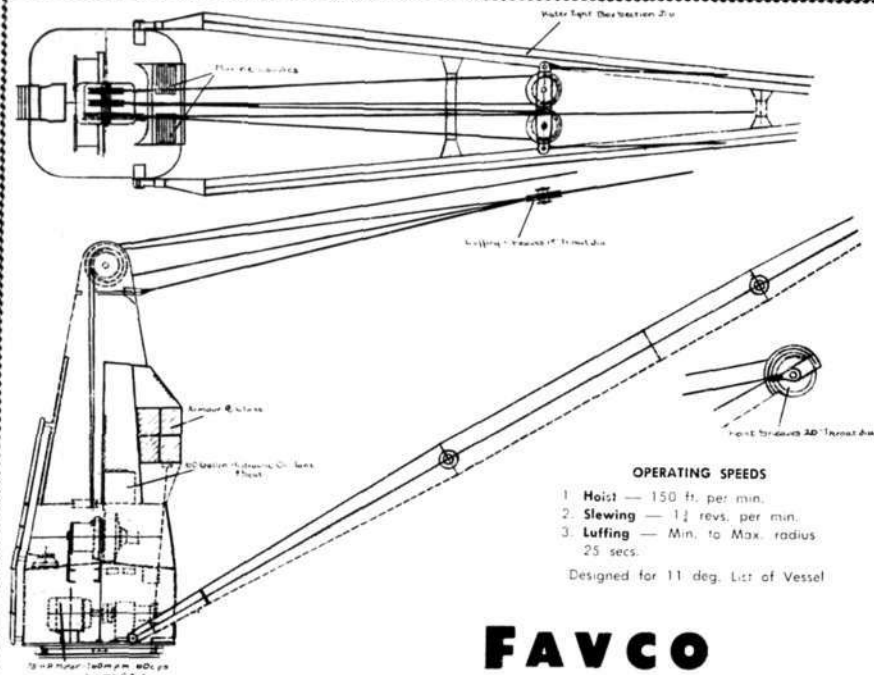


February - March - April  
1966

15 cents

# THE Navy





#### OPERATING SPEEDS

- 1 Hoist — 150 ft. per min.
- 2 Slewing — 1½ revs. per min.
- 3 Luffing — Min. to Max. radius 25 secs.

Designed for 11 deg. List of Vessel

## FAVCO

## STANDARD DECK CRANES

with totally enclosed pressurised engine room.  
ELECTRO-HYDRAULIC — infinitely variable in  
all motions. Alternatively Diesel-Hydraulic.

3 TONS CAPACITY  
6 TONS CAPACITY  
15 TONS CAPACITY  
21 TONS CAPACITY

Manufactured and Supplied by

## FAVELLE INDUSTRIES PTY. LTD.

300-310 Botany Rd., Alexandria — Phone 69-6654

# THE NAVY

The magazine of the Navy League of Australia

Vol. 28

FEBRUARY-MARCH-APRIL, 1966

No. 1

### CONTENTS

	Page		Page
Vice Admiral Sir Hastings Harrington Buried at Sea	2	U.S. Submarine Visits Sydney	24
Retirement of Commander D. J. Mort, C.F.M., A.S.C.C.	3	The Civilian Arm of the Navy	27
Periscope on Australia	5	Book Review	29
Rear Admiral Becher Retires	9	U.S. Naval Observatory	31
Change in Fleet Command	11	What's New	37
Nautical Notes from all Compass Points	12	At Home with Pix	43
Korean LST in Vietnam	23	Swimming Carnival	47
		New Ships of the World's Navy	48

Plus sundry stories and photographs

The views expressed in articles appearing in this publication are those of the authors concerned. They do not necessarily represent the views of the editor, the Navy League, or official opinions or policy

Published by the Navy League of Australia, 66 Clarence Street, Sydney. MA 8784

Postal Address: Box 1719, G.P.O., Sydney, N.S.W.

EDITOR: D. P. Trickett, Esq., Box C178, Clarence Street Post Office, Sydney, N.S.W., Australia

ADVERTISING AND PUBLICATION: PERCIVAL PUBLISHING CO. PTY. LTD.

SYDNEY 108 Henderson Rd. Alexandria Phone: 69-6231	MELBOURNE 17 Elizabeth St. Melbourne Phone 62-6411	ADELAIDE 17 Currie St. Adelaide Phone 51-6225	BRISBANE 546 Queen St. Brisbane Phone 31-2531	PERTH 63 St. George's Tce. Perth Phone 23-2031	HOBART 152 Collins St. Hobart Phone: 23-732
---	---	--	--	---	--

## THE NAVY LEAGUE OF AUSTRALIA

PATRON: The Governor-General, His Excellency the Right Honourable Lord Casey, P.C., G.C.M.G., CH., D.S.O., M.C., K.St.J.

### FEDERAL COUNCIL

President: Rear Admiral H. A. Showers, C.B.E.  
Deputy-President: Lieut. Cdr. J. B. Howse, V.R.D., R.A.N.V.R.  
Secretary: Lieut. J. L. Tyson, R.A.N.R.

### New South Wales Division

President: Rear Admiral H. A. Showers, C.B.E.  
Secretary: Lieut. Cdr. A. A. Andrews, M.B.E., R.A.N., Reid, 28 Royal Street, Chatswood, Sydney.

### Victorian Division

Patron: His Excellency, the Governor of Victoria  
President: Randall H. Collins, Esq.  
Secretary: Miss E. C. Shorrocks, 528 Collins Street, Melbourne, C1

### Queensland Division

Patron: The Governor-General, His Excellency the Right Honourable Lord Casey P.C., G.C.M.G., CH., D.S.O., M.C., K.St.J.  
President: Cdr. N. S. Pixley, M.B.E., V.R.D., R.A.N.R. (Retd.)  
Hon. Secretary: G. B. O'Neill, Esq., Box 3766, G.P.O., Brisbane

### Australian Capital Territory Division

President: Lieut. Cdr. J. B. Howse, V.R.D., R.A.N.V.R.  
Hon. Secretary: Lieut. Cdr. D. M. Blake, R.A.N.V.R., 60 Limestone Avenue, Ainslie, A.C.T.

### Northern Territory Division

Patron: His Honour the Administrator  
President: Lieut. Cdr. J. J. Ravenscroft, V.R.D., R.A.N.V.R.  
Hon. Secretary: Mrs. V. M. Slide, c/o H.M.A.S. "Melville", Darwin, N.T.

### AUSTRALIAN SEA CADET COUNCIL

### Representatives of the Naval Board:

Director of Naval Reserves, Captain A. H. McIntosh, R.A.N.; Lieut. Cdr. E. D. Sandberg, R.A.N.

### Navy League:

Rear Admiral H. A. Showers, C.B.E.; Lieut. Cdr. J. B. Howse, V.R.D., R.A.N.V.R.

### South Australian Division

Patron: His Excellency, the Governor of South Australia  
President: F. M. Dunn, Esq., Secretary: R. R. Sutton, Esq., 30 Pirrie Street, Adelaide

### Tasmanian Division

Patron: Vice Admiral Sir Guy Wyatt, K.B.E., C.B., R.N.  
President: Cdr. A. H. Green, O.B.E., D.S.C., R.A.N. (Retd.)  
Hon. Secretary: Lieut. Cdr. J. C. Mahon, R.A.N.R., 11 Quorn Street, Sandy Bay, Hobart, Tasmania

### Western Australian Division

Patron: His Excellency, the Governor of Western Australia  
President: Roland Smith, Esq.  
Hon. Secretary: R. A. Hannah, Esq., 182 Coode Street, Como, W.A.

A Representative from each Navy League Division, also  
S.C. Cdr. L. E. Forsythe  
Lieut. Cdr. F. G. Evans, V.R.D., R.A.N.V.R.  
Hon. Secretary: Lieut. J. L. Tyson, R.A.N.R.

# Vice Admiral Sir Hastings Harrington Buried at Sea



From a grey warship under an overcast sky the body of Vice-Admiral Sir Hastings Harrington was committed to the sea.

Sir Hastings died in Canberra on the 17th December, 1965, at the age of 59 years.

He had retired in February after a distinguished 45-year career in the R.A.N. which took him from midshipman to Chief of Naval Staff.

In accordance with his wish, he was buried at sea off Sydney Heads, from the destroyer H.M.A.S. Vampire.

The ceremony began at Garden Island at 10 a.m. on Monday, 20th December, 1965.

A naval band, the drums and Drum Major's mace trimmed in black, led the procession playing the funeral dirge, each beat of the bass drum echoing and re-echoing around the dockyard.

The firing-party followed at the slow march with rifles reversed.

Eight admirals were among the 10 pallbearers, flanking the hearse.

Sir Hastings, 17-year-old son, Midshipman Charles Simon Hastings

Harrington, dressed in white shirt and shorts, marched behind, followed by about 30 mourners, some of whom had known Sir Hastings throughout his career.

At the Vampire, which had its flags at half-mast, eight bare-headed sailors carried the coffin, draped with a black-trimmed Australian flag, up the gangway, while bosuns' pipes shrilled, piping Sir Hastings aboard for the last time.

The frigate H.M.A.S. Derwent, carrying mourners, escorted the Vampire to sea.

Sixteen miles off Sydney Heads the two ships, 100 yards apart, slowed, then stopped.

On the Vampire the silence was broken only by an occasional command and the swish of the seas as the ship rolled in the heavy swell.

Despite the white uniforms, gold braid, gold swords and shining medals, the impression was one of greyneyness—grey sky, grey sea, grey warships.

And even with the crowd of mourners and sailors, there was still an emptiness.

The service was broadcast to the Derwent, on which bare-headed sailors lined the rails.

On the Vampire the lines of men swayed with the roll of the ship, the square collars and bell-bottomed trousers fluttered in the strong breeze.

Four seagulls hung almost motionless above the water.

The senior Anglican Chaplain to the R.A.N., Archdeacon J. O. Were, said Sir Hastings "gave everything he had to the Navy and when his time in the Navy was over, his life, in a way, was over."

"Let us be thankful for his long service, courage and leadership."

The coffin slid from under the flag and disappeared beneath the waves.

Three volleys rang out from the firing party of 12, the empty cartridges clattering on the steel deck.

Two buglers sounded the Last Post and Reveille which echoed back from the Derwent.

Vice-Admiral Sir Hastings Harrington had returned to the sea to which he had devoted his life.

Vice-Admiral Harrington was born on 17th May, 1906, at Maryborough, in Queensland, the son of H. E. Harrington, barrister-at-law, of Sydney.

After attending the Wychbury Preparatory School, he entered the Royal Australian Naval College in 1920, and graduated in 1924.

From 1924 until 1935, he served in H.M.A. Ships Brisbane and Adelaide, H.M. Ships Malaya, Rodney and Cornwall, H.M.A. Ships Success, Albatross, Canberra and Swan, and the Royal Australian Naval College.

As a Lieutenant-Commander, in 1939, Admiral Harrington took command of H.M.A.S. Yarra, and for 2½ years served in the Mediterranean, the Red Sea, the Persian Gulf and the East Indies. While serving in Yarra he was promoted to Commander, awarded the Distinguished Service Order and was twice mentioned in despatches.

After leaving Yarra he was appointed Executive Officer of H.M.A.S. Australia and in her took part in the Battle of the Coral Sea, landings at Guadalcanal, and the landings along the North Coast of

New Guinea and in New Britain.

He became Captain of H.M.A.S. Quiberon in 1944, on the East Indies Station.

After the war he was appointed to Navy Office for duty with the Department of Defence Secretariat and sat on a committee which selected officer and rating pilots for the newly formed R.A.N. Fleet Air Arm. He was promoted Captain in 1947.

Later he commanded the Tribal class destroyer H.M.A.S. Warumba and held the appointment of Captain (D) Tenth Destroyer Flotilla.

He completed the 1952 course at the Imperial Defence College following which he served for two years on exchange service with the Royal Navy.

In 1955 he was appointed Captain of H.M.A.S. Sydney and in 1957 he was promoted to Rear-Admiral and appointed Flag Officer-in-Charge, East Australia Area. In 1958 he became Second Naval Member and in December, 1959, he assumed command of the Fleet as Flag Officer Commanding Her Majesty's Australian Fleet in H.M.A.S. Melbourne.

He was promoted to Vice-Admiral

on 24th February, 1962, and appointed to Navy Office as First Naval Member and Chief of Naval Staff. He was awarded the K.B.E. in the Queen's Birthday Honours List, 1963.

Vice Admiral Harrington retired as Chief of the Naval Staff on February 23, 1965.

Fellows and Associates of the Navy League of Australia extend to Lady Harrington and family their deepest sympathy in the loss they have sustained.

## CONTRIBUTIONS INVITED

The editor invites persons to submit articles and photographs for inclusion in the magazine. All Contributions should be addressed: The Editor, "The Navy", Box C178, Clarence Street, Post Office, Sydney, N.S.W., Australia.

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

## Retirement of . . .

# Commander D. J. Mort, C.F.M., A.S.C.C.

Commander Mort commenced his Naval training on 23rd January, 1917, when he joined H.M.A.S. Tingira as a boy 2nd class.

Over the past 49 years he has served in more than 12 ships of the R.A.N. Commander Mort first joined the New South Wales Navy League Sea Cadet Corps in 1937 and apart from war service has maintained his interest in the Corps to the present day. His leadership and inspiration have been a source of encouragement to many boys over the years.

It is realised that it will be difficult for Commander Mort to sever all connections with the Navy, however, all who have personally known him or served under him will want me, I know, to wish him a long and happy retirement.

Editor.

OUR COVER — "Captain's Conference" by Howard Terpning  
(Reproduced by courtesy of the Reader's Digest Association Pty. Ltd.)



*This Sign  
is  
the Symbol  
of  
Fair Dealing*

Hooker-Rex are proud of their achievement in developing high-class housing estates and proud of their reputation for fair dealing.

You can rely on our integrity – our courteous service and our desire to assist.

LOOK FOR OUR SIGN

# HOOKER-REX Pty. Limited

SYDNEY: "Hooker House", Angel Place

MELBOURNE: "Hooker House", 327 Collins Street

BRISBANE: 197 Elizabeth Street

## Periscope on Australia

### RADAR EQUIPMENT ORDERED

The Royal Australian Navy has awarded a \$200,000 contract to Gilfillan Inc. for the supply of Quadrarad ground control approach radar and associated electronics. Gilfillan's Quadrarad is a light-weight, four-in-one terminal area ATC system providing surveillance, final approach, height finding and air traffic taxi information, and can be operated by one man.

### HOBART COMMISSIONS

The latest addition to the Australian Fleet, the guided missile destroyer H.M.A.S. Hobart, was commissioned at the U.S. Naval Shipyard, Boston, on 18th December, 1965.

The ship was accepted from her American builders by Mr J. Keith Waller, C.B.E., Australian Ambassador to the U.S., and she is expected to arrive in Australia in August after working up in American waters.

### NEW R.A.N. BASE NAMED "PLATYPUS"

The Royal Australian Navy's submarine base at Neutral Bay, N.S.W., will be named H.M.A.S. "Platypus".

The base is being developed to cater for Australia's planned squadron of Oberon class submarines.

The Minister for the Navy, Mr F. C. Chaney, said the name Platypus had earlier connections with the submarine fleet.

A former R.A.N. ship of this name acted as a mother ship for the Navy's first six "J" class submarines, and escorted them on their delivery voyage from Britain in 1919.

Ten years later it was mother ship for Oxley and Otway, the last submarines owned by the Navy.

### "PERTH TO VISIT STATES"

Australia's first guided missile destroyer, H.M.A.S. Perth, will visit all mainland State capitals between March 4 and April 5.

The programme is: Brisbane, March 4 to March 7.

Sydney, March 9 to March 16.  
Freemantle, March 22 to March 26.

Adelaide, March 29 to March 31.  
Melbourne, April 2 to April 5.  
Perth will be open for public inspection in each port.

### CHRISTENING OF AN ARMY SHIP

The Army christened a former civilian freighter for the first time, at a ceremony at Chowder Bay, in Sydney, during November. The vessel, which was formerly operated as the "Marra" on the West Australian coast, was named "John Monash" after General Sir John Monash, a distinguished Australian soldier and engineer, who died in 1931.

### NAMES FOR PATROL VESSELS

Names beginning with the letter "A" have been chosen for the nine 100 ft patrol vessels building for the Royal Australian Navy.

The vessels will be called, Attack, Assail, Advance, Acute, Adroit, Aware, Ardent, Archer and Arrow.

### LONE SAILOR CROSSES TASMAN

A Brisbane man arrived in Auckland recently in his 18 ft plywood sloop "Piccaninny" after sailing single-handed across the Tasman.

He is Mr. M. Brannigan, 27, an electrician, who took 42 days, and sailed more than 1900 miles.

He left Brisbane with food for 100 days' sailing—his staple diet was rice and bully beef.

### R.A.N. OFFICER TOPS COURSE

An R.A.N. officer, who is training as a submariner in Britain, has topped the Royal Navy's Submarine Course.

The officer, Lieutenant W. Raymond, of Kogarah, N.S.W., took the course at H.M.S. Dolphin, the Royal Navy's submarine training school.

He was awarded the Admiral Sir Max Horton prize for topping the course.

Lieutenant Raymont entered the Royal Australian Naval College in 1954 and graduated from the College in 1955.

After graduating he served at H.M.A.S. Albatross and in H.M.A.S. Swan, and undertook training at H.M.S. Dartmouth in the United Kingdom in 1956.

He returned to Australia in 1957 and served aboard H.M.A.S. Quickmatch and in 1958, completed the Engineering Course at the Royal Navy Engineering College at Manadon in England.

In 1962 he was appointed to serve in H.M.A.S. Melbourne and from 1963 to 1965, served at the R.A.N.'s Apprentice Training Establishment, H.M.A.S. Nirimba.

### TARTAR MAINTENANCE

A question to the Minister for the Navy, Mr Chaney, from Mr Jess, M.H.R., brought an answer suggesting that the R.A.N. is preparing to do its own maintenance of the Tartar medium-range anti-aircraft missiles with which the new guided missile destroyers are armed, though this was not made entirely clear.

"Each of the ships will be equipped with a specified number of missiles as part of its armament and there will be in reserve a number of missiles determined according to standards laid down by the defence authorities," said Mr Chaney.

"The maintenance of the missile systems will be a joint project of the Department of the Navy and the Department of Supply, which is the Department ultimately responsible for the work.

"With respect to the training of technicians my Department has at present in the United States of America several members of the technical staff who are undergoing training where this kind of training is given. They will return to Australia with the necessary proficiency to undertake the training of technicians here."

## R.A.N. RECRUITING BEGINS IN NEW GUINEA

Recruits are being selected for the 1966 entry into the Papua-New Guinea Division of the R.A.N.

The men are being recruited to man the five, 100 ft. Attack-class patrol craft which are being built for the R.A.N.'s Papua-New Guinea Coastal Security Force.

It is expected that the first patrol craft will be available early in 1967.

For the present all training is being conducted at H.M.A.S. Tarangau, on Manus Island.

Initially the five patrol craft will be operated on crews of R.A.N. and P.N.G. sailors. Eventually it is intended that these craft will be manned entirely by suitably trained P.N.G. sailors. It is also intended to introduce an Officer Entry into the P.N.G. Division of the R.A.N.

## NEW CADET MIDSHIPMEN BEGIN TRAINING

During January this year, fifty-five young men from all parts of Australia, New Zealand and Papua-New Guinea entered the Royal Australian Naval College at Jervis Bay.

The entry contained thirty-two junior candidates (aged 15-17 years) and twenty-three senior candidates (Matriculation entry).

Eight of the senior entrants were sailors who had studied for matriculation under the R.A.N.'s "Topman" and "Upper Yardman" schemes.

## NAVY HOLIDAY FOR SCHOOLBOYS

Forty-seven secondary school boys from all States spent a week of their holidays at the Royal Australian Naval College at Jervis Bay from Monday, 17th January, 1966.

They were guests of the R.A.N. who paid their fares to the college.

Seventeen of the boys were from New South Wales, 14 from Victoria, eight from Queensland, four from Western Australia, three from South Australia, and one from Tasmania.

During the week they were taken to sea for a day in a warship, shown the Naval Air Station at Nowra, inspected the Garden Island dockyard in Sydney, sailed in the college's yachts, and heard lectures on aspects of Navy life.

The boys all sat for matriculation examinations last year and are eligible for senior entry into the Naval College.

All the boys had expressed an interest in the Navy and had been selected to visit the college by their schools.

It is the third time groups of boys have been guests of the Navy at the college during their summer holidays.

## SURVEY SHIP RETURNS

H.M.A.S. Moresby, the Royal Australian Navy's modern survey ship, returned to Sydney on Friday 17th December, 1965, after a 41 month survey of the seaward approaches to Port Hedland, Western Australia.

Port Hedland is being developed as a major port for the export of iron ore.

From mid-September to mid-October last year Moresby was assisted by H.M.A. Ships Gascoyne and Diamantina and the General Purpose vessel Bass. A shipping lane 15 miles wide extending from the Rowley Shoals for about 150 miles to the approaches of Port Hedland was examined. This survey is essential for the safe navigation of the deep draught vessels which are expected to be used for the shipping of iron ore.

During the survey, camps were maintained in a number of remote islands to operate electronic equipment. Although the islands were small, barren and treeless, the camp duties were popular assignments. The ship's helicopter was used extensively to establish and supply the camps.

In mid-season the ship visited Singapore and Bangkok. In both ports the ship, with her yacht-like lines and wearing a White Ensign, created much interest.

## R.A.N. IN YACHT RACE

The Royal Australian Naval College's 43 ft. sloop "Franklin" competed in the Sydney to Hobart yacht race for the first time last year.

Franklin is the biggest and fastest of three ocean racing yachts at the college. All cadet midshipmen get seamanship training in the boats.

Franklin was skippered by Lt. Cdr. G. J. Tilly, of Hackett.

Lt. Cdr. Tilly's crew members all come from the R.A.N. College at Jervis Bay.

Franklin was built in 1962 at Garden Island, Sydney for the R.A.N. College.

She is modelled on a Morgan Giles sloop design for the Royal Navy. She carries an Australian-designed rig.

This year Franklin has taken part in all major offshore races in N.S.W.

This year's race was 'international' in that yachts from the United Kingdom, South Africa and Italy competed.

The race was won by the N.S.W. yacht Freya, corrected time 3 days 10 hours 3 minutes 26 seconds. Freya also won in 1963 and 1964.

First across the line was the 73 ft ketch, Stormvogel (Sth. Africa) whose corrected time was 4 days 2 hours 28 minutes 8 seconds.

Franklin's corrected time was 3 days 22 hours 11 minutes 29 seconds.

During the race, Lieut. Franco Barbalonga, of the Italian Navy yacht, Corsaro II fell overboard and rescued by a competing yacht which was several minutes behind the Italian vessel.

## QUEENBOROUGH TO RECOMMISSION

The Royal Australian Navy's fast anti-submarine frigate, H.M.A.S. "Queenborough" will be re-commissioned and the frigate H.M.A.S. "Gascoyne" has been paid off.

Queenborough, which has been in reserve since June, 1963, will commission about the middle of this year. Gascoyne paid off into the reserve on February 1.

Queenborough will be used for anti-submarine training, operational flying school and helicopter training and to give seamanship experience to recruits and reservists.

She will also be available for use as an escort and will assist in oceanographic and hydrographic work.

Queenborough, formerly one of the best known R.A.N. ships, was built as a fleet destroyer for the Royal Navy and completed in England in December, 1942. In 1945 she was loaned to the R.A.N. and transferred permanently in 1950.

Modified to a fast anti-submarine frigate at Cockatoo Island, Sydney, Queenborough rejoined the Australian Fleet in 1954.

Until she went into reserve in 1963, Queenborough had been leader of the R.A.N.'s First Frigate Squadron, served in the British Commonwealth Strategic Reserve and visited most Asian countries. She had also visited Britain.

Gascoyne was built at Mort's Dock and Engineering Co., Sydney, and completed in January, 1944.

Her first wartime task was as an escort in Milne Bay and waters near New Guinea. Later in 1944 and in 1945 she operated round the Philippines and several times was attacked by Japanese aircraft but was never hit.

In April, 1946, after steaming 82,000 miles on war service, Gascoyne was paid off into the reserve.

She was re-commissioned as a survey, oceanographic research and seamanship training ship in 1959, and has been so employed ever since. She has undertaken many deep sea research voyages for the C.S.I.R.O.

## EXPLOSIONS IN BASS STRAIT

The Royal Australian Navy's trials ship, H.M.A.S. "Kimbla" began dropping twelve, one-ton explosive charges in Bass Strait between Victoria and Tasmania during February. The explosions, were set off over a period of three weeks and were studied by scientists at 29 temporary and permanent seismic stations situated up to 400 miles away in Victoria, New South Wales and Tasmania.

The experiment organised by the Geophysics Group of the Australian Institute of Physics, was named "Bump" . . . Bass Upper Mantle Project.

From the study of the effect of the explosions geologists hope to learn more about the structure of the earth's crust below Bass Strait and of the physical properties of the upper mantle, the earth's second layer below the crust.

Oil geologists will give particular attention to information obtained about the shallower parts on the crust under Bass Strait where potential oil bearing strata might be found.

Special timing equipment enabled the scientists to time the explosions with an accuracy of a few hundredths of a second. The "Kimbla" used Radio Direction Finding Equipment to determine accurately where to drop the charges.

The Nuffield Foundation gave \$4000 towards the cost of the experiment. Assistance was also given by several oil prospecting companies.

# Red Submarines 'Off Australia and the U.S.'

Russia is keeping long-range missile-armed submarines "on station" off Australia, the United States and China.

This information was reported in the 1965-66 edition of "Janes Fighting Ships"—regarded as the most authoritative reference published on the world's navies.

It said the Russian fleet has almost as many nuclear and conventional submarines as the rest of the world combined.

Janes' estimated the global submarine fleet at 859 vessels operated by 30 countries.

Only three nations—the United States, Russia and Britain—have nuclear powered and missile armed underwater craft in operation.

The publication listed the Soviet Submarine fleet at 390 conventional and 35 nuclear craft.

The United States leads in nuclear submarines with 60, but trails the Russians with 140 conventional underwater craft for a total of 200.

All 35 Soviet nuclear submarines were reported "operational" by Janes.

Editor Raymond Blackman said Britain was greatly in need of more aircraft carriers, frigates and nuclear-powered submarines.

France was increasing the nuclear element of its fleet, West Germany was becoming a big European naval power with American help. Italy was producing interesting new ship designs and Japan was fast becoming the "United Kingdom of the Far East."

## SUBSCRIPTION FORM

To "The Navy",  
Box C178, Clarence Street Post Office,  
Sydney, N.S.W., AUSTRALIA.

I enclose 24/- (\$2.40) for Annual Subscription to "The Navy", post free.

Name \_\_\_\_\_

Street \_\_\_\_\_

Suburb \_\_\_\_\_ State \_\_\_\_\_

Date \_\_\_\_\_

## PLEASE PRINT CLEARLY

Please make cheques, postal notes or money orders payable to "The Navy League".

Best Wishes to the "Navy" from —

## Palmerston Rest & Convalescent Home

Catering for both Ladies and Gentlemen

24 HOURS' ATTENTION & SERVICE

490 Newcastle Street,  
Perth, W.A.

PHONE 28-3772

## "Nights-Ease" Sleep Equipment

- ★ "DON" LIVING ROOM FURNITURE
- ★ OFFICE DESKS
- ★ FOLD-A-BEDS

Manufactured by

**JOYCE BROS. (W.A.)  
Pty. Ltd.**

Forsyth St., O'Connor, W.A.

## SCIANO'S PAINT & HARDWARE SUPPLY

95 Hampton Rd., Beaconsfield, Fremantle, W.A.

Paint Specialists with the right product for any surface — Also Stockists of Builders and General Hardware, Gardening Tools, Victa Mowers, Fertilizers, Seeds, Electrical Goods, Kitchenware, Fishing Tackle and a Large Range of Toys and Ornaments.

FOR SERVICE PHONE 5-2615, 5-1730

## ROBY & CO. PTY. LTD.

SPECIALISTS IN

- ★ SHEET METAL FABRICATION
- ★ VENTILATION & DUCT WORK
- ★ ELECTRICAL SWITCHBOARD CABINETS
- ★ STRUCTURAL METALWORK — STAINLESS STEEL, ETC.

Chamberlain St., O'Connor,  
Fremantle, W.A.

PHONE 50-2154

## Rear Admiral BECHER RETIRES



Rear-Admiral Otto Humphrey Becher, C.B.E., D.S.O., D.S.C. and Bar., U.S. Legion of Merit, retired from the Royal Australian Navy on 31st January, 1966, after forty-four years service. He had a distinguished career.

Rear Admiral Becher entered the Royal Australian Naval College in 1922 and graduated in 1925.

He served with distinction during the Second World War and Korean War. While serving in the Royal Naval Cruiser, Devonshire, during the Second World War, he was awarded the D.S.C. for his good services in helping to withdraw troops from Norway. He was awarded the Bar to the D.S.C. when as Captain of Quickmatch, he took part in the inshore bombardment of a Japanese-held base at Sebang in 1944.

Rear Admiral Becher has held a number of important commands and staff appointments. These include, Deputy Chief of the Naval

Staff (1952-1954) and (1959-1962). Captain of the aircraft carrier Vengeance (1954-1955). Captain of H.M.A.S. Melbourne (1957-1958), and Head of the Australian Joint Services Staff in London (1962-1963). He is a graduate of the Imperial Defence College.

He was awarded the C.B.E. in 1961, appointed Flag Officer Commanding Her Majesty's Australian Fleet. In January 1964, Flag Officer in Charge, East Australia area in January, 1965.

Rear Admiral Becher sent the following signal on his retirement from the R.A.N. . . .

" . . . I have thoroughly enjoyed my short year as FOICEA and feel that, with the uniformed and civilian elements of my team working

so well together, we have achieved quite a lot in spite of known shortages of men and money. There is much more to be done before we can honestly say we are giving the Fleet the backing it needs but I am confident that with your continuing efforts, this will be achieved. I would particularly like to wish my many shipmates among the officers and sailors, who have shared with me the ups and downs of the Navy, all good fortune in the future, and to thank them for their continued support over the years. I am convinced that most members of my team are giving of their best, and I have enjoyed being the boss of such cheerful and hardworking Navy men, both uniformed and civilian. Well done and good luck."

## ROBERT LUNDIE

CUSTOMS and SHIPPING AGENTS  
BY-LAW and TARIFF SPECIALISTS

Also specialising in Heavy Transport  
Anywhere

26 O'CONNELL STREET, SYDNEY

Phone 25 5651-2

At your Service  
FOR YOUR HOLIDAY REQUIREMENTS  
INFORMATION AND BOOKINGS Call or Telephone

**Howard Smith Travel  
Centres**

SYDNEY: 269 George Street :: Tel.: 27-5511  
MELBOURNE: 522 Collins Street :: Tel.: 62-3711  
PORT ADELAIDE: 3 Todd Street :: Tel.: 4-1461  
FREMANTLE: 1 Mowatt Street :: Tel.: 1 1071  
NEWCASTLE: 16 Watt Street :: Tel.: 2-4711  
CAIRNS: 18 Abbott Street :: Tel.: 2115/6  
BALLARAT: Cnr Lydlord and Moir Streets :: Tel.: 8 5462



## DIESEL & STEAM TUG OWNERS

(Distinguishing Marks:  
Green Hulls, Black Funnels)

CONTRACTORS TO  
THE ADMIRALTY

### DIESEL TUGS

Sydney Cove — Farm Cove  
Manly Cove — Sirius Cove  
Iron Cove — Camp Cove  
1100 B.H.P.

### STEAM TUGS

Heroic — Himma

PHONE: 82-0178

Cables: "FENWICK"

## J. FENWICK & CO. PTY. LIMITED

2 WESTON STREET, BALMAIN EAST, SYDNEY, N.S.W.

And at 11 Watt St., Newcastle, and c/o Associated S.S. Co. Ltd., Pt. Kembla, N.S.W.

## T. J. PREST & SONS PTY. LTD.

### ★ SHIPPING CONTRACTORS

★ BULK GRAIN FITTINGS

★ REPAIRS TO INSULATION AND CARGO FITTINGS

★ FITTING OUT FOR GENERAL AND REFRIGERATED

★ CARGOES, DUNNAGE, TIMBERS AND BURLAP

109 Beach St., Port Melbourne — 64-1494, 64-4507

also at

PORTLAND, VICTORIA — PORTLAND 740

# Change in Fleet Command

A ceremony on board the Royal Australian Navy flagship, HMAS MELBOURNE in Sydney on Friday, January 28, marked a change in the command of the Australian Fleet.



REAR ADMIRAL T. K. MORRISON,  
Flag Officer in Charge, East Australia  
Area.



REAR ADMIRAL V. A. SMITH,  
Flag Officer Commanding Her Majesty's  
Australian Fleet.

Rear Admiral V. A. Smith, C.B.E., D.S.C., succeeded Rear Admiral T. K. Morrison, C.B.E., D.S.C., as Flag Officer Commanding H.M. Australian Fleet—the top sea-going appointment in the R.A.N.

Rear Admiral Morrison, who had commanded the Fleet for the past year, assumed the appointment as Flag Officer in Charge East Australia Area following the retirement of Rear Admiral Becher.

Admiral Morrison graduated from the Royal Australian Naval College in December, 1928. He gave distinguished service in the Second World War. He was awarded the O.B.E. for his work in H.M.A.S. Hobart during the evacuation of British Somaliland and was mentioned in despatches for his service at Leyte.

The D.S.C. was awarded to him for the part he played in the operations off Lingayen.

He was appointed to H.M.A.S. Australia as Squadron Torpedo Officer in January, 1944, and left her in England in August, 1945, to do a staff course at the Royal Navy College, Greenwich.

From July, 1949, until August, 1951, he commanded the Battle Class destroyer Tobruk and was appointed Captain of the fast anti-submarine frigate Quadrant in 1954.

He has held the appointments of Director of Manning and of Deputy Chief of Naval Personnel and Director of Personal Services at Navy Office Melbourne (1951).

As a cadet-midshipman at the Royal Australian Naval College, Admiral Morrison proved himself a

notable sportsman and gained his colours for cricket, rugby, hockey, tennis, and rowing.

Later, when he was serving with the Royal Navy, first as a sub-lieutenant and afterwards a lieutenant he represented the Navy at cricket.

Other appointments include:

Deputy Chief of Naval Staff from 1962 until the end of 1964.

Captain of the aircraft carrier, H.M.A.S. Melbourne and Chief Staff Officer to the Flag Officer Commanding Her Majesty's Australian Fleet in December, 1958, until December, 1959, Australian Naval Representative and Navy Attache at the Australian Embassy in Washington from July, 1956, until he left there for the United Kingdom to begin the Imperial Defence College Course.

Rear Admiral V. A. Smith, entered the Royal Australian Navy College in 1927. He specialized in Naval aviation and gained his wings as an Observer in the Fleet Air Arm in 1937.

He was Mentioned in Despatches for an air torpedo attack on "Scharnhorst", in fighter squadron operations from H.M.S. Ark Royal

in 1941, for outstanding zeal, patience, and cheerfulness and for setting an example of wholehearted devotion to duty.

After his return to Australia in 1942 for liaison duty with the United States Navy, he was appointed to serve in H.M.A.S. Canberra and was serving on the ship when it was lost. During 1943, he served in H.M.S. Tracker in the Atlantic and on Russian convoys.

He was executive officer in H.M.A.S. Sydney during Korean operations in 1951.

Promoted to Lieutenant-Commander in 1944, he served on the staff of Flag Officer British Assault Area (Normandy). At cessation of hostilities he was on the staff of Vice Admiral (Q) British Pacific Fleet.

Rear Admiral Smith has held a number of important command and staff appointments.

He has been Director of Air Warfare Organisation and Training; Captain of the R.A.N. Air Station, H.M.A.S. Albatross; Commanding Officer of the First Frigate Squadron and Captain of the Flag Ship H.M.A.S. Melbourne.

# Nautical Notes from All Compass Points

By SONAR

## CANADA

Royal Canadian Navy's new 200-ton High speed ASW hydrofoil, scheduled for completion and initial sea trials in 1966, will have a Canadian Westinghouse-developed Fighting Equipment System, based on the Model 2402 computer. It will include computer programme and action information processing; variable depth sonar; high speed navigation aids; advanced ASW weapons; a communicating link capable of transmitting data automatically between ships, and high resolution marine radar with provision for electronic counter measures. Westinghouse's Electronics Division is also building a facility to simulate tactical operating conditions existing on the hydrofoil vessel, including a bridge and operations centre using an IBM 360/30 computer to provide the needed dynamic environment.

## SECOND CANADIAN "OBERON"

The second of the three Oberon-class submarines ordered by the Royal Canadian Navy was launched on September 25 at H.M. Dockyard, Chatham. She was named *Onondaga* (sister ship "Ojibwa") by Mrs Paul Hellyer, wife of the Canadian Minister of National Defence.

The *Onondaga* is an attack submarine can fire homing torpedoes and has the latest detection gear. She will be fast underwater and able to stay down for a long time. A constructional feature is the large amount of fibre-glass in her superstructure.

She is named after a tribe of North American Indians, nowadays widely dispersed over the U.S.A. and Canada.

## "SKEENA" COMMISSIONS AFTER CONVERSION

Her thirteen-month conversion will enable H.M.C.S. *Skeena* to operate the nine-ton all-weather anti-submarine Sea King helicopter. Her commissioning marked the fifth of her class to rejoin the fleet as a

helicopter destroyer. H.M.C.S. *Saguenay* has also just completed similar conversion, which only leaves the *Margaree* and *Fraser* uncompleted.

## NEW ASW HYDROFOIL

Royal Canadian Navy's FHE-400 ASW hydrofoil — a 200-ton vessel, equipped with variable depth sonar, torpedoes, radar and nav-com — is being developed by de Havilland Canada with many interesting features. Its action information centre will be equipped with a DPS-2401 data processor supplied by Westinghouse Defence and Space Centre, which is also under subcontract from Canadian Westinghouse, providing compilers for the hydrofoil's two computers. The DPS-2401 has a 4000-32,000 word memory and cycle time of 2 microseconds.

## HELICOPTER DECK-LANDING DEVICE

A Canadian-designed device to aid the landing of helicopters on board warships has been adopted by the Royal Canadian Navy. Eight of the new Beartrap helicopter haul-down systems have now been ordered from Fairley Canada Ltd., the developers. The system, which looks simple is, in fact, quite an intricate piece of mechanism.

The new units will be used in the Assiniboine-class anti-submarine destroyer-escorts. A demonstration, given recently to N.A.T.O. officers and officials on board H.M.C.S. Assiniboine, was well received.

## NEW DOCK AT HALIFAX

Tenders are to be called for a unique type of dry dock for the naval dockyard in Halifax. Known as a Synchrolift Marine Elevator, it has been designed particularly for the survey and repair of Canada's three new 'O' class submarines the first of which is being commissioned shortly. The dry dock will also be capable of handling the FHE 400, the R.C.N.'s experimental hydrofoil anti-submarine craft now under construction.

The elevator, the first dry docking facility of any appreciable size in the Halifax dockyard, will employ a technique new to Canadian shipyards. Instead of pumping an enclosure dry of water, the system will hoist the vessel out of the water and transfer it to dry land by rail.

## HIGH-SPEED GAS

Gas turbine propulsion systems will be installed in the four helicopter destroyers to be built for the Royal Canadian Navy in 1967-71, instead of the originally planned steam power plants.

The decision to employ gas turbine power plants in the helicopter destroyers is regarded as one of the most important steps in the history of warship construction in Canada. A number of other navies have been using gas turbines in combination with other types of engines for ship propulsion. Canada will be among the first to construct warships of destroyer size with all-gas turbine plants.

## DESTROYER COMMISSIONS

The helicopter-destroyer *Margaree*, commissioned late last year at Victoria Machinery Depot, Victoria, B.C., after a 13-month refit and conversion.

The 366-ft *Margaree* is the sixth of the *St Laurent* class to emerge from Canadian shipyards with facilities for operating the nine-ton all-weather Sea King helicopters in anti-submarine warfare. The ships also have been fitted with Canadian variable depth sonar.

The *Margaree* sailed for Halifax from Esquimalt, B.C., to serve in the Atlantic fleet.

She was originally commissioned in October, 1957, at Halifax Shipyards, Halifax, and arrived on the west coast in November, 1957. The ship was paid off in September, 1964, for refit and conversion.

## MALAYSIA GAS-TURBINE F.P.B. LAUNCHED

K.D. *Perkasa*, the first of four 50-knot patrol boats designed and built by Vosper Limited, Portsmouth, to meet the requirements of the Royal Malaysian Navy, was launched at Vosper's Portchester Shipyard, on October 26, 1965, by Her Highness the Tengku Ampuan of Selangor, Consort of His Highness the Sultan of Selangor.

The *Perkasa* has a hull entirely of wood, with upperworks of aluminium alloy. She is powered by three Bristol Siddeley Proteus Gas Turbines, which will give her a speed of over 50 knots, and fitted with General Motors diesel engines for manoeuvring and cruising. She will be armed with 40mm. guns and 21 in. torpedoes and will be air-conditioned throughout. (The *Perkasa* class are generally similar to the *Solven* class, recently designed and built by Vosper Limited for the Royal Danish Navy.) The complement will be three officers, three petty officers, and 16 junior ratings.

Vosper's association with the Royal Malaysian Navy began with the supply of six 103 ft. diesel-engined patrol craft of the *Sri Kedah* class in 1963, and four similar vessels of the *Sri Sabah* class in 1964. A further fourteen modified *Sri Sabah* class patrol craft are at present under construction.

## MALTA SUBMARINE ESCAPES

Royal Navy divers from H.M.S. *Dolphin* have been making tests on submarine escape techniques from depths of 450 ft. The escapes are made from a one-man airlock which can be flooded in a few seconds to minimise the time for which the escapee is subjected to the pressure. The escapee wears an air-filled hood with a transparent plastic window which provides buoyancy for the ascent and air for normal breathing during the 90 seconds of the trip to the surface.

## SOUTH AFRICA NAVY TAKE-OVER

The take-over of the Simonstown naval base by the South African Navy was completed in 1965, when the wireless station on Red Hill, Simonstown, was handed over by the Royal Navy.

## \*R75m. ON PLANT

More than R28m. is being spent on improvements to Durban's port and a further R7½ m. will be paid for new appliances which are to be provided for the harbour.

In addition R62,000 has been allocated for an automatic lighthouse at North Sand Bluff on Natal's South Coast, about halfway between Port St. Johns and Port Shepstone.

The major project to be undertaken, for which tenders have already been called, is the construction of the new pier (No. 1) at Salisbury Island.

\*Rand.

## 150-TON DIVING BELL

A diving bell with six men in it slid silently into the Mediterranean last month in the latest of a series of French experiments on man's undersea adaptability.

The tests, directed by French underwater explorer, Cmdr. Jacques-Yves Cousteau, are also aimed at helping the technique of undersea oil prospecting.

## SOUTH AFRICANS REPLACE BRITISH

Speaking at a recent lecture in Stellenbosch, the Naval Chief of Staff, Rear-Admiral H. H. Biermann said that when South Africa took over Simonstown as a naval base it was necessary to keep on 120 members of the British staff and today only one was left.

"We do most of the training of our personnel in South Africa. For some very specialised tasks, however, our naval personnel is sent overseas as it would be uneconomic to train them here. I must add that these men acquire themselves very well at these overseas courses."

"I should, however, like to see Stellenbosch open the possibilities of training naval architects."

Admiral Biermann also said that to create an Afrikaans naval language had been a big task, but the navy had succeeded very well. The popularity of the naval gymnasium had made the navy very acceptable, even in the rural areas.

He added that attention would be given to a language laboratory. Few South African naval officers knew French and it would be one of the first tasks of the laboratory to teach able personnel French and Portuguese.

## UNITED KINGDOM

Nineteen of the R.N.'s redundant piston-engined Whirlwind HAS.75 are being converted at Westland's Weston Division to HAR.9 standard, with the Bristol Siddeley H.1000 Gnome-engine installed, for the R.N.'s carrier-borne plane-guard flights.

## SUBMARINES FOR BRITAIN

U.S. Defence Secretary Robert McNamara has offered the British a new deal on Polaris-missile nuclear submarines. The terms would have London drop its own sub-development programme, to buy the four boats it wants from the U.S. The price would be attractive because the Navy still has the Polaris sub in production.

## AIRCRAFT CARRIER

### MAGNIFICENT FOR SCRAP

Shipbreaking Industries (M. I. Group) has purchased the light fleet carrier *Magnificent*. She will be broken up.

The *Magnificent*, of 15,700 tons displacement, was built by Harland & Wolff at Belfast. She was launched in 1944 and completed in 1948. The whole of her active career was spent with the Royal Canadian Navy.

## F111 WILL BE U.K. NUCLEAR STRIKE PLANE

It has been reported that Britain, despite Government denials, would use the American F111 as a nuclear bomber.

It said the F111 would carry weapons designed for the cancelled TSR2.

Work on the TSR2's delivery systems and nuclear weapons was being pushed ahead so they would be ready by 1969 when the F111 entered the R.A.F. service.

Among the weapons was the all-purpose bomb, the existence of which was disclosed in 1963 by the Minister for Defence (Mr Thorneycroft).

Others included the Martel Anglo-French anti-radar and television-guided nuclear missile.

These would fit into the internal bomb bay of the F111.

## POLITICAL

Everyone connected with the project had been asked to avoid mentioning the F111's nuclear role because the Prime Minister (Mr. Wilson) was anxious to play it down for political reasons.

# ELECTRICAL INSTALLATIONS Pty. Ltd.

6 NAPOLEON STREET, SYDNEY

Tel. 29-5311 (4 lines)

Who have been actively engaged in carrying out work on vessels and shore establishments for the past 25 years extend congratulations to all who have served or are still serving for a job well done and a wonderful record of achievement both at sea and in dock yards and establishments.

Experienced Service available for all classes of Electrical Installation and Repair, Motor-Generator Winding, Radar Installations, etc. — For Ships, Factories, Commercial Buildings, etc.

NAVAL PURCHASING SCHEME — PHONE 57-0231 (6 Lines)

## PARK HOWARD DISTRIBUTORS

465 King Georges Rd., Beverley Hills, N.S.W.

HUGE DISCOUNTS ON ALL  
CARPETS — FURNITURE — ELECTRICAL AND GENERAL MERCHANDISE

Terms Buyers Catered For — Trade-ins Accepted

A.H.: Ted Keighran 53-8979, Audrey, K. 57-8191, Bill Howard, 50-8254

20-25% DISCOUNT on all Furniture and Furnishings

Nobody Beats Our Prices — 22½% on Carpets — OR Free Underfelt and Laying  
25-50% Discount on all Electrical Goods — We deliver immediately your flat  
becomes due

### RING US FOR YOUR REMOVALS

Make use of your Relief Fund Loan Monies — Select your goods TODAY  
We move you in TONIGHT — Ring for our FREE car service — We pick you up  
and take you direct to the Factory Showrooms — We are also able to attend to  
your Hire Purchase

He wanted to avoid conflict with Labor's Left Wing.

The Defence Secretary (Mr. Denis Healey) told Parliament the United States had agreed to extend the deadline for a decision on buying the F111 until March 1.

The original deadline was January 1.

**TOULON, FRANCE.** Operating from the diving ship "Reclaim", Royal Navy divers have completed 18 dives at a depth of 180 metres of up to an hour. Operating from a submersible recompression chamber, the divers used oxygen-helium mixtures of undisclosed proportions.

### "ENCORE" TO THE RESCUE

An example of Fleet assistance was that given by the Fleet tug Encore, to the U.S. Navy ship Chepachet. The 10,000 ton tanker had broken down with engine trouble 300 miles north east of Singapore and about 30 miles off the Malay coast. Encore was sailed from Singapore and returned four days later with the Chepachet in tow. It resulted in a signal from the U.S. Navy saying, "your prompt response and the professional assistance rendered to the U.S.N.S. Chepachet by Encore are appreciated and considered to be in keeping with the finest traditions of the British Navy. Please pass my heartiest well-done to Encore". The signal was sent by Admiral Glynn R. Donahoe, U.S. Navy (Commander Military Sea Transportation Service).

Britain's Joint R.N.-R.A.F. ASW School, established at Londonderry since 1946, is to be moved to Plymouth gradually during the next three years. Claim is that this will permit frigates and submarines to spend more time in the training area because of the more favourable geographic situation, and that it will also save about £500,000 a year.

### RESEARCH INTO SEA WATER

A research centre to be set up at Troon, Ayrshire, for research into sea water distillation, will prove the designs of plants ranging in capacity from 250,000 to 10 m. gal-

lons a day. This will mean processing up to 200,000 gallons of sea water an hour. The centre is expected to be completed by the summer of 1966. It will be Britain's largest test establishment for desalination and some of the research will be carried out in collaboration with the U.K. Atomic Energy Authority and under the Ministry of Technology's £1,500,000 programme of aid for desalination research.

### METAL FLAWS DOCK FIRST BRITISH A-SUB

Britain has withdrawn its first atomic submarine from service because of dangerous metal failures, naval authorities report.

The programme for four Polaris submarine is likely to be delayed, the sources said. The submarine withdrawn from service is the 3000 ton Dreadnought, a hunter-killer carrying conventional torpedoes.

Officials said a series of hair-line fractures developed in welds in its hull. They insist these have produced no danger of a radio-active leak from the submarine's American-built reactor.

### LONDONDERRY NAVAL BASE TO CLOSE

Bad news for Londonderry City. The Westminster Government has decided to transfer the anti-submarine school, H.M.S. Sea Eagle, from Londonderry to Plymouth.

The base in Londonderry was a decisive factor in the allied campaign against U-Boats during the Second World War. Since then it has been used not only by the Royal Navy for the development of anti-submarine techniques but by the Navies of the N.A.T.O. countries, including the United States.

The closure of the base will be phased over the next three years and the Westminster Government have undertaken to make a search for some alternative activity which can be located in Londonderry.

### NEW R.F.A. TANKER LAUNCHED

The R.F.A. "OLNA", the third of three new Fleet Replenishment Tankers for the Royal Fleet Aux-

iliary Service was launched from the Hebburn Shipyard of Hawthorn Leslie, Ltd. The naming ceremony was performed by Mrs Redman, wife of Mr S. Redman, the Deputy Under Secretary of State (Naval).

She is designed to carry a mixed cargo of fuels, and it fitted with modern handling gear for transfer by jackstay and derricks. Cargo transfer operations are remotely controlled by hydraulic power from a Replenishment at Sea Office. She will be air conditioned for service in tropical waters and cold climates, and specially strengthened for operations in ice. Her all-round capability will be enhanced by the provision of a helicopter landing platform and hangar and her manoeuvrability will be facilitated by the installation of a bow thrust unit.

Her double reduction geared turbine machinery is being constructed by St. Peter's Engine Works of Hawthorn Leslie (Engineers) Ltd. All controls and instruments essential to the operation of the main engines, boilers and auxiliary plant are completely automatic and are grouped within a central control room.

"OLNA" has an overall length of 648 feet, a beam of 84 feet and a draught of 34 feet. Her complement will be 87 R.F.A. officers and men, and there will be additional accommodation for the Royal Navy officers and men borne in wartime. She will be the third Royal Fleet Auxiliary to bear the name. The first was built in 1921 and was sunk by enemy action in 1941. The second ship, built in 1945, is due to be withdrawn from service in the near future.

The OLNA's sister ships are the "OLYNTHUS", and "OLEANDER", due to be completed during the next few months.

### H.M.S. HYDRA

A vessel with a propeller in her bows, a helicopter flight deck and hangar, a garage and two scientific laboratories, is the latest survey ship to be launched for the Royal Navy. H.M.S. "HYDRA" was launched last year by the wife of the Navy's Chief Scientist, Mr. B. W. Lythall.

The last of three new survey ships, the "HYDRA" will on completion be capable of sounding the



## This year take a magical cruising holiday with **P & O - Orient**

Visit such exciting places as JAPAN, HONG KONG, TAHITI, FIJI, AMERICAN SAMOA, NEW ZEALAND, NOUMEA and more. Browse over the cruising programme below. There are holidays from 9 to 32 days.

On each cruise there's a wide range of fares to suit your budget. Next, see your Travel Agent or P & O - Orient lines for reservations. Then look forward to the greatest holiday of your life.

### CHOOSE FROM ONE OF THESE 8 CRUISES NOW!

1 'HIMALAYA'	<b>CHERRY BLOSSOM CRUISE</b> , Mar. 25-Apr. 26. From Sydney. Via Guam to Japan for 7 days, with calls at Yokohama, Kobe and Nagasaki. Returns via Hong Kong and Manila. One Class fares from \$626 (£131).	5 'ARCADIA'	<b>SUNSHINE CRUISE</b> , Aug. 30-Sept. 12. From Sydney. Pass Ball's Pyramid and Lord Howe Island to Honiara (Solomon Islands), Lautoka and Suva. Returns via Havannah Passage and Noumea. Fares from: First, \$312 (£156); Tourist, \$220 (£110).
2 'ORSOVA'	<b>EASTER CRUISE</b> , Mar. 27-Apr. 12. From Sydney. To Nuku'alofa, Suva, Noumea, Hayman Island. Returns via Whitsunday Passage, Pass Lord Howe Island and Ball's Pyramid. Fares from: First, \$394 (£197); Tourist, \$278 (£139).	6 'CANBERRA'	<b>ORIENTAL CRUISE</b> , Oct. 19-Nov. 16. From Sydney: Via New Georgia Sound ('The Slot') to Japan for 8 days, with calls at Yokohama (Tokyo), Kobe and Nagasaki. Returns via Hong Kong, passing Yap Island. Fares from: First, \$838 (£419); Tourist, \$464 (£232).
3 'CHUSAN'	<b>TAHITIAN CRUISE</b> , May 25-June 15. From Sydney. To Auckland, off Rarotonga, to Papeete, Pass Bora Bora, to Lautoka and Suva. Pass Norfolk and Lord Howe Islands and Ball's Pyramid. Fares from: First, \$470 (£235); Tourist, \$372 (£186).	7 'ARCADIA'	<b>CHRISTMAS/NEW YEAR CRUISE</b> , Dec. 20-Jan. 2. From Sydney. Pass Lord Howe Island, Ball's Pyramid and Norfolk Island to Suva, New Zealand, calling at Bay of Islands, Auckland and Picton. Fares from: First, \$316 (£158); Tourist, \$2.8 (£104).
4 'HIMALAYA'	<b>SUNSHINE CRUISE</b> , July 21-Aug. 4. From Sydney. Pass Norfolk Island, to Pago Pago. Pass Niuafu'ou (Tin Can Island) en route to Suva and Nuku'alofa. Returns via Kandavu Passage passing Kandavu Island, Ball's Pyramid and Lord Howe Island. One Class fares from \$250 (£125).	8 'ORSOVA'	<b>CHRISTMAS CRUISE</b> , Dec. 21-30. From Sydney. To Hobart, then to New Zealand, cruising in Pelorus and Queen Charlotte Sounds, and calling at Wellington. Fares from: First, \$202 (£101); Tourist, \$144 (£72).

Ask about connecting travel to and from Sydney in the ship or by other means before and after the Cruise  
★ Allocation of a cabin at a particular rate depends on availability at the date of application.

deepest parts of the ocean and obtain sample cores from the sea bed at 33,000 feet. A landrover and trailer will also be carried in the garage for use by the scientists and survey teams when working ashore. Other hydrographic operations will be assisted by a Wasp helicopter.

Like her sister ships — the "HECLA" and the "HECATE" — the HYDRA has an overall length of 260 feet, a displacement of 2800 tons, a range of 12,000 miles and a speed of 14 knots. Her hull is specially strengthened for navigation in ice and the bow propeller will give improved manoeuvrability. She will have a complement of 117 officers, scientists and ratings.

There have been six earlier HYDRAS in British Naval history, the first was launched in the Thames in 1778.

Short Bros. and Harland have been awarded the first McDonnell Phantom airframe sub-contract order to go to a U.K. company. McDonnell is placing with them a contract for the manufacture of the outer-wing and outer-wing leading edge flaps for the R.N.-R.A.F. ordered Phantoms. Tooling and detailed fabrication is already under way.

**DARTMOUTH, DEVON.** After six years of research in their home laboratory George Tessyman, the well-known Dartmouth diver, and Dave Thomas have perfected a process for extracting 'agar' from seaweed. Agar is an expensive substance used in many industries for modifying the physical characteristics of ready-mixed foods, toothpaste etc., and as a base for growing cultures in medical research. Other by-products are expected to be valuable animal foodstuffs.

### H.M.S. 'CHURCHILL' AGAIN

Britain's fourth nuclear-powered submarine—ordered last month—is to be named after Sir Winston Churchill. She is to be a Fleet Submarine (formerly called hunter-killers) and will commemorate the Navy's most famous First Lord of both world wars. Although no previous H.M. ships has been named after Sir

Wiston, there has been a *Churchill* in the Fleet before. She was the former U.S.S. *Herndon*, a 'four-stack flush deck-destroyer' which was among the 50 American destroyers to be transferred to the Royal Navy in 1940. The destroyer was completed in 1920 and renamed *Churchill* after U.K. and U.S. place-names. The previous *Churchill* took part in Atlantic convoys, including one for the big build-up in North Africa after the landings of Operation Torch in 1942. She was transferred to the Russian Navy in 1944 and renamed *Deiatelniy* and was sunk by a U-boat torpedo in the Arctic Ocean in January 1945.

### UNITED STATES OF AMERICA

Doubling of the production schedule of the U.S.M.C.'s CH-46A Sea Knight helicopter has been ordered by the U.S. Defence Department and Boeing-Vertol Division has been given a \$10,700,000 contract for procurement of long-lead-time items against future orders for the type—a medium assault transport helicopter already in operation with the Atlantic and Pacific fleets. This action follows the earlier Defence Department order for a 100% increase in production of the U.S. Army's CH-47A Chinook helicopter, and in consequence Vertol is rapidly expanding employment. Primary role of the Sea Knight is the deployment of up to 25 combat-equipped Marines, artillery and support equipment from amphibious assault landing ships to advanced areas under all-weather conditions. Further helicopter orders are believed imminent because the Defence Department recently approved increases in the U.S. Army helicopter units adding up to 27 new Bell UH-1D Iroquois companies (20 helicopters each) and five new Vertol CH-47A Chinook companies (of 16 aircraft each).

### N5s FOR THE U.S.N.

The U.S. Navy has bought three SK-5s (GE T58-LM 100-engined Westland SR.N5s) from Bell Aerosystems. The basic hulls have already been delivered to Bell by Westland and are in final assembly at Buffalo.

N.Y. The \$1,500,000 order follows an extensive evaluation last winter and spring.

### INTRUDER IN ACTION

Grumman A-6A Intruder attack aircraft of VA-75 launched from the U.S.S. *Independence* were in action over Vietnam for the first time on July 5 last year. Grumman Aircraft is soon to conduct studies for the integration of the Phoenix air-to-air missile system into the A-6A.

### SOVIET SUBMARINE STRENGTH

U.S.N. sources estimate the Soviet Navy submarine strength at about 400 submarines, with 150 of them less than eight years old and about a third of these nuclear powered. Against this total the U.S.N. has about 100 submarines, many of them nuclear. In consequence the United States is giving ASW a high priority, and is currently seeking R & D sources for a preliminary system design for an ASW ship integrated combat system to increase the performance effectiveness of anti-submarine combat systems in surface ships.

### NORTH AMERICAN OV-10A FLIES

The North American OV-10A counter-insurgency aircraft—winner of the Navy's "COIN" competition—made its first flight at Columbus, Ohio. North American were awarded a contract to build seven prototypes in August 1964, by the Bureau of Naval Weapons.

Pacific-based FBM submarines of the U.S.N. are expected to be the first converted from the Polaris A3 missile to the more advanced Lockheed Poseidon missile, now under development. Commentators forecast that three more Polaris submarines will be added to the four currently assigned to Western Pacific patrols this year and that the first conversion will be made when the first of the older members of the fleet is docked for extensive overhaul in late 1966 or 1967 at the Puget Sound Naval Shipyard.

## ARMY FLAT-TOP

The U.S. Army is looking for an aircraft carrier. No intention of invading Navy's mission, but it wants to set up mobile maintenance shop aboard carrier where it can land light planes as well as choppers.

The Army recently acquired the old Navy seaplane tender, *U.S.N.S. Albatross*, renamed it *Corpus Christi Bay*, and is outfitting it as a floating repair shop. But the ship will be restricted to repair of aircraft components and helicopters because it can't take fixed wing planes aboard. Small World War Two jeep carrier, now in mothballs could accommodate Army planes.

Shipboard repair hops aren't a new idea. Army Air Force had some in the South Pacific in World War Two. But while A.F. and Navy now fly planes to major repair depots in the Philippines or elsewhere in the Far East, the Army's short-legged aircraft must be repaired nearby.

With air-conditioned workshops fitted with full assortment of machine tools, sheet metal equipment, etc., plus living quarters for personnel, Army's *Corpus Christi Bay* will be a big improvement over repair facilities now available in South Vietnam. If a second repair ship is needed, it's likely the Army will get its carrier.

## HELICOPTERS FOR SEA-BED RESCUE

The U.S. Navy is planning an "undersea helicopter" to rescue survivors of disabled submarines.

Such a craft would have propellers at both ends and be able to manoeuvre underwater like a helicopter does in the air.

The Navy is pressing ahead with its planning, following the tragic loss of the nuclear submarine *Thresher*, which went down in 8,400 feet of water in April, 1963, with 129 men aboard.

The "undersea helicopter" concept is the mainstay of the Navy's multi-million pound programme to increase rescue research, and recov-

ery operations on the ocean floor.

Engineers have tabbed the proposed craft T.P.S.—for tandem propeller submarine.

They say development of the vessel will revolutionise rescue techniques where submarines become disabled.

Engineers say a prime advantage of the T.P.S. is that it would have exceptional manoeuvrability at low or even zero speeds.

The T.P.S. would be able to move straight up and down, sideways, or roll over like a spacecraft.

It could yaw, roll, pitch, heave or sway enabling it to get to a stricken submarine and place its hatch over the hatch of the crippled vessel.

As at present envisaged 12 to 14 men could be taken aboard a T.P.S. with the rescue craft making repeated trips to a mother warship.

Besides swift rescue operation, the Navy also envisages the T.P.S. as a vessel capable of carrying out research work at great depths.

Initially, it is planned for a test vehicle to operate down to 6000 feet followed by four T.P.S. vessels operational to depths of 20,000 feet by 1971.

The Navy's special projects office says it expects to let a contract for design studies this year.

Engineers say the biggest problem in building of such vessels is to obtain materials to withstand the tremendous pressure at great depths.

At 20,000 feet a force of 8800 lbs presses on every square inch of surface.

The motors turning the propellers or water jet fans will, therefore, be located outside the inner pressurised hull of the craft.

## OVERDUE

The first of the Navy's new Douglas TA-4E trainers, went to fleet replacement training squadrons on both coasts during February, this year, supplanting Grumman TF-9J Cougars. Though only 35 TA-4Es have been ordered, far Naval Air Advanced Training Command, with headquarters at Corpus Christi, Tex., figures it will need 300 or more by 1970 to replace its Cougars.

Marine Corps also needs new trainers.

The TA-4E is an improved modification of the single-seat A-4E Skyhawk attack fighter. Powerplant is Pratt & Whitney J52 turbojet with 900 lb thrust which gives it a top speed of just below Mach 1, a cruising speed of 500 m.p.h. and a range of almost 2000 miles. Maximum gross takeoff weight of combat A-4E is 24,500 lb, though the trainer would normally operate at less.

The TA-4E, however, will be capable of combat operations, with provision for bombs, rockets, missiles and guns. It will be flown from carriers as well as airfields. It is 42.5 ft long, 28 in. more than the A-4E. The span of 27.5 ft and 15 ft height are identical to A-4E.

A new advanced Navy trainer is overdue. Cougars have been operational for 10 years, trainer versions since mid-1956. Production of the TF-9J ended in 1959, with a total of 399 built.

## NAVY ORDERS MORE TA-4Es

Production of TA-4E Skyhawks through 1967 has been assured by a \$35,200,000 contract awarded to the Aircraft Division for Navy procurement of 73 additional two-place Skyhawk jet trainers.

The award was the second option exercised by the Navy on the original TA-4E contract last year, calling for an initial 35 aircraft at a price of \$29,400,000, including development costs.

The first option, exercised in June of last year, authorised production of 31 or more TA-4Es at a ceiling price of \$14,900,000.

The new option for continued production raises Department of Defence commitments under the TA-4E contract to 139 aircraft and \$79,500,000.

## GRUMMAN S-2 TRACKER

The U.S.N. is seeking a replacement for the Grumman S-2 Tracker as a carrier-based ASW aircraft, but the matter is still at an early stage and the production stage is unlikely to be reached until 1967—possibly 1968. Its requirement, designated

VSX, has been under study by the Navy's Office of ASW Programmes since April 1964, and R & D sources are now being sought in the industry to study analyses of airframe, wing design, lift devices, powerplant needs, sensor configuration, mission effectiveness of powerplant types, and the influence of various configurations on cost, development time, maintenance and support. Development from this stage could probably take the project to budget discussion phase, and possibly production in 1967 if sufficient urgency is attached.

## ATLANTIC BID IN TINY SAIL BOAT

William Verity, the American yachtman, says he will try again to sail his 12 ft home-made sailboat to Ireland in mid-May, 1966.

Verity's previous trip was postponed after he was blown off his course on the first leg of his cruise—from Vera Cruz, Mexico, to Fort Lauderdale. It took him 36 days to sail from Vera Cruz to Mobile, Alabama.

Proposals have been invited by the U.S.N. from ten firms for the design and development of a prototype deep submergence vehicle to be used in rescue of crews trapped aboard disabled submarines. The Navy's initial plan is to have 12 of these vehicles stationed at strategic points around the world where rescue services might be needed. The rescue vehicle needs to be air-portable by such transports as the C-141, so that it can be brought into operation in less than 24 hours at the underwater disaster site. Bids for the contract have been invited from General Electric, General Dynamics, Grumman, Lockheed, North American, Litton, Lear Sigler, Westinghouse and Newport News Shipbuilding and Drydock Co. The successful contractor will have eight months to complete advanced design work and 18 months to build a prototype.

## SEALAB 2

The main object of the latest Sealab Project, organised by the United States Navy, is to determine how much useful work can be accom-

plished by divers living at a depth of 250 feet. It's planned for late summer, off La Jolla, California, and two ten-man diving teams will live in the underwater house for 15 to 30 days.

One improvement on the facilities which were available for last year's experiment: a helium speech converter which makes intelligible conversation of the resultant quacking noises from divers breathing helium mixtures. Sealab II is a cylindrical building and measures 50 feet by 12 feet. Intensive training will last four months and there may be some civilian scientists on the project.

## ALL-WEATHER CARRIER LANDINGS

Further development of the U.S.N.'s all-weather carrier landing system is to be undertaken. The system, by Bell Aerosystems, permits hands-off landings on pitching and rolling carrier decks regardless of weather: it uses radar units, data stabilisation equipment, a tracking converter, and display control consoles. Over 400 landings were made during recent trials on U.S.S. *Kitty Hawk*. For an automatic landing the aircraft is flown to the general vicinity of the carrier and is picked up by the system as it flies through an approach area or "gate". It is tracked by radar which supplies data to a computer; the system compensates for the pitch and roll of the ship and sends flight-path corrections to the aircraft via a data link. This continues until touchdown.

Under the contract, Bell will replace analogue computers with digital computers and introduce more micro-modularised components to improve the system's reliability.

## U.S.S.R. MORE SOVIET MISSILES

New photographs of Soviet missiles continue to appear in Russian newspapers. A recent example, commemorating Soviet Navy Week, shows a winged missile being slung aboard a fast patrol boat. Missiles are stowed within containers on the after deck — four per boat. When opened they allow the missiles to be launched at an angle of about 30

degrees from trough-like ramps with the aid of undartail boost.

Configuration is that of a small pilotless aircraft about 14 ft (4.27 m.) long with sweptback wings and a tail assembly with a vertical fin and tailplane with large anhedral. Control is by conventional ailerons, elevators and rudder.

The missile, clearly subsonic, has a rounded nose which may contain the homing radar. A sustainer rocket motor exhausts from the tail. It would appear that steering is by command guidance from the launching vessel and that the effective range is little more than 10 miles (16 km.).

Another picture shows a "missile capable of carrying a nuclear warhead" being fired from a Soviet warship. Some years ago the Soviet Navy converted a number of "Sverdlov"-class cruisers as missile carriers. They were also equipped with a variant of the land-based surface-to-air missile NATO code-named Guideline widely deployed in the Soviet Union and the satellite states. This radar-command/beam rider missile is roughly equivalent to America's MIM-3A Nike Ajax.

Guideline, which has also appeared in Cuba, Iraq and Indonesia, may have been the missile responsible for destroying American aircraft over North Vietnam last year. On July 24th an F-4C Phantom was shot down by a missile 40 miles west of Hanoi; a Skyhawk suffered the same fate on August 12th whilst on armed highway reconnaissance 60 miles south-west of the town. Seven surface-to-air missile sites had earlier been reported closer to Hanoi. Two of these were of mobile type of the kind which brought down the American aircraft.

## CRUISING

About 30 Communist Chinese and 80 Russian submarines are cruising the Pacific Ocean, according to the U.S. Chief of Naval Operations, Admiral David L. McDonald, in an interview published in the "Christian Science Monitor".

Admiral McDonald said some of the Russian submarines were nuclear-powered.

to sunny SOUTH AFRICA . . . or on to ENGLAND



## Southern Cross & Northern Star

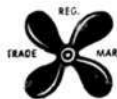
One Class travel in air-conditioned comfort with the latest in amenities.

- Every Cabin Air-conditioned
- Swimming Pools and Lido
- Tavern Night Club
- Large Sports Areas
- Children's Playrooms
- Elevators
- Orchestra
- Stabilizers

Single Fares to South Africa from \$248  
Single Fares to England from \$312

### SHAW SAVILL LINE

8A CASTLEREAGH ST., SYDNEY. Phone 28 1828



**THE NAVY IS  
ALWAYS AT WAR . . .**

Yes—the navy is always at war with corrosion and marine growths which attack the hulls of fighting ships. For more than eighty years the weapons to fight this war have been supplied to Her Majesty's Navies throughout the world by International Paints—world leaders in marine paints.

Australia's Merchant Marine, the navy's partner in war, is also protected by International Paints. All over the world, from over 1,000 distributing points, the products of International Paints are available. The same high quality goes into every can—whether marine paint or the famous Rapid Interlux range of household finishes.

Follow the navy's lead—protect your own boat, and your home, too, with International Paints. A complete range of enamels, undercoats and primers, together with Majora Rapid Interlux Plastic Matt, Australia's foremost plastic paint, ensures that there is an International Paint for every job.



**INTERNATIONAL MAJORA PAINTS PTY. LTD.**

Australian Unit of INTERNATIONAL PAINTS LTD.

The World's Largest Paint Organisation

## FRANCE

### ATLANTIC PROGRESS

Flight trials of the first production Breguet 1150 Atlantic maritime reconnaissance aircraft have begun. This first aircraft is destined for France's Aeronavale while the second, will be the first for the Federal German Marineflieger der Bundeswehr. The programmed production schedule of three aircraft per month is to be attained later this year.

### SKYRAIDERS TO CAMBODIA

France has dealt the United States a two-edged rebuff in selling ten Douglas A-1H Skyraiders, retired from the Armée de l'Air, to Cambodia. The U.S. State Department had asked for the sale to be cancelled, as U.S. relations with Cambodia, which borders South Vietnam, are very strained.

France rejected the request, as previously it had declined to sell the Skyraiders to the U.S.A.F. The U.S.A.F. and S.V.A.F. have found the Skyraider an ideal aircraft in the Vietnam war and have now run through the U.S.N.'s remaining stocks of this veteran strike aircraft.

### SECOND NUCLEAR SUBMARINE

France's Defence Minister Messmer has announced the ordering for the Navy of a second nuclear missile submarine, to be equipped with missiles of one-megaton force. The test launching of one of these missiles is scheduled for the end of 1967, and they will enter operational service in the period 1968-70.

### FUTURE PLANS

French naval plans for the next 10 years afford for an increase in tonnage of 50,000 to 300,000 tons. The principal projects will include three Polaris-type nuclear powered submarines; two *Daphne* class conventional submarines; one 3000 ton high-performance submarine prototype; five 2500 ton corvettes; one ocean and eight coastal minesweepers; and the refitting of six *Naval* class submarines. Five anti-submarine destroyers are to get \*Malacon missiles, while two sister ships will be rearmoured with \*Masurca anti-aircraft missiles.

\*See missile notes.

The French deterrent submarine programme is already under way, following the launching last year of an experimental submarine for practical testing of the 1860 mile range missiles which will be carried in the operational nuclear boats. By 1967 the Pacific Test Centre in French Polynesia will be completed and will replace the present centres in the Sahara. A number of merchant ships are being bought or chartered by the French Government to accommodate engineers and technicians working on the Pacific missile testing range.

By 1970 the French Navy will consist of two attack carriers and one helicopter carrier; two cruisers and a missile frigate with a second under construction; forty destroyers and dual-purpose frigates, of which nine will have been completely refitted; five corvettes; twenty-one submarines; ten maintenance ships, including two oilers; an amphibious force of thirteen landing ships and craft; and one hundred minesweepers.

The French military budget has increased this year by £70m. over the 1964 figure, and naval expenditure has increased by £19m. The programme over the next five years will include production of nuclear materials, weapons development and production, weapons experiments and testing, and nuclear propulsion development.

## ITALY

### SEA KING FOR ITALIAN NAVY

Costruzioni Aeronautiche Giovanni Agusta has reached preliminary agreement with United Aircraft for the licensed manufacture in Italy of the Sikorsky SH-3D Sea King amphibious ASW helicopter for the Italian Navy. The SH-3D, which is scheduled to enter service this year with the U.S. Navy, is an improved version of the current SH-3A with up-dated ASW equipment and 1400 shp General Electric T58-GE-10 engines.

## JAPAN

### SEA GIANT

NAGASAKI—A mammoth new 118,000 ton deadweight tanker was christened the "Oriental Dragon" at a Japanese shipyard on 14th December, 1965.

## DREDGING PORTS

Japanese steel mills are dredging ports to enable the entry of larger ships needed to carry coal and iron ore from Australia.

The Japanese steel industry was planning to build several coal and ore carriers of 70,000 to 80,000 deadweight tons, the Japan Iron and Steel Federation said in Tokyo.

In the future the industry hoped to put carriers of the 100,000 deadweight ton class on the Australian run.

### JAPANESE LAUNCH LARGEST VESSEL

A 150,000 ton tanker—the largest vessel ever floated—was launched at the shipyard of Ishikawajima-Harima Heavy Industries, Yokohama.

Larger by 15,000 tons than the 135,000 ton (deadweight) *Nissho Maru*, also a Japanese tanker, the new vessel, christened *Tokyo Maru* cost an estimated \$11,900,000.

The mammoth tanker is 306.5 meters long 47.5 meters wide and has a draft of 16 meters.

Its 30,000 horsepower steam turbine engine will generate a speed of 17 knots. It will carry a 29-man crew.

The *Tokyo Maru* will carry crude oil from the Persian Gulf to Japan for a group of Japanese oil refineries. Builders report the vessel can carry 150,000 tons of oil.

## KENYA

### HIGH COMMISSIONER LAUNCHES PATROL BOAT

The High Commissioner for Kenya, H.E. Dr. J. N. Karanja, launched the first of three patrol boats built by Vosper's of Portsmouth for the Kenya Navy. These vessels will be 103 ft long have speeds of over 20 knots, two 40mm guns and cruising ranges of some 1500 miles. The purchase was made possible by the British Government's gift of \$1.3m. as part of a long-term aid programme: £2m. for the craft, the rest for the Naval Base at Mombasa and for maintenance and training equipment.

# ASHTON DRY CLEANERS

WELL KNOWN IN R.A.N. CIRCLES FOR  
SERVICE AND QUALITY

68 Oxford Street,  
Sydney

PHONE 31-4473

A Company of the Vickers Group

# Cockatoo Docks & Engineering Co. Pty. Limited

BUILDERS OF MANY  
OF THE NAVY'S FINEST  
FIGHTING SHIPS

Cockatoo Island,  
Sydney

TELEGRAPH ADDRESS: CODOCK

TELEPHONE 82-0661

# NICOL Bros. Pty. Ltd.

ALL CLASSES OF  
STEAM, DIESEL AND GENERAL  
ENGINEERING

Boiler Makers  
Oxy Acetylene and Electric Welders  
Plumbing and Electrical Work

10-20 Weston Street,  
Balmain East, N.S.W.

PHONE 82-0367 (3 Lines)

After Hours:

76-9485 — 86-3225 — 36-5708

# SYDNEY SLIPWAY & ENGINEERING CO. PTY. LTD.

123 DARLING ST., BALMAIN, N.S.W.

MARINE AND GENERAL ENGINEERS

- Slipway Capacity up to 850 Tons
- Fabrications up to 20 Tons
- Pressure Vessels
- Manufacturing of the Victor Oily Water Separators
- Fitting and Machining of all Types
- Certified Testing of Cargo Blocks
- Contractors to the Army and Navy Departments

Phone: 82-1506, 82-1482, 82-3277



Taken from Macao with an 800 millimeter lens, shows a Communist Chinese gunboat, the largest seen in the waters around the Portuguese colony. Based at nearby Lappa Island, it is one of several heavily armed Communist Chinese gunboats constantly patrolling the Pearl River and West River areas in an attempt to stem the flow of refugees from mainland China to Macao.

# KOREAN LST IN VIETNAM

The Korean Landing Ship "Wee-bong" (LST 812) steams out of Saigon harbour en route to the Republic of Korea following eight months of service in the Republic of Vietnam. The homeward-bound vessel was relieved by a sister ship "Su Yong" (LST 813) at a unit rotation ceremony. During the ceremony Admiral Kim Kwang-ok, Chief of Staff for operations (Republic of Korea) received a Republic of Vietnam naval medal, presented by Vietnamese Major-General Tran Ngoc Tam. Two other ROK naval officers and 10 warrant officers were awarded Vietnamese medals of honour.



These Landing Ships are of the ex-U.S. LST Type; displace 1,653 tons standard, 2,366 tons beaching (4,080 tons full load), and are 328 feet in overall length. They are armed with 7-40 mm. and 6-20 mm. anti aircraft guns. Diesel powered with two shafts—B.H.P.: 1,700 equalling 11 knots. Cargo capacity is 2,100 tons. Complement of 113 officers and men.

(U.S.I.S. Photograph)

# U.S. SUBMARINE VISITS SYDNEY

The modified Balao class submarine, U.S.S. Archerfish (AGSS-311) began an eighteen day visit to Sydney on 18th December, 1965. This was the second Christmas leave spent in Sydney by the crew of the Archerfish. Two civilian oceanographers are aboard along with the crew—5 officers and 68 enlisted men—all bachelors.

## HISTORY

Her keel was laid on January 22, 1943, at Portsmouth, New Hampshire, and four months later, March 29, 1943, Archerfish was launched and christened.

Only one year to the day had passed since the laying of her keel before Archerfish first drew blood by sending torpedoes into a 9,000 ton enemy freighter on January 22, 1944.

The high point of her wartime service occurred on the evening of November 28, 1944, while patrol-

ling off Tokyo Bay. A large aircraft carrier screened by four destroyers was sighted departing the bay on a southerly course. An undetected chase ensued which ended just before dawn on November 29 with the firing of six torpedoes. Four direct hits proved fatal to the carrier which sank at 1055 hours that morning with the loss of 500 men, although it was not known at that time Archerfish had successfully attacked the Shinano only 17 hours after starting on her maiden voyage following a construction period of more than four years. This ship

displaced 59,000 tons and was initially designed as a Yamato class battleship. However, it had been converted during construction into a gigantic aircraft carrier which remained the largest ship ever built until the advent of the Forrestal class carriers nearly ten years later. For this Archerfish and her officers and men were awarded the coveted Presidential Unit Citation.

The end of the war saw Archerfish return to peacetime operations before being de-activated in June, 1946. In 1952, the reactivated

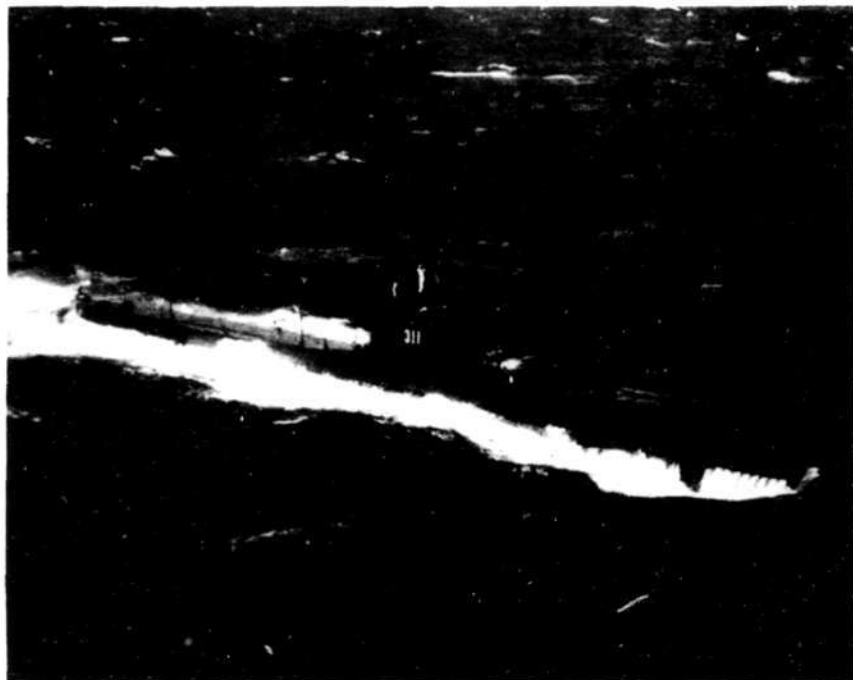
Archerfish joined the U.S. Atlantic Fleet. Another tour in mothballs followed during the period 1955-1957. In 1958 Archerfish was introduced to hydrographic work and in 1960, she was selected for Operation Sea Scan, an extensive hydrographic survey of both the Atlantic and Pacific Oceans, upon which she is still engaged. In order to perform this mission, Archerfish seldom visits her home port, Pearl Harbour, and spends a great majority of her time at sea. Most months see her sail at least 5,000 miles and during her best month to date, she covered over 10,000 miles. Due to the nature

of her operations, the officers and men are all volunteers and nearly all are unmarried. The advantages of such a mission are the variety and number of exotic foreign ports visited.

## STATISTICS

Archerfish is a Fleet Type Submarine, the same class which attained such success in World War II. Archerfish has received some modern equipment since the war. The boat displaces 1,807 tons and is 311 feet in length. For propulsion on the surface, the boat is powered by four nine-cylinder op-

posed piston diesel engines driving attached DC generators which in turn furnish electric power to the main motors that are geared to the two propeller shafts. Upon diving, the electrical power source for the propulsion motors is shifted to the two storage batteries, each composed of 126 cells. The cells are of the standard lead-acid variety and each weighs approximately one ton. Due to her mission as a hydrographic survey vessel, Archerfish has been demilitarised by removal of her torpedo tubes, torpedoes, and fire control equipment. At a cruising speed of 12 knots, Archerfish can sail 12,000 miles without refueling.



U.S.S. ARCHERFISH (AGSS-311)

## SEA CADET CORPS NEWS

### EFFICIENCY TROPHY

The result of the annual efficiency competition among Australia's thirty-nine Sea Cadet units has been announced.

The efficiency trophy, presented by the Navy League of Australia, was awarded to the training ship DERWENT in Hobart, Tasmania.

The Naval Board sent its congratulations to the Hobart unit.

Training ship DERWENT has seven sea cadet officers, five instructors and 120 cadets. Two cadets joined the R.A.N. during 1965 while four other joined the R.A.N. Reserve.

Award of the annual efficiency

trophy is based on an inspection of the most efficient Sea Cadet unit in each State by the Director of Naval Reserves.

New South Wales has eight Sea Cadet units, Victoria 8, Queensland 7, Western Australia 6, Tasmania 6, South Australia 2, Australian Capital Territory, and Northern Territory, one each.

## NAVY LEAGUE VISIT TO H.M.A.S. PERTH

The Secretary of the New South Wales Division has arranged with the Commanding Officer of H.M.A.S. Perth, Captain Ian Cartwright, R.A.N., for Members of the Division to inspect our new Guided Missile Destroyer (DDG) H.M.A.S. Perth, on Sunday, 17th April, 1966, at 10.00 a.m.

A letter will be sent to all members when final details are known as regards Perth's berthing arrangements.

# J. S. Coulthart & Son

(Proprietor, D. Coulthart)

BUILDERS AND CONTRACTORS

Specialising in  
ALL TYPES BUILDING CONSTRUCTION  
COMMERCIAL — INDUSTRIAL —  
DOMESTIC

Contractors to the Royal Australian Navy

15 Sheppard Street,  
Nowra, N.S.W.

Phone Nowra 2-2528

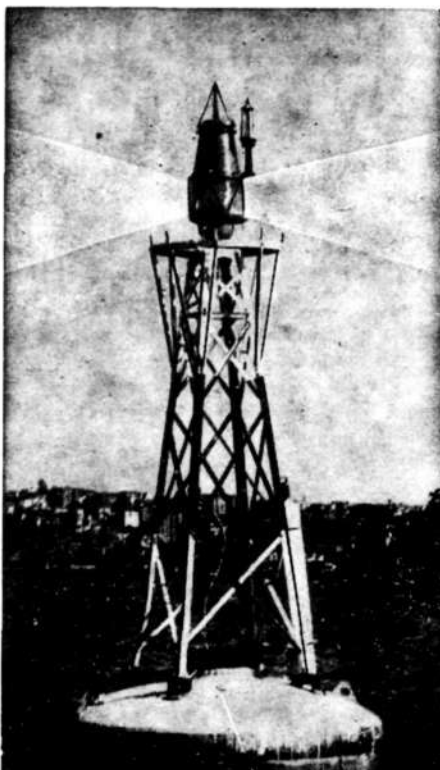
With the Compliments of



ICE CREAM

Cherry Spree ☆ Caramel Capers  
☆ Gaytime

"IT COULDN'T  
BE CREAMIER!"



**TRUST.** Vessels negotiating  
harbours trust navigation lights for  
safe passage. These lights operate on  
acetylene gas supplied by C.I.G. This  
is one of the many ways C.I.G. Industrial  
Gases and Equipment help the Royal  
Australian Navy.

Helping to make  
Australia great



THE COMMONWEALTH INDUSTRIAL GASES LIMITED  
138 BOURKE ROAD, ALEXANDRIA, N.S.W.

CIG/87.39A



## "The Civilian Arm of the Navy"

The principle 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.

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 League consists of Fellows and Associates. All British subjects who support the objectives of the League are eligible for membership. Members receive free copies of the League's magazine "The Navy". For further particulars please dispatch the form provided below to your local Secretary.

New South Wales — Box 1719,  
G.P.O., Sydney.

Victoria — Room 8, 8th Floor, 528  
Collins Street, Melbourne, C.I.

Queensland — Box 376E, G.P.O.,  
Brisbane.

Tasmania — 11 Quorn Street, Sandy  
Bay, Hobart.

South Australia — 30 Pirie Street,  
Adelaide.

Western Australia — 182 Coode  
Street, Como.

Australian Capital Territory — 60  
Limestone Avenue, Ainslie, Can-  
berra.

Northern Territory — C/- H.M.A.S.  
Melville, Darwin.

TO: The Secretary,  
The Navy League of Australia.

Please send me details of membership of the Navy League of Australia.

Name: \_\_\_\_\_

(Please print clearly)

Address: \_\_\_\_\_

(Please print clearly)

State: \_\_\_\_\_

YOU'VE TRIED THE REST  
NOW TRY THE BEST  
at

## Blacktown Retreads

Full range of Armstrong and Cooper Tyres at Big Reductions, Mohawk American Tyres, New Hardie, Free Fitting, Free Balancing, Prompt Exchange Service

Retread Tyres or Exchange  
640 x 13, 590 x 15, 520 x 14—\$7  
Rear Golden Fleece Service Station

106 Sunny Holt Road,  
Blacktown, N.S.W.

PHONE 622-1807

"GOLDEN FLEECE"

### Doonside Service Station

Hillend Rd., Doonside, N.S.W.

Mech. Repairs, Lube, Oxy and Electric Welding, Wheel Aligning and Balancing, Panel Beating and Spray Painting, Full range Spare Part and Accessories, Full Car Care Service, All Work Guaranteed

PHONE 626-9119

With compliments of

### GLENDENNING'S BUTCHERY

63 MAIN ST., BLACKTOWN, N.S.W.

Prime Cuts of Pork, Lamb and Beef  
Satisfaction Assured

Phone 622-1340

The one  
that tastes  
so good

Flavour is what you pay for in coffee. That's why coffee lovers drink Nescafé. It's the one that tastes so good. Nescafé flavour doesn't age out of the jar, the last spoonful is as good as the very first. So, for great coffee flavour all the way, make it Nescafé.

**NESCAFÉ**

43 BEANS IN EVERY CUP

NE2013

# BOOK-REVIEW

## "THE EDUCATION OF A NAVY"

(The Development of British Naval Strategic Thought 1867-1914)

Author: Donald M. Schurman

Publisher: Cassell (1965)

Review by: Lieutenant-Commander E. R. Nield, R.A.N.R. (Retd).

Dr Schurman bases his study on six naval writers, five British, the Colombo, Laughton, Richmond and Corbett, and one American, Mahan. He relates with much scholarly detail how these writers, by describing naval warfare in the age of sail, helped to develop strategic thinking for the use of modern warships. In that age of great technical innovation, as he relates, strategic questions were often confused or obscured.

As a guide to reading, this book will be very useful to students of naval history. All recognised naval authorities agree that the study of naval history is to be encouraged. Where, then, do we find our reading matter?

The naval wars of this century have been well described in personal memoirs and by expert historians, both official and unofficial. The works of these authors are easily found in bookshops and libraries, and for that reason need not be mentioned here.

It is far harder to find the best literature on sailing-ship warfare. Official histories were commonly non-existent or fragmentary or produced long afterwards. For example, the Admiralty produced its first official account of the battle of Trafalgar more than a hundred years after the battle was fought.

Naval warfare is often mentioned by historians, but historians vary greatly in their understanding of naval matters. Some relatively recent books can serve as guides. For classical antiquity we have "Ancient Mariners," by Lionel Casson, and also Greek and Roman Naval Warfare, by W. L. Rodgers. For medieval Europe we have "Naval Warfare under Oars", by W. L. Rodgers. For eastern seas we have "Background of Eastern Sea Power", by F. B. Eldridge. Some scholarly writers on China and Japan, such as Sir John Davis, Edward Parker and Sir Ernest Satow, had had experience of the seas of the Far East.

Finally, let us consider sailing-ship warfare from the sixteenth century to the nineteenth century. The dominant naval power was Britain, and all modern navies have been to some extent modelled on the Royal Navy. Dr. Schurman's book is the best one-volume guide to that period; in discussing his six writers he provides a key to all the scholarly literature about it. Anyone who reads his book or who looks at his bibliographic note (pages 193 to 198) will be able to begin reading standard works on naval history. Much of this material is in periodicals and works of reference, which are not specifically naval. Laughton, for example, wrote

the articles on the admirals for the Dictionary of National Biography. Dr Schurman makes a careful evaluation of the work of his six writers, and in passing introduces other important naval writers such as Bridge, Custance and Burrows.

That, then, is probably the main use of Dr Schurman's book for most readers. Dr Schurman's immediate concern, however, is something more specialised, but very important and interesting. He describes the technological revolution of the nineteenth century as seeming at the time to have made all earlier strategic doctrines obsolete. Armies, however, did not become truly mechanised until the Second World War. Because they were technically backward, they maintained a body of doctrine based on earlier history. Fixed defences were highly developed, and the Navy was given a subordinate part even in planning the defence of Britain against invasion. The naval historians as Dr. Schurman relates, played a big part in the naval revival that took place in the generation before 1914. From their arguments, and from the events of the two world wars, we can learn much about the relation between theory and practice. Thus fortified, we can resist theorists of the atomic age who try to persuade us to forget the strategic lessons of the past.



# FRED KEONG (Retail) Pty. Ltd. OAKLEY ABATTOIR Pty. Ltd.

*The Leading Butcher  
on the Darling Downs*

12 CAMPBELL STREET, OAKLEY, QLD.

PHONE: OAKLEY 127

ALL MEAT IS SUPPLIED FRESH EACH DAY from our own Abattoir  
and we assure you of nothing but the best

DALBY ROAD, OAKLEY, QLD.

Oakey is the Largest Privately Owned Abattoir in the Commonwealth  
with over 300 employees

WEEKLY KILLS EXCEED 2000 Cattle, 600 Calves,  
1500 Sheep, 100 Pigs

**For Particulars and Supplies  
Phone Oakey 127 and 173**

# The United States Naval Observatory

In August 1842, President John Tyler signed an act authorizing the founding of an observatory in Washington D.C., to provide fundamental data and standards derived from astronomical observations.

By Dr. THOMAS D. NICHOLSON

Reprinted by permission from  
Natural History copyright 1965 by  
The American Museum of Natural  
History.

An observatory is primarily a research institution in contrast to a planetarium which is a museum devoted to lecturing, teaching and exhibitions in astronomy. Its facilities — including telescopes of many kinds — and staff are selected to observe and acquire knowledge about the universe through research. Many observatories are affiliated with the astronomy or physics departments of colleges and universities. Others have tours for visitors in their programmes.

There are many observatories in the United States that are, at times, open to the public, and that make arrangements for people to look at the sky through telescopes. The United States Naval Observatory at Washington may be considered the nation's official astronomical observatory. Its purpose is to provide fundamental data and standards derived from astronomical observation.

With respect to time, the Observatory furnishes the accurate standard time used by everyone in the country, including radio and television stations, navigators in naval and commercial vessels, scientists, space technicians, or anyone requiring precise measurement of time. Almost all of the data that comes to our attention, such as forthcoming eclipses; the times of sunrise, sunset, moonrise, and moonset; the duration of twilight; and the advent of the seasons, are derived from tables given by, and observations made at, the Observatory.

The Naval Observatory grew out of two needs that were felt early in the history of the United States. Once the site of the federal capital had been chosen, the government expressed the desire for constructing an observatory in order to estab-

lish a meridian there and through its use to publish an almanac for use by surveyors and navigators.

The Department of the Navy recognized the vital need for supplying ships with information, charts, and instruments for navigation, including precise standards of time. To that end, in 1830, the Navy established the Depot of Charts and Instruments at Washington where, in 1838, a small observatory was built for the standardisation and regulation of time.

On August 18, 1842, President John Tyler signed an act authorising the founding of a Naval Observatory on public lands in the District of Columbia. In 1844, the observatory and staff of the Navy Depot of Charts moved to a 19 acre (7.7 hectare) site not far from where the Lincoln Memorial now stands, and in 1846 it was authorised to make the results of astronomical observations available for the preparation of a national almanac and to make use of its findings as contributions to astronomical science.

As the Observatory grew, so did the federal capital. Very soon the growth of the city made it difficult, if not impossible, to make astronomical observations at the original location, and it became apparent that a new site would have to be found. In 1893 the Observatory was moved further out.

Traditionally, the Superintendent of the Naval Observatory has been a senior officer appointed to that position by the U.S. Navy. The scientific programme, however, is under a scientific director, who is assisted by a large permanent and visiting staff. Under him, work of the Observatory is supervised in

several divisions. The Nautical Almanac office is responsible for preparing and publishing the tables of astronomical data used by navigators, engineers, and astronomers, such as "The American Ephemeris and Nautical Almanac", the "Air Almanac", special volumes used by surveyors, and circulars giving the circumstances of forthcoming eclipses. The Nautical Almanac office also contributes data to other basic astronomical references, such as the annual "Apparent Places of Fundamental Stars".

The Time Service Division of the Observatory has a continuing programme of measuring accurate time from astronomical observations. From the master clock room at the Observatory, standards of time and frequency are supplied to broadcasting stations operated by the U.S. Navy, and observations are made of the times and frequencies broadcast by other agencies, and by foreign time services.

Observations of the position of the sun, moon and planets, and of many thousands of reference stars are continually being made under the supervision of the Six-Inch Transit Circle Division and the Seven-Inch Transit Circle Division. These observations are used to determine the fundamental framework of reference lines on the sky that act as a guide for geodetic measurements of the earth and for the location of celestial bodies.

The Astrometry and Astrophysics Division of the Observatory carries out an intensive programme of astronomical research. The principle instruments used by this division are a 40 inch (101.6 centimetre) reflector and a 60 inch (152.4 centimetre) reflector located at the Flagstaff Sta-

Season's Greetings to the Navy from —

# A. G. Sutton

★ Founders

SEE US FOR —

PIPE AND VALVE CASTINGS  
WATER AND SEWERAGE FITTINGS

We Carry Out Castings of all Descriptions

FERNVALE ROAD, BRASSALL, IPSWICH, QLD.

TELEPHONE 81-2022

## Home Gardeners!

PROTECT YOUR FLOWERS AND  
VEGETABLES WITH PROVED CHEMICALS  
OF

**Amalgamated Chemicals  
(Qld.) Pty. Ltd.**

Over 50 Years in Horticultural  
Chemicals

**Tingira Street, Pinkenba  
BRISBANE**

PHONE 60 4091-6

Save Money on your Insurance Costs by  
placing your Fire and Accident Insurance  
with . . .

**The General Accident Fire  
& Life Assurance  
Corporation Ltd.**

Branches at:  
TOOWOOMBA, LISMORE, BUNDABERG  
and SANDGATE

Chief Office:  
General Buildings  
**Cnr. Creek St. & Eagle Lane  
BRISBANE**  
TELEPHONES: 22821-2,3

tion of the Naval Observatory, in Arizona. The 40 inch reflector was originally constructed at Washington, but it was moved to Arizona about a decade ago because of the deteriorating atmospheric conditions in and about Washington. Designed for astrophysical work, the telescope is used to observe the brightness, colour, and spectral type of stars.

The largest telescope of the Naval Observatory, the 60 inch reflector, was dedicated at Flagstaff on June 19, 1964. Its objective mirror was produced from the largest quartz disc ever manufactured, and although not the largest, its mirror may well have the most accurate surface among the large telescopes of the world. This telescope was designed for astrometric work (accurate measurements of the positions and motions of faint stars by photographic methods). It will be devoted primarily to observations from which the distances of faint stars can be accurately determined. The distances to these stars must be known before their fundamental properties can be studied.

The largest telescope on the Observatory grounds in Washington is the famous 26 inch (66 centimetre) refractor, first placed in service in 1873. It was with this telescope that Asaph Hall, in 1877, discovered the two small satellites of Mars. Completely modernised in 1960, it is still being used actively in the observations of double stars, for the purpose of determining their masses and distances. There are two other moderate-sized refractors at the Observatory — the 12 inch (30.5 centimetre) refractor and a 15 inch (38.1 centimetre) refractor, the latter being used in recent years for observing and photographing asteroids.

The Observatory facilities also include the two transit telescopes, used for timing and observing the positions of celestial bodies as they cross the meridian of the Observatory; a dual-rate moon camera, for observing the position of the moon among the stars in the measurement of ephemeris time; and a photographic zenith tube, which is used nightly to photograph stars passing near the zenith of the Observatory to determine mean solar time.

The scientific programme of the

Observatory actually goes far beyond its own staff and facilities, through participation in astronomical investigations and discussions with many other national and international groups.



Founded in 1842, the United States Naval Observatory is the oldest official scientific agency of the U.S. Navy. The dome houses the 26-inch (66-centimetre) refractory telescope placed in service in 1873. It was with this telescope that the American astronomer, Asaph Hall, discovered the two small satellites of the planet Mars in 1877 (U.S. Navy Photograph.)

## Ships will go underwater

The retiring British Naval Commander in chief of the South Atlantic and South America, Vice-Admiral Sir Fitzroy Talbot, said with Naval brevity earlier this year: "Guns are dead, the Fleet Air Arm has a limited existence, and all vessels will travel underwater."

He was looking 20 years ahead when satellites would be searching

the world and underwater craft could probably move without being seen. He was replying to a suggestion that in modern rocket warfare any navy would become extinct.

The Admiral said the Navy would play a more important role than ever in rocket warfare. Even merchant ships would travel underwater, he said.

FOR THAT SPECIAL  
OCCASION

WEDDING RECEPTIONS  
21st BIRTHDAYS  
BALLS  
SOCIAL FUNCTIONS  
Ring 58-2031

## Riverside Ballroom & Catering Service

OXLADE DRIVE  
NEW FARM, BRISBANE

## RAYSUN PTY. LTD.

Offer sewerer home sites in carefully selected areas — All Raysun Estates are fully developed to the highest standard — Home sites may be purchased on low deposit and extended terms — You buy direct from the Developer

## RAYSUN PTY. LTD.

Newspaper House  
93 QUEEN STREET  
BRISBANE  
PHONE 2-2021

FOR YOUR INSURANCE NEEDS  
CONSULT

### The Liverpool-London & Globe Insurance Co. Ltd.

(Incorporated in England)

FIRE—ACCIDENT—MARINE

AND FOR LIFE ASSURANCE

### The Royal-Globe Life Assurance Co. Ltd.

(Incorporated in Victoria)

440 Collins Street,  
Melbourne

PHONE 60-0571

## BLUE STAR LINE

Regular sailings of fast and modern ships to the United Kingdom, Continental and East Coast North American ports taking Wool, General and Refrigerated Cargo. First-class accommodation for a limited number of passengers.

Full information regarding freight, passage rates and sailing dates from

BLUE STAR LINE (Aust.) Pty. Ltd.,  
380-386 Queen Street, Brisbane  
Phoenix House, 32-34 Bridge St., Sydney  
454-456 Collins St., Melbourne  
198 North Terrace, Adelaide  
Agents in All Principal Ports and  
Tasmania

## Report of Activities and Training Undertaken by the New South Wales Division for the Quarter Ending 31st December, 1965

No periods of continuous training were programmed for the quarter under review. However, weekend training was carried out in the following ships and Naval Establishments.

H.M.A.S. PENGUIN 22nd-24th  
October.

H.M.A.S. WATSON 22nd-24th  
October.

H.M.A.S. YARRA 26th-28th  
November.

H.M.A.S. CRESWELL 26th-28th  
November.

H.M.A.S. ANZAC 26th-28th  
November.

H.M.A.S. PENGUIN 10th-12th  
December.

A higher ranks examination was held in H.M.A.S. PENGUIN during the period of weekend training held from 10th to 12th December, 1965.

The Senior Officer, A.S.C.C. (N.S.W. Division), concluded his Annual inspection of all Units by inspecting the Newcastle Unit, T.S. TOBRUK, on Saturday 2nd October, 1965.

All eight Units were visited on the following dates by the recently appointed Royal Australian Navy Liaison Officer, A.S.C.C. (N.S.W. Division), Lieutenant L. E. Le Rutte, R.A.N.V.R.

16th October T.S. SHROPSHIRE  
6th November T.S. TOBRUK  
13th November T.S. CONDOMINE

& T.S. WARREGO  
20th November T.S. SYDNEY &  
T.S. PARRAMATTA

23rd November T.S. SIRIUS  
27th November T.S. ALBATROSS

Several Units have taken the opportunity to utilise the rifle range in H.M.A.S. WATSON and it is hoped that with continuous practice it will prove possible to enter a team of 8 Cadets in the International Rifle Competition, sponsored each year by the Navy League, of Canada.

On Saturday 2nd October, 1965, each Unit in New South Wales held an "Open Day" and the Corps received excellent publicity beforehand through various channels such as the newspapers etc. Regrettably the overall support from the general public in the Metropolitan area was far from enthusiastic in that the average attendance at the Units was in the region of 30. However, there was a vastly different response in Wollongong where T.S. ALBATROSS had over 300 people pass through the Unit Headquarters in the one afternoon. Television cameras were present on the day and shots of the Unit appeared in the newsreel the same evening.

Sea Cadets sold programmes in Garden Island on Saturday 9th October 1965—the day during Navy Week when the dockyard is open to the general public.

On the occasion of the 1965 Annual Navy League Ball, a Guard of Honour with Band was provided for the Guest of Honour, and in addition Cadets lined the stairs to lend a 'Naval atmosphere'.

The Senior Officer arranged for a radio interview with the Radio Station 2GB for the express purpose of securing new recruits for the A.S.C.C. and to bring before part of the listening public an awareness of the existence of this organisation for boys. The Station was most generous in allowing a broadcast of half an hour. A supply of recruiting leaflets was left with 2GB who asked listeners to write in for a copy if interested and the response has been excellent in that

well over 100 have been requested to date.

By permission of the Commanding Officer (Reserves), four Sea Cadet Petty Officers were allowed to participate in the first R.A.N.R. Petty Officers Divisional Course to be held in H.M.A.S. RUSHCUTTER. This course which continued for nearly 6 months finished in November and it is pleasing to be able to report that two of the Sea Cadet Instructors topped the class at the conclusion of the final examinations. Chief Petty Officer Instructor E. M. DOPSON of T.S. SIRIUS took the honours and Chief Petty Officer Instructor K. G. GRIMLEY of T.S. WARREGO gained second place. The value of this course to personnel of the Corps is immense and the improvement in the Instructors who took part was quite noticeable particularly so within the environs of their own Unit where they could put their newly gained knowledge to good use. A second course is programmed for early 1966 and further Sea Cadet Instructors will be participating.

The Senior Officer and Officers of the A.S.C.C. (N.S.W. Division) gave an 'At Home' on Saturday 11th December, 1965 from 1830 to 2030 hours at the Hotel Manly and over seventy people attended this function. This was the first time such a function had been attempted and from the comments received it would appear to have been highly successful.

L. Mackay-Cruise  
Lieutenant-Commander R.A.N.R.  
Senior Officer

2-4507

### Greenfield Instrument Co.

For many years have been the recognised house for Drafting, Drawing, Survey, Art, Optical and other Precision Instruments

Whatever your requirements it will pay  
you to discuss the equipment with

GREENFIELD INSTRUMENT CO.

Full range of High Grade Binoculars are also available at  
attractive prices — Specialise in Instrument Repair Work

191 GEORGE STREET, BRISBANE  
(Opp. Treasury Building)

2-4507

### ROGERS RETAIL PTY. LTD.

Have your Springs Re-set and Fitted with  
ROGERS D.P. Overload and Shock Absorber  
Leaves. \$12.20 per pair. Leaves fitted free  
when springs are re-set.

214-218 GREY ST., SOUTH BRISBANE  
4-2791

Open Saturday Mornings

**KENNETT BROS. PTY. LTD.**

☆ Builders and Contractors

**6-8822 - 6-8823**

**47 Tynte Street, North Adelaide**



Best Wishes from . . .

## Abbey Detective Agency

(Ex. R.A.N. Personnel)

SKILLED OPERATORS — 24-HOUR  
SERVICE

INVESTIGATIONS OF ALL DESCRIPTIONS  
NO RESULTS — NO CHARGE

**9 Wimbledon Ave.,  
Elwood, Vic.**

Phone: 91-1675 (All Hours)

Best Wishes to all Members from —

**MATRON: RUTH MURRAY (Ex W.R.E.N.)**

## Greenglades Private Hospital

Post Operative  
Medical and Chronic  
Patients

Delightful Seafront View at:

**235 ESPLANADE  
HENLEY SOUTH, S.A.**

PHONE 56-8592

**For Fast Service**



**LUBRICATION**

Best Wishes to the Naval Association from —

**RAY FITZROY (Ex R.A.N.)**

## KENSINGTON SERVICE STATION

We will attend to all your Mechanical and Lubrication Re-  
quirements — First Class Service done by Experts —

Specialists in all Makes

**294 The Parade, Kensington, S.A.**

PHONE 3-4892

# WHAT'S NEW?

Compiled by "Periscope"

### FLAME OUT

A new, emergency fire-fighting blanket, which literally can smother flames from whatever source, has been placed on the market by the North American Asbestos Corp. of Chicago, Ill. The Noramite fire blanket, (3 by 4 feet) is made of non woven, long-fibre asbestos. The company says flames are squelched, on contact, when the blanket is thrown over a fire. The blanket itself will not burn, smoke or char. Price in the U.S.: \$1.79.

### BOOM

Small, precisely controlled explosions are employed by the International Research & Development Co., Ltd., of Newcastle upon Tyne, England to fix tubes in boiler plates. The patented process, which replaces conventional welding or riveting, is claimed to produce savings of one-third in costs and 50 per cent or more in time, while providing joints of higher integrity. The miniature explosive charges are positioned by the operator and are held in place by plasticine. As many as 30 charges can be detonated at once. In addition to savings in boiler manufacture, the British firm says its process permits repairs of leaks without the loss of time involved in dismantling for repairs by conventional methods.

### CRT PROJECTOR DEVELOPED

A new compact and lightweight unit which projects symbols from a cathode ray tube on to a flat surface has been produced by Computing Devices of Canada, Ltd., Ottawa. Its size makes it suitable for all types of aircraft and it is designed to give navigational or tactical information on a plotting board, chart or similar surface.

The unit takes manually injected or automatically fed information

and converts this into conventional cartesian symbols which are displayed on a 2in (5 cm.) diameter bright CRT. This image is projected through a lens system.

Typical displays could cover the changing pattern of anti-submarine search and attack, supply or para-troop dropping.

Audax Ltd. (U.K.) has developed a new mobile telescope lighting tower, called Hi-lite, which is capable of lighting an area of up to 3½ acres, and can have wide application at airports, dockyards, construction sites, etc., with alternative application as a radar or radio aerial. The Hi-lite tower, fully self-contained, is mounted on a 4-wheel trailer, which also carries a 6kw diesel generating plant and four 1000 watt lamps. U.K. sales price with generator, starter equipment and lamps is £1656.

### FLAMEPROOF

A fire access door for ventilating and ducting systems that allows smoke to escape and fire hoses to be inserted but prevents flames from spreading through the aperture, has been developed by James Green Developments, Ltd., of London. The unit consists of a double-sided panel with an asbestos sheeting on the outer side and a perforated metal sheeting inside. If a fire in the ventilation system is suspected the outer asbestos door is smashed and the metal sheeting then allows the smoke to escape. The design of the perforated metal will not allow flames to spread into the building through the access unit. After the asbestos panel has been smashed, water hoses are directed at the panel, which will pivot inward under the pressure and admit water. Available in three sizes, the doors cost from \$16 to \$27.

### NEW ENERGY SOURCE FOUND

A team of German and American scientists have announced a breakthrough to sources of energy which "could dwarf conventional nuclear power."

The 11-member team has successfully created for the first time so-called anti-protons from light.

Professor Peter Staehelin reported his team had produced 18 such particles — negatively charged helium nuclei—which "explode" releasing enormous energy, when brought into contact with their normal counterparts.

Scientists believe that distant milky ways may consist of such anti-matter.

The experiment was carried out at the West German electron synchrotron research institute in Hamburg.

Professor Staehelin said a stream of photons, or light particles, was directed at a target of liquid helium in the experiment, which also used a 25 metre (80 feet) long chain of various types of electro-magnet and particle-counters, coupled to a computer.

The anti-protons were separated from other particles, so-called pions, which are 2000 times as frequent in a so-called Cherenkov counter.

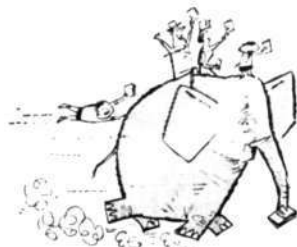
The professor said three young American scientists had taken part in the experiment. He refused to name any of the scientists involved because this was "a genuine team effort."

He was cautious about possible applications of the discovery, stressing that only a few anti-protons could be created in the experiment.

## WHAT'S AN ELEPHANT GOT TO DO WITH THE "COMMONWEALTH"?

Just a symbol — a symbol of strength and size. What's it mean to you? Only this. By banking "Commonwealth" you are with the biggest and strongest Bank in Australia — the Bank that can do the most for you NOW and in the future.

**So — get with the Strength**



CB 82.43

**BANK COMMONWEALTH**

## STURT PRIVATE HOSPITAL

(Sister E. M. Cathro, Matron)

Casual and Permanent  
Patients

GOVERNMENT BENEFITS  
AVAILABLE

**58 DOVER STREET  
MALVERN, S.A.**

**71-7367**



**Quella**  
*Wines*

From the Vineyards of and bottled by

**H. BURING & SOBELS LTD.**  
WATERSVALE — SOUTH AUSTRALIA

Head Office:

20 GILBERT PLACE, ADELAIDE — 51-1884

South Australian Sales Agents:

**R. W. CLAMPETT & CO.**  
Fisher Terrace, Mile End — 57-8011

Interstate Representatives:

Sydney: **H. G. Brown & Sons Pty. Ltd.**, 5 Gibbs Street, Chatswood.

MELBOURNE — Mackenzie, Tootell Pty. Ltd., 19-21 Malmsbury Street, Hawthorn.

BRISBANE — Thos. Brown & Sons Ltd., Donaldson Road, Rocklea.

PERTH — Johnson, Harper Pty. Ltd., 61 Canning Highway, Victoria Park.

HOBART — E. Chancellor Pty. Ltd., 32 Davey St.  
LAUNCESTON — John McKenzie & Co. Pty. Ltd., 63 Cameron Street.

## SOOTHES METAL

General Electric of New York City has moved healing iodine out of the medicine cabinet and into the tool chest as a much-needed lubricant for space-age metals. Heretofore, a serious drawback to the fabrication and use in mechanical devices of titanium stainless steel and other "glamour" metals has been their notorious resistance to lubrication. When titanium or stainless steel parts are rubbed against one another the parts seize and weld together despite coating with their best lubricating oils. A new family of iodine lubricants, G.E. claims, will enable the metalworking industry to machine, roll and polish these space-age metals as readily as ordinary steel, and will spur their use in turbines, rotors, nuclear reactors, heat exchangers and pumps.

## LIFESAVER

The development of a unique, lifesaving rescue blanket based on a superinsulation material used to keep spacecraft components at room temperature has been announced by National Research Corp. of Cambridge, Mass. Called the NRC-Rescue Blanket, the new product is tissue thin, weighs less than 2 ounces, is tough and flexible and folds up into hankie-size. Made of an aluminized plastic-base material, it keeps people warm and dry despite violent weather conditions. Essentially, the way the rescue blanket works is by reflecting the natural body heat of a person covered and by preventing heat loss. The material is an outgrowth of National Research Corp's superinsulation which has been used in both the Gemini IV and Gemini V space missions. The blanket is used for rescue operations by police and other public-service groups. The 56 by 84 inch silver coloured blanket sells for \$2.

## CHECKUP

A portable ultrasonic scanning system for detecting structural weaknesses in aircraft has been developed by Sperry Products Division of Automation Industries of Danbury, Conn. The SIMAC (sonic inspection measurement and control) scanner system consists of ten lightweight packages of electronic equipment on a portable carriage. A single operator, using the equipment,

in much the same fashion that a doctor uses a stethoscope, can detect any structural weakness developing in the fuselage, wings or other parts of an aircraft. The detection system is said to locate and record on paper the presence of corrosion not visible to the human eye, and even micro-organic trouble spots can be pinpointed in fully loaded wing fuel tanks. Price: \$40,000 to \$50,000 depending on instrumentation.

## WRAP IT!

An unconventional "wet suit" jacket without seams, fasteners or closures has been designed by Innerspace Corp. of Glendora, Calif., for cold-water swimmers, surfers and water-skiers. The "Sea Sarong" which fits everyone although it comes in only one size, is a single strip of synthetic foam rubber. The strip is wound tightly around the trunk upward from the hips, overlapping about a third of its width on each wrap. The wrap is begun by putting one leg through a single hole at one end of the strip. It is completed by putting an arm through each of two holes in the free end of the strip and then pulling the material over the shoulders. The material's great elasticity, the company says, permits wearers to vary tensions over different body areas, providing comfortable figure control. The Sea Sarong's tight fit all over the body contours allows less water to enter and is said to hold body heat better than conventional wet-suit jackets. Price: \$10.95.

## QUICK HELP

Sterilized foam dressings that can be applied to severe burns within seconds have been developed for first-aid use by Price Brothers and Co., Ltd., of Somerset, England. The dressings, which can be easily handled even by unskilled people, consist of sheets of 1/2 inch thick polyurethane foam sealed in plastic packs that are then sterilized by gamma radiation. The manufacturer says the first-aid dressing will give a patient considerable protection against pain while being moved and can remain on up to 24 hours without risk of adherence. Available in three sizes from \$1.68 to \$3.22.

Radio-guided parachutes, developed by Pioneer Parachute Co., of

Manchester, Conn., have been tested by the U.S.A.F. in the Bavarian Alps to determine their capability for homing on dropping areas in fog and darkness. The parachute, which has a gliding angle of 1:1 and carries onboard guidance and control equipment weighing 115 lb., is a 51 ft. diameter parasail type. In the U.S.A.F. tests, drops of the steerable parachutes were made from C-123 aircraft to impact zones located at the bottom of a narrow valley, 2000 ft. below the mountain ridge line.

A new range of lubricants using iodine as the key ingredient, has been developed by General Electric, making it possible to use alloys of titanium, stainless steel, nickel and cobalt in moving parts of machinery and with potential applications in the metalworking field where new, tough alloys of these metals are being increasingly used. An experimental four-cycle 2.5 h.p. petrol engine with a combination of titanium, stainless steel and low-carbon steel parts; and an electric motor with a stainless steel shaft and bearings have been used by G.E. in successful demonstration of the iodine lubricant.

## SLIDING TO SAFETY

The inflatable escape slide allows passengers to leave an aircraft in a hurry. The need for such a slide—for use in an emergency or when an airport's conventional steps are not available—arises because of the height big modern aircraft stand from the ground. The jump from the doorway is much too great for the safety of most passengers.

Deflated, the device is compact and self-contained. With its own inflation gear, it packs into the form of a wedge-shaped valise and occupies a space no bigger than 21 by 18 by 10 inches. It can be stowed in any convenient place near the aircraft's doorway, and requires only suitable anchorage points there.

It is air-inflated automatically when it is pivoted about its anchorage points and the free end is thrown from the door. Then it is fully inflated and ready for use in 10 seconds.

Makers: The Walter Kidde Company, Northolt, Middlesex, in conjunction with R.F.D. Company, Godalming, Surrey.

Best Wishes to the Navy League of Australia from —

## F. BAGULEY & CO.

12 NAPIER ROAD, FREMANTLE, W.A.

♦ **Boiler Makers**  
♦ **General Engineers**

For Information — Quotes and Enquiries

PHONE 5-3018

BEST WISHES FROM —

## PRINCE LAUNCH SERVICE PTY. LIMITED

and

## GEOGRAPH TOWING SERVICE PTY. LTD.

Launches For Hire for all Social Outings  
Fishing Trips, etc.

ALL TYPES OF TOWING UNDERTAKEN  
PHONE 5-2973 FOR QUOTES AND INFORMATION

CLIFF STREET, FREMANTLE, W.A.



H.M.A.S. ANZAC (as converted to Fleet Training Ship).

(Photograph by courtesy R. H. Lawrenson)

## GIBBS BRIGHT & Co. Pty. Ltd.

MELBOURNE and Portland  
And at Sydney, Newcastle, Brisbane,  
Cairns, Adelaide, Port Pirie, Perth,  
Fremantle and Hobart

AGENTS FOR:

Shipping: Port Line Ltd., The East Asiatic  
Co. Ltd., Steamship Company Orient Ltd.

Managing Agents for: Australian Pastoral  
Co. Ltd, F.F.S Stud Cattle Co. Ltd., The  
Galway Downs Pastoral Co. Pty. Ltd.

Timber Department: Australian and Im-  
ported Timbers: Plywoods, Veneers,  
Panelboard, Cane-ite, Hardboard, etc.

Insurance: Law Union & Rock Insurance  
Co. Ltd., Ocean Marine Insurance Co.  
Ltd.

TELEPHONE: 67-9281 (10 Lines)

Best Wishes to the "Navy" from —

## SWAN WOOL SCOURING CO. PTY. LTD.



33 Swan Street,  
North Fremantle, W.A.

Phone 5-3231 for All Inquiries

Wherever you go



is at your service



## AT HOME

The Senior Officer and Officers of the New South Wales Division held a successful "At Home" on Saturday, 11th December 1965, P. M., at the Hotel Manly.

More than seventy persons attended, including guests from the R.A.N., R.A.A.F. and Navy League. All were laudatory in their praise of the Hotel staff's courtesy and efficiency and the excellent food served.

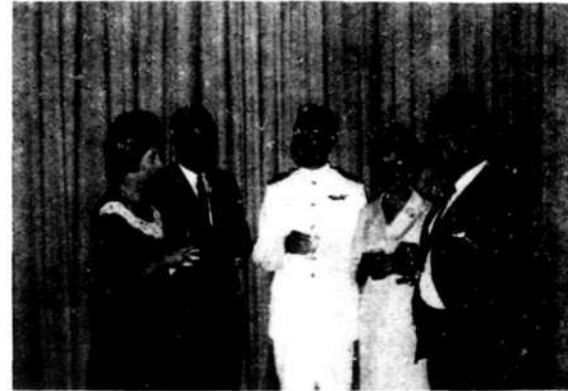
The function, in the opinion of all present, was an outstanding success and it is hoped that other functions of this kind can be organised at some future date.



A GROUP TAKEN AT THE "AT HOME" GIVEN BY THE SENIOR OFFICER AND OFFICERS OF THE NEW SOUTH WALES DIVISION

(L. to R.) Lt. L. E. Le Rutte, R.A.N.V.R., R.A.N.L.O., Miss C. G. Rodgers, Mrs. Le Rutte, Lt. Cmdr. A. A. Andrews, M.B.E., Secretary N.S.W. Division the Navy League of Australia, Mrs. Andrews

Photograph by courtesy — M. C. Rynberk



AT THE SENIOR OFFICERS' "AT HOME"

(L. to R.) Mrs. Mackay-Cruise, Wing Commander Watson, R.A.A.F., Lt. Cmdr. L. Mackay-Cruise, R.A.N.R., Senior Officer, Mrs. Hutchinson, Commander Hutchinson, R.A.N.

Photograph by courtesy—M. C. Rynberk

Best Wishes are extended to the Naval Assoc. from . . .

**L. J. ROBERTS CARRIERS PTY. LTD.**  
(M. Roberts, Prop, Ex R.A.N.)

Suburban and City Deliveries — Agents and Storage  
Warehouse and Commercial

**25 Grallina Ave., Lockleys, S.A.**

PHONE 57-7381

PHONE 57-7381



Best Wishes and Compliments from —

## JOHN FRANETOVICH AND CO.

### ● MARINE ENGINEERS

FITTING — TURNING — BOILERMAKING  
WELDING — BLACKSMITHING  
UNDERWATER SURVEYS, REPAIRS  
AND CLEANING



Telegraphic Address:  
"SAN MARINE", PERTH  
Phone 5-2547

20 Bracks Street,  
North Fremantle, W.A.

After Hours: 86-4911 or 25-1080

Compliments to the "Navy" from —

## ALBIN ENGINEERING SERVICE

23 Mouatt Street,  
Fremantle, W.A.

SPECIALISTS IN MARINE ENGINEERING  
EFFICIENCY AND SERVICE AT ALL TIMES  
SATISFACTION GUARANTEED

PHONE 5-2573

## LAURIE CHIVERS & CO.

BOAT BUILDING SUPPLIERS  
FACTORY DIRECT

- ★ FOR MARINE PLY, GLUE, FASTENERS,  
ETC.
- ★ ALL FITTINGS & RIGGINGS
- ★ FREE ADVISORY SERVICE & QUOTES

### Nedlands Yacht Club

The Esplanade, Nedlands, W.A.  
Phone 86-6075

104 Rome Road, Melville, W.A.  
Phone 30-4208

Best Wishes and Compliments from

## SOUTHERN CROSS SLIPWAYS PTY. LTD.

1 Corkhill Street,  
North Fremantle, W.A.



SHIPBUILDERS & REPAIRERS

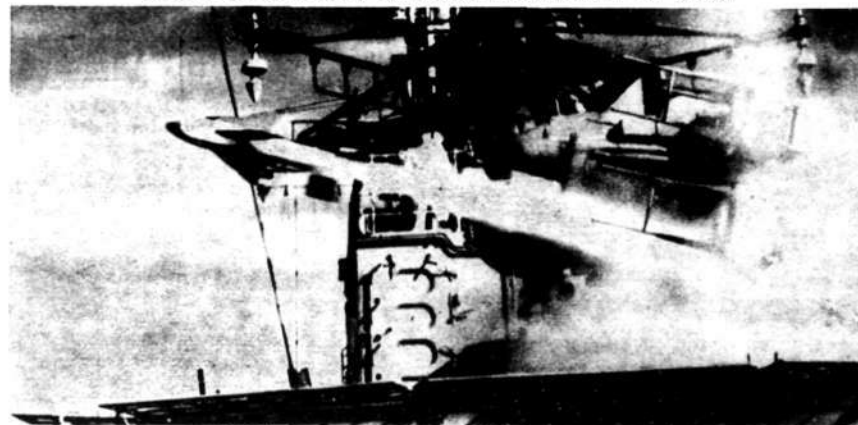
PHONE 5-2855



Bomb and rocket-laden jets, flying in echelon formation, scream off the aircraft carrier Midway of the U.S. Seventh Fleet somewhere in the South China Sea.

(U.S.I.S. photograph)

### "SEACAT"—The Choice of Seven Navies SHORT BROTHERS & HARLAND LTD., London and Belfast



"SEACAT"—ROYAL AUSTRALIAN NAVY'S GUIDED MISSILE WEAPON

☆ Seacat is the Australian Navy's new close-range anti-aircraft weapon. ☆ Seacat has completed acceptance trials. ☆ Seacat enters service only five years from contract. ☆ Seacat is also on order for the Royal Navy, Sweden, Germany and New Zealand. Developed by Short's under British Ministry of Aviation contract, the Seacat, capable of exceptional accuracy and manoeuvrability, is acknowledged to be the most effective close range defence weapon of to-day.

Every Success to the "Navy" from

## Ernest C. Mitchenson

BOAT BUILDER

277 Stirling Highway  
CLAREMONT, W.A.

Recommended for Expert Craftsmanship,  
Dinghies — Yachts or Cruisers

PHONE 3-1017



## MARINE PLY

for boatbuilding,  
exterior panelling,  
gable ends, soffits,  
feature and garage doors,  
caravans.

FULL STOCKS AVAILABLE AT  
**CULLITY TIMBERS**

52 Tower St., Leederville. 28 1031

Best Wishes To The "Navy League"  
from

## B. M. BAHEN PTY. LTD.

WOOL BROKERS

7 High Street,  
Fremantle, W.A.

PHONE 5-3769 — 5-3036

Best Wishes for the Success of "The Navy"  
from

## FREMANTLE FOUNDRY & ENGINEERING CO. PTY. LTD.

MARINE and GENERAL  
ENGINEERS

Boilermakers, Blacksmiths, Oxy and Electric  
Welders — Iron and Brass Founders

Beach Street,  
Fremantle, W.A.

PHONES: 5-1898, 5-2432

# SWIMMING CARNIVAL

The Annual Swimming Carnival of the New South Wales Division of the Corps was held at H.M.A.S. Penguin on Saturday, 19th February, 1966.

All Units in the Division were represented and there was a large crowd of spectators at what proved to be an afternoon of thrilling entertainment.

### AGGREGATE POINT SCORE

T.S. Albatross	10
T.S. Condamine	19
T.S. Parramatta	6
T.S. Sydney	26
T.S. Sirius	26
T.S. Tobruk	14
T.S. Warrego	21



A.S.C.C. SWIMMING TROPHIES

Navy League Trophy and the Weston Service Station Trophy

Photograph by courtesy — M. C. Rynberk

The Navy League Trophy was awarded jointly to T.S. Sydney and T.S. Sirius.

The Sirius Trophy for the 4x50 yards Freestyle Relay race was awarded to T.S. Condamine. The Weston Service Station Trophy for the 4x50 yards Medley Relay was awarded to T.S. Condamine.



A SCENE AT THE ANNUAL SWIMMING CARNIVAL

Photograph by courtesy — M. C. Rynberk

# New Ships of the World's Navies

## H.M.S. Euryalus

H.M.S. Euryalus is a Type 12 anti-submarine frigate and is the seventh of the Royal Navy's latest class of frigates known as the Leander Class. She was built by Scotts Shipbuilding and Engineering Co. Ltd., at Greenock, Scotland and laid down in November 1961. The Euryalus was launched by Lady Bingley, wife of Admiral Sir Alexander Bingley, K.C.B., O.B.E., on 6th June, 1963; the 160th Anniversary of the launching of the first Euryalus in 1803. The present Euryalus first commissioned in September 1964 and sailed for service in the Far East in the Spring of 1965.

H.M.S. Euryalus has a standard displacement of 2,300 tons with a length of 372 feet, and a beam of 41 feet. She has a complement of 41 officers and 245 men, many of whom are young sailors at sea for the first time.

Her main propulsion machinery consists of two sets of steam turbines developing 30,000 shaft horse power and giving her a speed in excess of 30 knots. She is fitted with twin rudders and stabilisers, which, together with her speed designed hull-form give her excellent sea-keeping qualities and high manoeuvrability at speed; important factors in modern anti-submarine warfare.

Although her primary role in war is the detection and destruction of submarines the Euryalus is equally able to engage ships and aircraft, and bombard targets ashore.

For her anti-submarine role the Euryalus is armed with a triple-barrelled anti-submarine mortar, mounted aft. This is automatically aimed and fired by the sonar (under-water detection) equipment, and can fire a pattern of projectiles set to explode at computed depths. In addition the Euryalus carries a



H.M.S. EURYALUS.

(U.K.I. photograph)

Wasp helicopter, armed with homing torpedoes, to deal with enemy submarines at long range.

Her main gun armament is a twin 4.5 inch turret, mounted forward. This is directed by radar and fired automatically. In addition the Euryalus has two 44 mm. anti-aircraft guns in single close-range mountings. These will ultimately be replaced by Seacat, the Royal Navy's close range, ship-to-air guided missile system.

Great efforts have been made in the design and layout of the upper deck equipment to reduce the number of men needed to carry out various duties. The boats, gangways and helicopter are hoisted or moved by hydraulically operated winches.

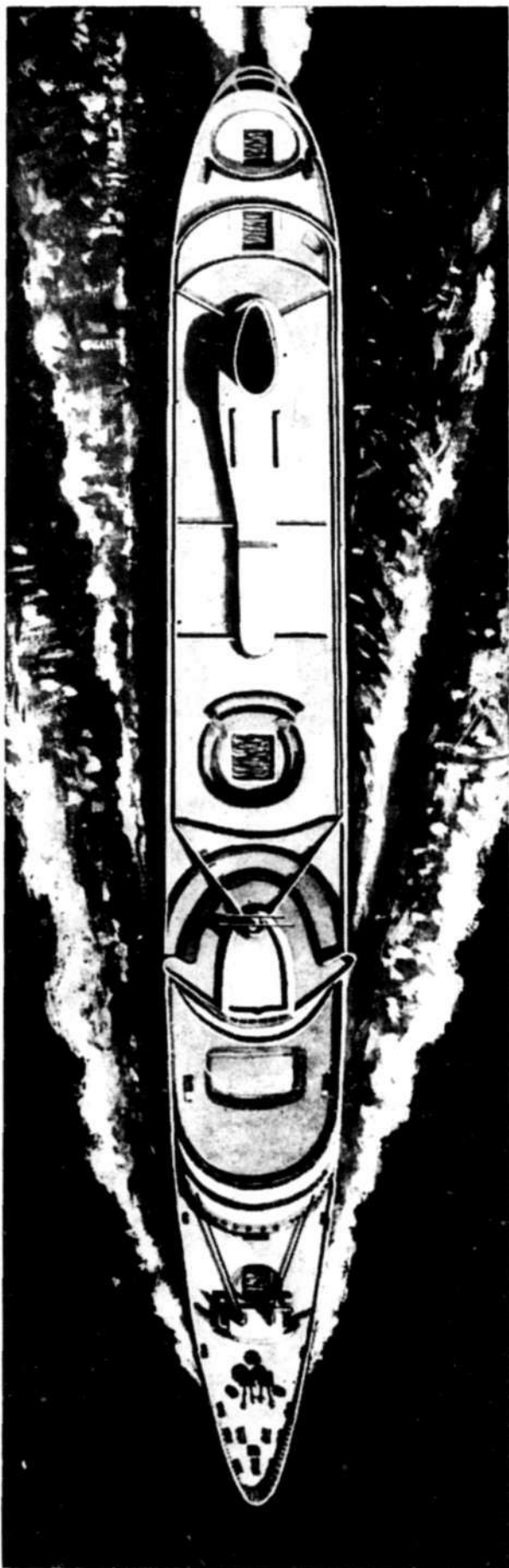
Between decks a high standard of accommodation has been achieved for the ship's company. This includes bunks for every man on-board, which can be converted to settees during the day; and full cafeteria messing with separate dining halls for senior and junior ratings. The galleys are all electric and all operational spaces and living quarters are air-conditioned.

**Historical Note:** The present Euryalus is the sixth ship to bear the name. The most renowned was the first Euryalus, commanded by Captain Blackwood at the time of Trafalgar. It was to this ship that Nelson made his now famous signal, for all ships to read, before

engaging the French Fleet — "England expects that every man will do his duty". The fourth Euryalus, an armoured cruiser, distinguished herself at Gallipoli in 1915. The 1st Battalion of the XX The Lancashire Fusiliers, who were embarked at the time, made a landing from the ship and won six V.C.'s before breakfast. In the action, the Battalion lost eleven officers and 350 men, and of the 80 naval ratings manning the ship's boats 63 were killed or wounded. Thus began an association between the ship and Regiment which has continued whenever there has been an Euryalus in commission. The ship's motto 'omnia Audax' (Daring in all things) is that of the XX The Lancashire Fusiliers and was adopted by the fifth Euryalus in 1951.

The fifth Euryalus endured two years of the bitterest fighting in the Mediterranean during the last war, which included the Malta convoys of 1941 and 1942. Later she was one of the first ships to enter Hong Kong to receive the Japanese surrender in 1945.

Euryalus, from whom the name derives, was a distinguished Greek warrior, considered to be one of the bravest men who fought at Troy. He was also a proficient athlete and a keen seaman, being one of the famous Argonauts who followed Jason in search of the Golden Fleece.



# SEAGOING LINER



or SEAWORTHY LINKS . . .

## ZINC galvanises it into longer life

Nothing lasts forever; things wear out with use; but iron and steel products "live" longer, giving more years of service if they are protected from corrosion by galvanising with zinc or the application of zinc anodes.

"Think Zinc" — and for marine products specify a galvanised coating or zinc anodes to ensure longer life, lower maintenance costs and hence unquestioned economy.

### **BUILDING AND CONSTRUCTION**

Structural steel, girders, trusses, angles.

### **MANUFACTURING**

Steel sheet, wire, pipes, castings.

### **PUBLIC WORKS AND SERVICES**

Traffic signs, guard rails, transmission towers.

### **MARINE**

Anchors, chains, cleats, rails.

### **DOMESTIC**

Roofing, water tanks, clothes hoists, window frames, wrought iron work.

"A-Z" brand electrolytic zinc (guaranteed 99.95%)

"A-Z Special" four nines zinc (guaranteed 99.99%)

Quality products of world-wide reputation produced by:—



**ELECTROLYTIC ZINC COMPANY OF  
AUSTRALASIA LIMITED**

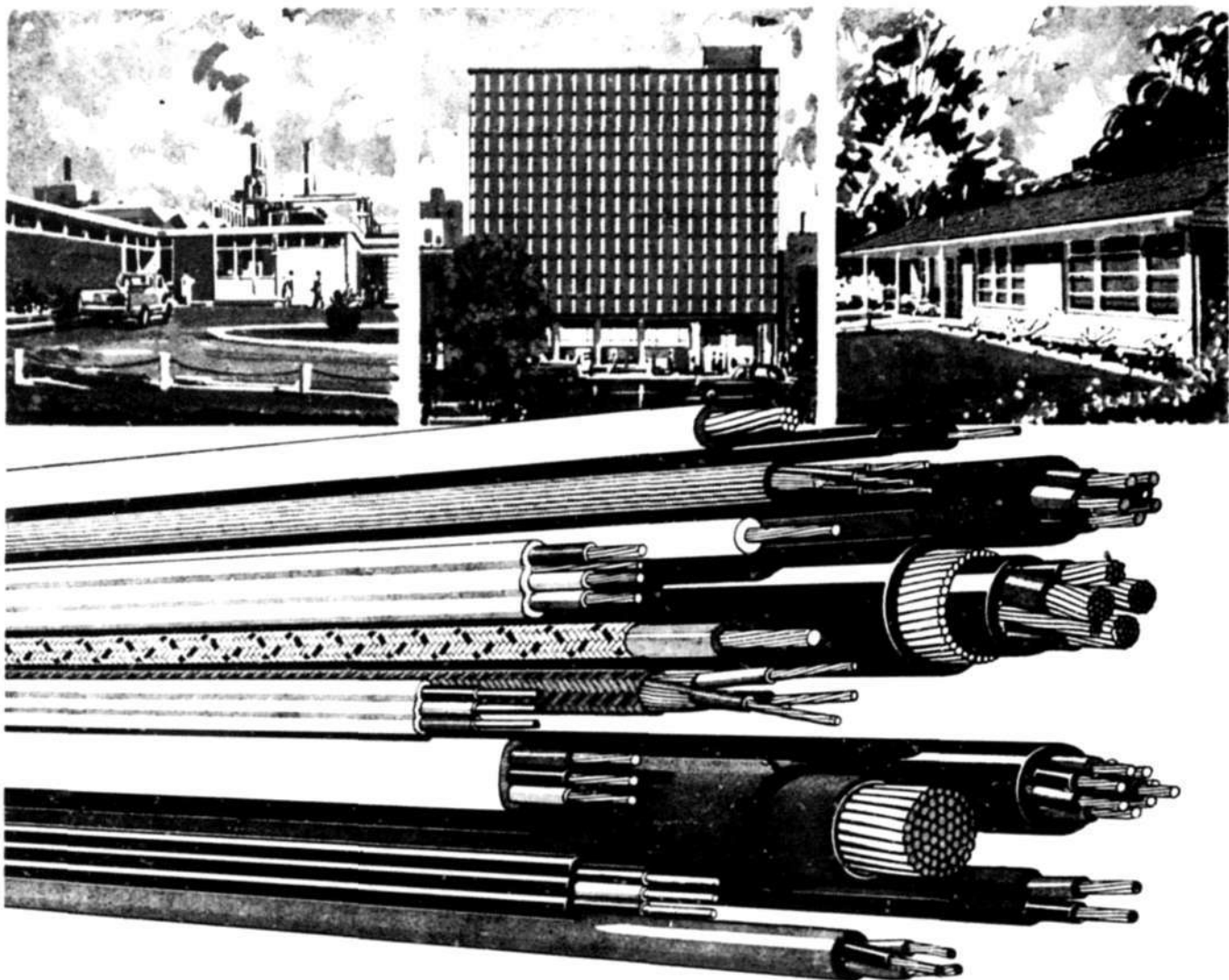
390 Lonsdale Street, Melbourne, Victoria.  
Cables & Telegrams "ELECTZINC", Melbourne.

FOR ELECTRICAL INSTALLATIONS . . . INDUSTRIAL, COMMERCIAL AND DOMESTIC!

Simply specify

**C.M.A.**

cables



In addition to experience gained in its own plant on manufacturing processes and technical matters related to power cables, Cable Makers Australia Pty. Ltd. has been able to draw a wealth of information from overseas associates with 150 years' experience.

Moreover, by maintaining a very high degree of quality control through every process, the company has been able to maintain the excellent standard which has made cables of C.M.A. brand renowned throughout the world.

### **CABLE MAKERS AUSTRALIA PTY. LTD.**

WORKS: *Liverpool, N.S.W.; Strathpine, Queensland; Elizabeth, South Australia; Perth, Western Australia*

*Write for comprehensive illustrated catalogue*

