecastle).
(7) A Radar Maimant could be
situated a centre of the superstructure.

雄 in incorporating search and tracking radar.
(8) Aircraft (a) 2 - 4 V/TOL
Aircraft. and/or 2 - 4 Sea King or
Wessex Helicopters. (Combination
V/TOL Aircraft [reconnaissance
purposes] and 4 Helicopters [Anti
sub role].) (b) 4 - V/TOL Aircraft
(Small strike force or convoy cover)
and 2 - Helicopters [Anti-sub role].
(9) Aerial Defensive/Strike Missiles
Systems (a) Sparrow Systems. (b)
Sidewinder Systems. (c) Snee 68 m.m.
Rockets.

Others - Fixed Armament 20
m.m. Cannons - 2. (1) Wings. (2)
Fuselage, or (3) In a Gun Pod mounted
under the Fuselage.
(10) Hangar and Engineering shops
located within the hull and under the
flight deck.
(11) Flight Deck - The aft end of
the Crane deck is used for mooring
Rollards. Cable Capstan Engines and
Spray Ramp control cabinets etc. This
section should be replaced with a flat.

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Page Seventy-two
Commonwealth Naval Forces, from 1901 to 1912. There is a model of her in the Melbourne Public Library.

Yours faithfully,
1St Lt. R. S. Vieale
Commander R.A.N.V.R. Retd.

3 August, 1970

The Editor,
"The Navy"
Sydney, 2001, N.S.W.

Dear Sir,

An article appeared in the Melbourne "Herald" on the 10 July to the effect that following a New Zealand Government decision to drop support for the School Cadet System, Auckland parents formed a committee to save New Zealand's Sea Cadets and Air Training Corps.

If the report is correct, and the Sea Cadets and Air Training Corps feel threatened with loss of support, this would appear to contrast with the situation in Australia where, at least as far as Sea Cadets are concerned, the Government proposes increased support.

I do not think any Service expects a large proportion of Cadets to enter the permanent forces - medical standards and educational requirements alone deter quite a number from becoming full-time sailors, soldiers or airmen. Even if they do want to. The cadet who does join, however, at least knows what he is in for, and the early training must be of value to both the boy and the Service.

Quite apart from the direct effect on the Services which can be measured are the indirect results which are incalculable. Thousands of 14 to 18 year old youngsters pass through the Cadet organisations; most gain some idea and an appreciation of the defence forces, and at the same time acquire a sense of self-discipline, self-reliance, and an ability to work with others, which must benefit the whole community. Also, the effect on the boy's family and his friends cannot be disregarded.

If the school cadet system is not working satisfactorily in New Zealand it is surely up to the Services concerned to make efforts to ensure that it does work: I do not believe that any Government in this day and age can afford not to support organisations which encourage self-discipline, self-respect, and the realisation that one does not live alone in what is after all, a rather hostile, turbulent world.

Yours faithfully,

(Sgd) E.G. Evans
President,
The Navy League of Australia
(Victoria Division)

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“THE ORDER WENT OUT
—RUN AMOK GENERALLY”

BY JACK MILLAR

First submarine to breach The
Dardanelles and reach the Sea of
Marmora created havoc among Turkish
defences — daring exploits of A.E.2.

Australia today possesses four
submarines — H.M.A.S. Oxley,
Otway, Ovens and Onslow.

Their presence is a reminder that
the R.A.N. previously had a fleet of
submarines, the first two dating back
to a few months prior to World War I.
These were the A.E.1 and A.E.2,
whose crews were half Australian and
half English. Early September, 1914,
saw them attached to the Australian
fleet for the capture of German New
Guinea.

It was while on patrol off Cape
Gazelle on the 14th that A.E.1 failed
to return. Despite an intensive search
no trace of her was ever found. All
sorts of rumours, blaming “German
treachery,” began to circulate, but the
official view ascribed her loss to
striking a coral reef, which ripped
open her thin steel plates. Later A.E.2
returned to Sydney, from where she
was ordered to the Mediterranean.
Travelling in convoy from Albany, she
was towed behind the transport
Berrima.

On arrival in the Mediterranean
A.E.2 was attached to the British
squadron engaged in the Gallipoli
operations. She did not have long to
wait for action, her gallant captain
receiving orders to attempt the narrow
35 mile passage of the Dardanelles, to
the Sea of Marmora and there block
Turkish shipping coming from the
Bosphorus.

Commodore (later Lord) Keyes,
Chief-of-Staff to Admiral de Robeck,
put it more fittingly when he said
“Run amok generally.”

And A.E.2 did just that. Her
captain — Lieut. Cdr. New Dacre
Stoker — and his crew knew the odds
were stacked against them, but nothing
daunted, in they went.

Two submarines had already tried
and failed. Later, two French boats

A.E.2 with the French cruiser
MONTCLAIR, lying off Rabaul at the
occupation of New Britain, September,
1914.
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On April 29th Stoker rendezvoused with the British submarine F/14, which had successfully followed him through the Dardanelles. Arrangements were made to meet again at 10 a.m. the following day.

With torpedoes expended, A.E.2 spent the night on the bottom off Marmora Island.

Early next day Stoker re-charged batteries and proceeded to the rendezvous. No sooner had he arrived than two torpedo gunboats were observed closing at full speed.

A.E.2 dived, but inexplicably broke surface again, whenupon the gunboats opened fire at close range. In desperation a forward tank was flooded and A.E.2 dived rapidly by the bows so fast that her downward plunge could not be arrested.

Fitted with only 100-foot depth gauges, this was quickly reached and passed.

By going full-speed astern and blowing main ballast, the sub, after a long interval, began to rise very quickly. So much so, that all efforts to check her failed, and A.E.2 once more broke surface stern first.

The inclination prevented Stoker from observing through the periscope.

Within seconds the engine-room was hit and holed in three places. Unable to dive or see, Stoker ordered all hands on deck, himself following after opening the tanks to flood.

A.E.2 tank within minutes, the crew of whom had belived magnificently throughout the entire patrol — being picked up by the gunboats and transferred to a Turkish prisoner-of-war camp. No lives were lost.

Stoker’s sinking of the Turkish cruiser had important repercussions elsewhere. Shortly after the event he managed to get a wireless signal off to Admiral de Robeck with the good news.

So it happened that all was not well with the Anzac landing near Gaba Tepe. General Birdwood’s troops had taken a terrific mauling, and he expressed doubts as to their ability to hold on under similar conditions as on the day of landing. Evacuation was mooted.

General Sir Ian Hamilton replied that the troops would have to dig in and stick it out, then went on to quote A.E.2’s success in sinking a cruiser off Chanak. The Anzac’s did stay, and were in fact far from demoralised. As they battled up the cliffs of Gallipoli.
all cheered the notices displayed as they advanced. "Australian sub A.E.2 first through the Dardanelles. Sinks enemy cruiser. Advance Australia."

The deeds of A.E.2 and the Anzacs ashore are now part of Australia's proud history.

After a 21-day patrol E.14, with many successes to her credit, once more negotiated the straits and returned to base. She was followed in by E.11, which included a sortie into Constantinople harbour itself. In a highly successful 20-day patrol E.11 sank a gunboat, two ammunition ships, two troop transports, as well as causing a third to beach. She then returned to base.

With the disappearance of A.E.1 and the loss of A.E.2 Australia was left without any submarines.

This was rectified in 1919, when the Admiralty, in recognition of the deeds of the R.A.N. during the war, gave the Commonwealth Government six destroyers and a flotilla of six submarines – J1, 2, 3, 4, 5 and 7.

These 1,820 ton craft built in 1916 carried one 4-inch gun, six 18-inch torpedo tubes and could cruise at 19 knots on the surface and 9% submerged. Five were disposed of in 1924 (for $66,677) while the sixth, J7 was sold at the end of 1929.

In 1926 Australia had two submarines, the Oxley and Otway, built in England. With the coming of the depression they proved too costly to operate, and in 1931 were presented to the Royal Navy.

Otway survived World War II, winning battle honours in the Atlantic, to be broken up in 1945. Oxley was not so fortunate, surviving only a bare week, to become one of the Royal Navy's first losses. By one of those tragic mishances which sometimes occur in wartime, she was torpedoed by another British submarine, the TRITON while on patrol in the North Sea on September, 10th, 1939.

At the time of this regrettable accident both submarines were out of their scheduled positions.

The present Oxley, built at Greenock in 1966, and joined over the following few years by her sisters Otway, Ovens and Onslow, have once more given Australia a formidable flotilla of the latest conventional undersea craft proud additions to the R.A.N. fighting strength.

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