

59

THE Navy

MITCHELL LIBRARY
24 APR 1967
SYDNEY

24-1



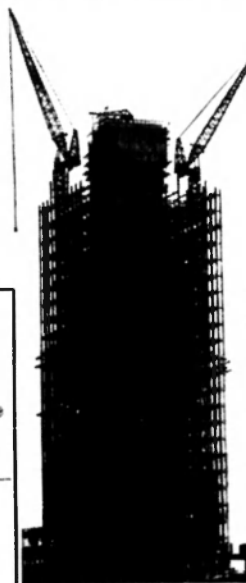
February-March-April 1967

15 cents

In the world of
lifting and hoisting
FAVCO is
almost
everywhere



Favco
totally enclosed
deck crane.



Favco tower cranes



Favco Lorry and
Small Ship's Hoist
lifts up to $\frac{1}{2}$ ton.

Look up and you'll see giant Favco Tower Cranes working on skyscrapers and helping to re-shape our cities into new and dramatic forms. Then there are the versatile Favco Deck Cranes at work on a variety of tasks that serve the shipping industry. And coming down nearer to ground level is Favco's newest venture — the electric Lorry Hoist that mounts detachably on a truck.

Favco is a name you'll see almost anywhere where there is a lifting or hoisting job to be done. And, apart from the big role that Favco is playing in

Australia's industry and trade, the company is also exporting to other countries of the world. In fact, when you consider it, that's quite a lot to do, for just one division of an all-Australian company — Favelle Industries Pty. Ltd.

**FAVELLE
INDUSTRIES PTY. LTD.**

300-310 Botany Road, Alexandria. 69 6651

FV2403.100

THE NAVY

The magazine of the Navy League of Australia

Vol. 29

FEBRUARY-MARCH-APRIL, 1967

No. 1

CONTENTS

	Page
Periscope on Australia	3
The French Navy — A Survey	9
H.M.A.S. Deloraine Sinks First Japanese Submarine	17
Book Reviews	25
Nautical Notes from All Compass Points	29
The Royal Norwegian Navy — A Survey	41
What's New?	45
New Dimensions of Sea Power	47
H.M.A.S. Canberra Commemoration Service	53
Sea Cadet Corps News	55
U.S.C.G. Icebreaker Visits Sydney	61

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, 29-6531

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

EDITOR: Dennis 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., C.H., 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: Sub-Lt. K. Taylor, R.A.N.R.

New South Wales Division

Patron: His Excellency, The Governor of New South Wales.

Chairman: Rear Admiral H. A. Showers, C.B.E.

Secretary: Lieut. Cdr. A. A. Andrews, M.B.E., R.A.N., 28 Royal Street, Chatswood, Sydney.

Victorian Division

Patron: His Excellency, the Governor of Victoria

Chairman: Randall H. Collins, Esq.

Secretary: Miss E. C. Shorrocks, 528 Collins Street, Melbourne, C.I.

Queensland Division

Patron: His Excellency, The Governor of Queensland

Chairman: Cdr. N. S. Pixley, M.B.E., V.R.D., R.A.N.R. (Retd.)

Hon. Secretary: G. B. O'Neill, Esq., Box 376E, G.P.O., Brisbane

Australian Capital Territory Division

Chairman: 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

Chairman: 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 N. A. Boase, 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

Chairman: F. M. Dunn, Esq.

Hon. Secretary: R. E. Sutton, Esq., 30 Pirie Street, Adelaide

Tasmanian Division

Patron: Vice Admiral Sir Guy Wyatt, K.B.E., C.B., R.N.

Chairman: Cdr. A. H. Green, O.B.E., D.S.C., R.A.N. (Retd.)

Hon. Secretary: Lieut. Cdr. J. C. Mahan, R.A.N.R., 11 Quorn Street, Sandy Bay, Hobart, Tasmania

Western Australian Division

Patron: His Excellency, the Governor of Western Australia

Chairman: 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

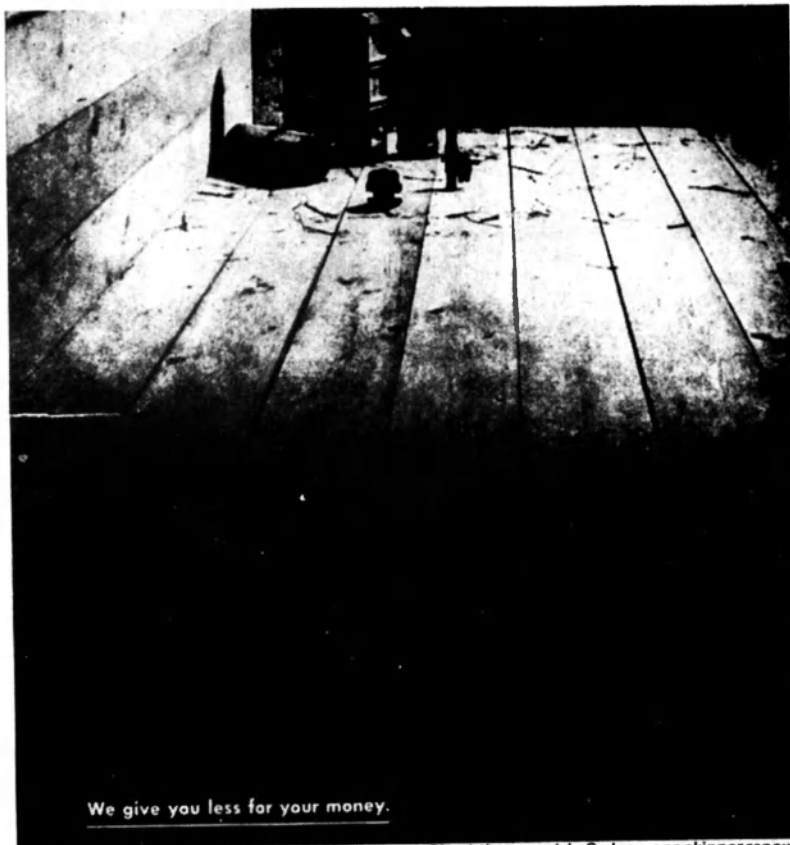
Lieut. Cdr. F. G. Evans, V.R.D., R.A.N.V.R.

Hon. Secretary: Sub-Lt. K. Taylor, R.A.N.R.

February-March-April, 1967

THE NAVY

Page 1



We give you less for your money.

What more could you ask?

You see, we're selling power, not parts. That's why we lopped all the fat off our engines. To give you less. Less engine weight, fewer parts and half as many strokes per power cycle.

The more comes later. Like when your engines kick over and you head out for open water. Less engine weight means greater fuel capacity. Fewer parts, less maintenance. No wasted piston strokes, more responsive power. And that's the Detroit Diesel story. Power. Pure and simple.



Check the record. In Sydney, one skipper repowered his cruiser with a pair of Detroit Diesels. He not only increased cruising speed, but saved almost \$5.00 an hour on fuel. He's getting less . . . less cost. And in Brisbane, a yachtsman operated his boat for three years without anyone looking at the engines. He's getting less . . . less grief. There's more and Claie Engine are ready to tell you about it. Contact Authorised GM Detroit Diesel Distributor:

CLAE ENGINE PTY. LTD.

31 Hoskins Avenue, Bookbourn, B.S.W. Phone: 78-8836.
Leverock Ave., Eagle Farm, Queensland. Phone: 88-4186.

Periscope on Australia

by Grommet

EXCHANGING APPOINTMENTS

Rear Admiral R. I. Peek, O.B.E., D.S.C., Deputy Chief of Naval Staff, and Rear Admiral V. A. T. Smith, C.B.E., D.S.C., Flag Officer Commanding the Australian Fleet, exchanged appointments last January.

MINESWEEPERS

The minesweepers IBIS and TEAL are now stationed at Darwin. H.M.A.S. BASS, the general purpose vessel is to return to Sydney for refit.

SECOND SUBMARINE LAUNCHED

Australia's second Oberon class submarine, OTWAY, was launched in Scotland on 29th November, 1966.

The ceremony was performed by Her Royal Highness, Princess Marina, who is Honorary Commandant of the Women's Royal Australian Navy Service.

OTWAY is now being fitted out, and is expected to commission later this year.

ASIAN DUTY

The destroyers VAMPIRE and DUCHESS left Australia on Thursday, 5th January, for service with the Commonwealth Strategic Reserve (based in Singapore) in South-East Asia.

They relieved the anti-submarine frigates STUART and PARRAMATTA, which returned to Sydney on Friday, 27th January (see photographs this page).

RESCUE BRINGS AWARD

The helicopter rescue of four survivors from the sunken dredge, W.D. ATLAS, off Jervis Bay on 21st November, 1966, earned a Navy award, the "Collins Trophy", for the Fleet Air Arm's No. 723 Squadron.

The award is made to the squadron which carries out its designated

task with the highest degree of efficiency.

As well as assisting in the rescue of the dredge survivors, No. 723 Squadron performed most creditably in the fields of flying safety, helicopter training and search and rescue.

RESERVISTS PROMOTED

A Sydney accountant has become the first R.A.N. Reserve Officer to be promoted to the rank of captain in the Supply Branch of the Naval Reserves.

He is Captain Robert Thom Gamble, who joined the R.A.N.R. in 1941 as a rating. He was promoted paymaster sub-lieutenant in 1943.

Captain Gamble was awarded the O.B.E. in 1964 and was appointed an A.D.C. to Her Majesty the Queen in 1965.

Three Reserve lieutenant commanders — an Adelaide medical practitioner, a Perth bank manager and a Hobart accountant — have been promoted to the rank of commander. They are Surgeon Commander Colin G. Alderman and Commanders Gordon G. Chenery and Arnold K. Wertheimer.

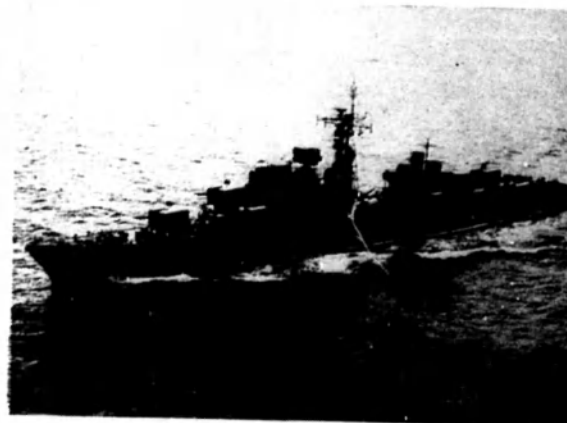
MINISTER VISITS H.M.A.S. CERBERUS

The Minister for the Navy, the Honourable Don Chipp, paid his first visit to a Naval establishment on 23rd January when he visited H.M.A.S. CERBERUS, Victoria. H.M.A.S. CERBERUS is the Navy's principal training establishment and has a service population of approximately 2,000 officers and sailors.

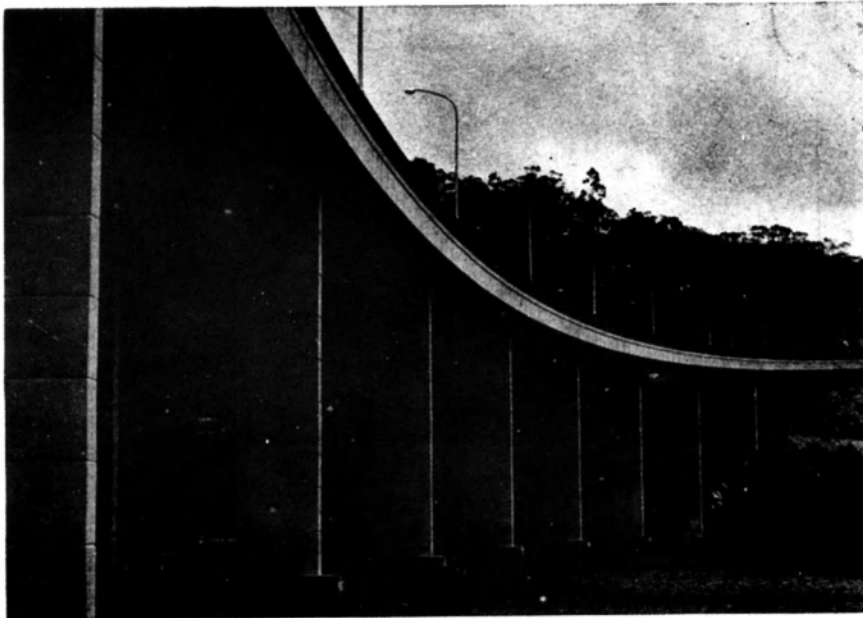
The Minister also visited the West Head gunnery range.

PAPUANS TO TRAIN AS NAVAL OFFICERS

The personnel strength of the Papua-New Guinea Division of the R.A.N. has increased in recent days with the recruiting of 54 sailors.



H.M.A.S. VAMPIRE



**What does the Roseville Bridge
have in common with
the Gladesville Bridge?
the Tarban Creek Bridge?
and the Captain Cook Bridge?**

**C.M.A. Cables were used in
the construction of all four.**

For all projects in construction, engineering and mining,
C.M.A. Cables are the first choice.



Works: Liverpool, N.S.W.; Strathpine, Queensland; Elizabeth, South Australia; Perth, West Australia.
c.o.s



H.M.A.S. STUART

Among the recruits are two Cadet Midshipmen, Francas Molean and Elias Garafoi, who attended Keravat High School.

They will join two other Cadet Midshipmen selected from an earlier intake and will undergo professional and academic courses at H.M.A.S. TARANGAU on Manus Island. They will then be sent to H.M.A.S. CERBERUS for further training in professional subjects.

worn on the left breast of the uniform coat or jacket.

The badges will be awarded:—

To officers, on completion of 6 months' service in a seagoing submarine following the completion of the submarine training course.

To sailors, after passing a submarine sea test normally held after 16 weeks' service in a seagoing submarine, following the completion of the submarine training course.

PILOT'S TRAINING COURSE IN U.S.

Two R.A.N. fighter pilots, Lieutenant Commander John Dacosta and Lieutenant Graham King, left Australia early last January to undertake "Skyhawk" conversion courses at the United States Naval Air Station at Lemoore, California. On return to Australia after five months, they will assist in the training of R.A.N. pilots selected to fly the "Skyhawk" (see photograph).

SUBMARINE SERVICE BADGE

A distinctive badge has been issued to officers and sailors trained for the R.A.N. submarine service.

The badge, a gilded metal brooch depicting two dolphins, nose to nose, supporting a crown, is

CLEARANCE DIVERS FOR VIETNAM

A team of Naval Clearance Divers (frogmen) to be sent to Vietnam will work with American and South Vietnamese units. Their tasks will include locating and rendering safe, bombs, mines, missiles and booby traps set by the Vietcong.

JOINT SERVICES STAFF COLLEGE

Two Australian Service officers and a civilian, Lieutenant Commander D. J. Orr, Lieutenant Colonel A. W. F. Rofe and Mr. W. L. Hanks, have been selected to attend the 34th course conducted by the Joint Services Staff College in the United Kingdom, commencing May this year.

The objectives of the College are to train officers for staff appointments on Joint Staffs; for higher staff appointments in their own Services; and to foster and develop mutual understanding and a common doctrine between the Services.

BATTLE OF LEYTE GULF COMMEMORATION

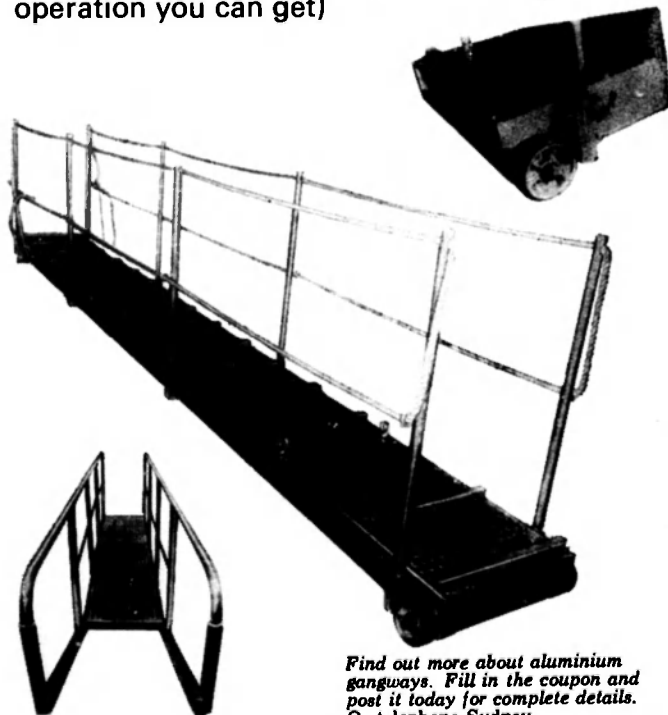
Last October, the R.A.N. and R.A.A.F. represented the Australian Armed Services at commemorations recalling the Battle of Leyte Gulf, one of the most significant battles of the Pacific theatre in World War II.



A Douglas A-4E Skyhawk Attack Bomber

Why choose aluminium gangways?

(because they are strong, light, non-corrosive, spark-proof, easy to handle, non-slip and . . . need we say it . . . just about the most efficient structures for ship-to-dock operation you can get)



Find out more about aluminium gangways. Fill in the coupon and post it today for complete details. Or telephone Sydney 40-3137 — 40-2467 — 40-4939

Please send me full details of aluminium gangways.

LYTE METAL INDUSTRIES PTY. LTD.,

A Lark Consolidated Company

21 Gibbes Street, Chatswood, N.S.W. Australia. P.O. Box 245, Chatswood

NAME _____

ADDRESS _____

The minesweepers, H.M.A. ships **SNIFE** and **CURLEW**, visited the Philippine city of Tacoban for the 22nd anniversary of the battle.

On 20th October, 1944, eight R.A.N. vessels (**AUSTRALIA**, **SHROPSHIRE**, **ARUNTA**, **GASCOYNE**, **WARRAMUNGA**, **WARRUNA**, **KANIMBLA** and **WESTRALIA**) supported the American amphibious assault in Leyte Gulf. It was the first landing in the

Philippines and marked a major turning point in the campaign against Japanese forces in possession of the Philippines.

STEWARDS FOR "EXPO 67"

A Chief Petty Officer and two W.R.A.N. Stewards have been chosen for 8 months duty at offi-

cial luncheons and dinners in the V.I.P.'s dining room of the Australian pavilion at EXPO 67, Montreal, Canada. The successful volunteers, Chief Petty Officer Allen Guthrie, Leading Wran Judith Atkinson and Wran Susan Horrobin are currently serving in H.M.A.S. **CERBERUS**, and before their departure late in March, they are being given an intensive training in specialised Wardroom duties.

VICTORIAN RADIO STATION PIONEERS NEW FREQUENCY

By 3UL Manager—Colin McL. Cameron

By virtue of its climate and geographic situation, Gippsland is one of the most important dairying provinces in Australia, the rainfall in the Central area being approximately 45 inches per year.

Due to this fact, the Gippsland-Latrobe Valley Area is the fastest growing and one of the most densely populated areas in Victoria (outside the metropolitan area).

For some considerable time 3UL had interference at night from a station in Queensland which shared the 880 kilocycle frequency. In 1965 the Australian Broadcasting Control Board granted 3UL an entirely new frequency, viz. 530 kcs., which gives tremendous effective radiated signal power, a great advantage since the signal tends to follow the contour of the land and provide good signals in valleys as well as on the higher peaks throughout Gippsland.

With the change over to 530 kcs., was the use of a directional aerial system, the radiated pattern of which was to follow a lobe to the rear (for restricted service to towns

to the north of the transmitting site), with the main pattern covering the required service areas in the Latrobe Valley, South and West Gippsland and the Westernport areas.

The original radiator used on 880 kcs. has had 150 feet of 6 top loading wires, whilst the new radiator also 280 feet high has been fitted with 6-150 feet of top loading "umbrella" wire.

With the change of frequency 3UL purchased two 2.5 K.W. S.T.C. Transmitters incorporating the new silicone avalanche rectifiers, and the necessary power dividing network, aerial coupling units and phase angle measuring equipment.

Six months ago 3UL established an ultra modern satellite studio in the heart of the Latrobe Valley, bringing modern radio closer to the 63,000 people within 10 miles of Morwell. The studio in Radio Arcade features a glass frontage which enables the public to actually view the studio in operation from the front of the building. It is estimated that over 8,000 people use



3UL transmitter. Buler Buler, Victoria

Radio Arcade every day as it bridges the two business sections of Morwell.

OUR COVER

THE FRENCH CRUISER HELICOPTER CARRIER JEANNE D'ARC

This Training/Commando Type vessel is used for training officer cadets in peace time. In wartime, after rapid modification, she would be used as a commando ship, helicopter carrier or troop transport with commando equipment and a battalion of 700 m n. The ship is almost entirely air-conditioned.

Jeanne D'Arc carries 4-8 heavy anti-submarine helicopters and is also fitted with a twin launcher for "Mauve" surface-to-air missiles.

MEET JOHN HELMORE
manager of Twofold Bay
Marine Service and
CLAE'S EDEN GM
**DETROIT
DIESEL**
DEALER



some fishing vessels powered by **G.M. DETROIT DIESEL** in Eden



ACHERNER • 671E



KENDON D • 671N



ROSALIND STAR • V12-71N



VIKING QUEEN • 3-71



TAMMY R • 4-71N



RICHARD ALLEN • 4-71

ARCADIA STAR • 671E
ROSEBUD • 671E
SAN PEDRO BAY 16V-713

METAL MONSTER • 4-71
DEGIE • 28V71N

HUNTER • 6-110
IMLAY • 12V71N

TWOFOLD BAY 12V71



FEAR NOT • 671N



LIAWENEE 2-6-71



MIRRIMBEENA • 6V71

John Helmore has been associated with the fishing industry since 1930, and looks after at least 40 fishing vessels in Eden. Commenting on the performance of G.M.'s, Jack said: The big feature of their compactness is the engine room can be shortened up to 4 feet. What was once a crowded engine room now becomes a ballroom. This often allows extra space for rope wells, and with only one basic family design for all engines, 20 - 1400 h.p., the customer saves on parts.

G.M.'s range of engines are tailored to boats' requirements, and give a combination of performance, economy and durability no other engine can equal.

Contact authorised distributor:—

CLAE ENGINES PTY. LTD.

31 Hoskins Avenue, Bankstown, N.S.W. :: Phone 70-0295

Lavarack Avenue, Eagle Farm, Qld. :: Phone 68-4155

THE FRENCH NAVY

A Survey

HISTORY

France began to be interested in naval affairs when the boundaries of her Kingdom reached the European coast at the beginning of the 13th century. The first kings had to charter fleets from Venice, Genoa or Monaco in order to pursue their crusades and expeditions against surrounding countries. Jacques Cartier, the famous French navigator, took possession of Canada for King Francois the First in 1535.

It was not until the end of the 17th century that the French navy became an organised Force. This was achieved under the direction of Colbert, who was a great minister under Louis XIV. Duquesne, Forbin and Tourville achieved great

the most successful. The resurgence of the Navy was evident in 1827 at Navarino where, for the first time in one and a half centuries, the Navies of France and England fought side by side. The conquest of Algeria and the expedition against Mexico during the period 1830 to 1838 proved the new strength of the French Navy. During this same period Dumont D'Urville made notable voyages into the Pacific and to the Antarctic.

The French Navy then underwent a technical revolution with the revolution of steam propulsion and the

invention of the modern propeller (Sautage). The result was France's first armoured ship "LA GLOIRE".

When Napoleon III came to power in 1851 the French Navy was a modern force and readily available for the pursuit of his territorial ambitions. The expeditions to the Crimea, Indo-China and Mexico under La Grandiere, Charner and Doudard de Lagree illustrated the effectiveness of the French Navy at this time.

During the Franco-Prussian war of 1870 the French Navy was devoid of opposition. Many of its

by
Lieutenant-Colonel de Bousiers,
Military, Naval and Air Attache,
Embassy of France, Canberra.
A.C.T.

success at the battles of Beveziers, Barfleur and Lagos respectively. Because of excessive costs, however, the French Navy began to decline during the Regency and the reign of Louis XV. Nevertheless Jean Bart, Duguay-Trouin and Ducasse had some success with their speedy, light ships. The result of this period of great economy was the loss of the French territories in Canada, India and Louisiana during the middle of the 18th century. Immediately afterwards there followed a period of resurrection which led to success during the American War of Independence. Orvillies, Lamotte-Picquet and De Grasse at Chesapeake contributed to the victory of the young Republic.

The French Revolution in 1789 disorganised the Navy and this contributed to its defeats at the hands of Nelson during the Napoleonic Wars. During this period the French corsairs reappeared, Surcouf being



GUIDED MISSILE FRIGATE "SUFFREN"

She is fitted with a twin launcher for "Maurice" surface-to-air guided missiles. Her anti-submarine weapons comprise the "Maelstrom" guided missile (similar to Australia's "Ikara" missile) and homing torpedoes launched directly from the ship. The large ball forward of the mainmast is the three-dimensional radar.

Compliments to All Members from the ...

CRITERION HOTEL GEELONG

(CLEM BOND, Mine Host)



- * COOL CREAMY ALE ALWAYS ON TAP
- * ACCOMMODATION AVAILABLE
- * PARTIES CATERED FOR

FRIENDLY WELCOME AND SERVICE AT ALL TIMES

RYRIE STREET — GEELONG, VIC.

Phone Geelong 9-1104 For Reservations

personnel were formed into naval brigades and saw service on land inside the Paris fortifications. In 1881 the Colonial expedition resumes in Tunisia, in Tonkin under Francis Garnier and in Annam under Courbet. This activity was later to extend to the Congo, Madagascar and Morocco. The contributions by the Navy during this period of colonisation were very significant and success would not have been possible without its aid. Progress in technical achievement became quite marked during the same years. In 1887 the first French submarine "GYMNOTE" was launched and in 1913 the Fleet Air Arm was created, by the end of World War I the Fleet Air Arm consisted of 2000 aircraft.

During the First World War the French Navy was divided into two Fleets; one to control Dover Strait against the German fleet and the other was used in the Adriatic Sea against the Austrian fleet. The French Navy also saw service in the Dardanelles, during the defence of Suez and on convoy escort duties.

Because of the large naval programme between the two World Wars the French Navy was in good shape in 1939 to undertake modern warfare at sea. It participated in the escort of Atlantic convoys, on sea operations in Norwegian waters and at the evacuation of Dunkirk. After 1940 the French Navy continued the liaison between France and her Colonies. In 1942 practically the whole of the French Fleet was scuttled at Toulon to avoid falling into enemy hands. Thus in one blow the French Navy had reached another low point in its history. In a few years time, however, it had regained its strength.

ANTI-SUBMARINE (T 56) TYPE DESTROYER LA GALISSONNIERE



Fitted with extensive sonar and anti-submarine apparatus, including variable-depth sonar and homing torpedoes, this vessel also has well-developed anti-aircraft and radar equipment. A platform for landing anti-submarine helicopters and a hangar have been fitted aft.

NAVAL POLICY

French overall defence policy is based on the three aims of deterrence, intervention and defence; the naval policy fits in accordingly. By 1972 the weight of the French deterrent forces will have moved from Mach 2 atomic bombers and surface-to-surface ballistic missiles to nuclear submarines armed with nuclear ballistic missiles. This choice has been dictated by geographical considerations and the omnipotence of this discreet weapon system. Nevertheless the Navy should be able to continue to play its classical role which ranges from peace-time flag-showing missions to conventional operations at sea. The flexibility of a navy is also of great value in exerting the exact amount of "diplomatic" pressure wished by a government. In the defensive role the Navy could provide for coastal defence (France

has nearly 1850 miles of coastline). defence of the French merchant fleet (France possesses 300 ships worth \$A8 billion constantly at sea) and the protection of overseas trade (which amounts to some 100 million tons of imports per annum, of which some 60 per cent consists of fuel oil and other petroleum products).

The naval defence task has many aspects including small counteractions, minesweeping, air defence, convoy escort and port defence.

THE MEANS

The means are well-matched to achieve these roles. Twenty years after the end of World War II the French Navy has attained a personnel strength of 72,000 officers and men plus 40,000 civilians and a warship tonnage of 350,000. This happy state of affairs is due to an annual budget of \$A640 million (i.e. 16 per cent of the annual defence vote). Almost half of this

From the MANAGEMENT and STAFF of

ELDRIDGE ELECTRIC PTY. LTD.

• ELECTRICAL CONTRACTORS

147 ELIZABETH ST., HOBART, TAS.

TELEPHONE 3-3301

Contractors to
THE ROYAL AUSTRALIAN NAVY





FIRST IN EVERY FIELD



VICTOR SCHOELCHER

One of the nine dual-purpose frigates of the "Commandant Reviere" class. Vessels of this class have all been completed during the last five years. Displacing 2,200 tons full load, they are 334 feet in overall length, are fitted with three 3.9 inch single automatic anti-aircraft guns and two 30 mm. anti-aircraft guns. Provision has been made to land a helicopter aft. Vessels of this class are equipped with six 21-inch ASM torpedo tubes. Anti-submarine weapons comprise one 12-inch quadruple ASM and anti-shore mortar. A commando unit of 80 can be accommodated.

amount is spent on capital expenditure. The current five year Armament Plan (1965-1970) has more than \$A1 billion allocated to it for the new construction programme alone.

THE FLEET

The attached appendix shows the current French naval strength and construction programme. The main characteristic is the versatility of almost all ships for different types of missions. It can be noticed that the complexity and cost of each new ship, which become greater and greater for the same mission, follow the pattern of all other Navies indulging in the construction of warships for modern warfare. It takes about nine to ten years to design, build and test a new type of warship. One should not overlook the logistics fleet which has become relatively important because of the reduction in French overseas bases and the necessity for replenishment at sea of nuclear forces. As in the time of sail, the main limiting factor in nuclear operations at sea will be the temper of the crew.

NAVAL BASES

However land bases are necessary for the maintenance of ships of the French Fleet.

Four main naval bases are located on the French mainland and these consist of:

(a) Cherbourg — Submarine and minesweeper construction and repair facilities.

(b) Brest — Large dockyard and repair facilities. Brest is the operational base for ships of the Atlantic Fleet.

(c) Toulon — Operational base for ships of the French Mediterranean Fleet.

(d) Lorient — Submarine base.

Secondary naval bases are located at Dakar, Fort de France, Diego Suarez, Papeete, Mers El-Kebir, Noumea and Djibouti; the latter two have no facilities.

The main Fleet Air Arm bases are located at:

(a) Hyeres Le Palyvestre — Mediterranean Squadrons.

(b) Nîmes — Maritime aircraft and schools.

(c) Lann Bihoué — Maritime aircraft.

(d) Landivisiau — Atlantic squadrons.

France is divided into three naval command areas as follows:

(a) First Naval Command Area at Cherbourg.

(b) Second Naval Command Area at Brest.

(c) Third Naval Command Area at Toulon.

Each is under the command of an Admiral (Prefet Maritime). Other naval command exist overseas.

ORGANISATION OF THE FORCES

Besides the small forces allocated to each territorial command the French Fleet is organised as follows:

(a) Mediterranean Escadre

One aircraft carrier

Two destroyer squadrons (eight in each)

Marine commandos

(b) Atlantic Escadre

Two aircraft carriers

Twenty destroyers and destroyer escorts

(c) Submarine Force

One submarine squadron in the Atlantic

One submarine squadron in the Mediterranean

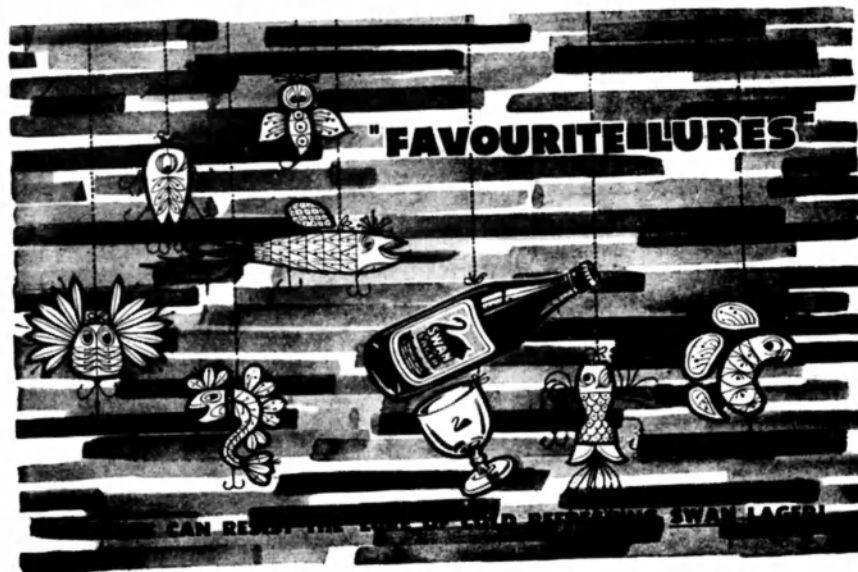
(d) Amphibious Intervention Force at Lorient

(e) Pacific Force

Some sloops and patrol boats

Any operational force may be composed of ships from all five commands. For example the command cruiser "COLBERT" one aircraft carrier, nine destroyers, six submarines and one logistics ship operated in the Eastern Mediterranean from 15th November to 20th December, 1966. This illustrates the ever close French interest in the Mediterranean Sea.

In summary the French Navy at the present time comprises a balanced force which is entirely suited to the defence of the French coast and, indeed, of France's world-wide interests. The original design of many of its ships and equipment and the flexible organisation of its naval forces enable the French Navy to undertake the defensive role with great effectiveness.



CLARK BROS. A.F.D.A.

(WILLIAM J. CLARK)

☆ FUNERAL DIRECTORS
Day and Night Service

No connection with any other firm

15-17 ARGYLE STREET, HOBART, Tasmania

Phone 2-6177

APPENDIX

Current Strength and New Construction

The actual strength of the French Navy exceeds 350,000 tons. Planned new construction involves another 60,000 tons.

Type	No.	IN SERVICE		NEW CONSTRUCTION	
		Built	Displacement in tons	Year of Commission	
Aircraft Carrier	1	1946	20000		
	2	1961-1963	32000 each		
Helicopter Carrier	1	1964	12300		
Cruisers	2	1959	12000 each		
Guided Missile Destroyers	4	1956-1962	3700 each		2 x 7000 tons 1967-1969
Destroyers	14	1955-1957	3000 each		5 Corvettes 1970-1974
Sloops/DE	8	1962-1966	2200 each		1 x 2200 tons
Frigates	18	1955-1960	1700 each		
Submarines Nuclear/Missile	1		3000		3 x 9000 tons 1970-1974
Conventional	6	1957-1960	1800 each		
	9	1959-1964	1200 each		2 x 1000 tons 1969
Patrol Craft	4	1958-1960	650 each		
	14	1954-1959	400 each		1 x 400 tons 1972
Minesweepers	99	1952-1956	22000 total		8 x 700 tons 1969
Landing Ships	23		25000 total		2 x 6000 tons
Logistic Ships	8	1956-1965			31,000 tons total
Hydrographic Ships	4	1956-1965	83000 total		

APPENDIX

Fleet Air Arm

Squadrons	Type	Manufacturer	
2	Crusader (FRE)	USA	SW and Matra 530
3	Etendard F. Bomber	Dassault	SW and Nord AS 30
1	Etendard Recc.	Dassault	SW and Nord AS 30
3	Alize ASM	Breguet	Replaced by Super Frelon SA 3210 from 1967
2	HSS 1 ASM	USA	
1	HSS 1 Assault	USA	
5	Neptune P2V7 maritime	USA	Replaced by Breguet Atlantic from 1966
12 (Flights)	Fouga and Alouette	Potez—Sud Aviation	Training and Transport

Missiles

Function	Type	Manufacturer
Surface/Air	Masurka Tartar	Ruelle-Malmaison United States
Surface/ASM	Malafon	Latecoere
Air/Ground	SS11/SS12 AS30	Nord Aviation
Air/Air	Matra 530 SW	Matra USA



Quetsaler
Wines

From the Vineyards of and bottled by

H. BURING & SOBELS LTD.
WATERVALE - 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.

"JEANCO"

Jeanes Timber Co. Pty. Ltd.

(Formerly Northern Trading Co. Ltd.)

TIMBER - JOINERY
BUILDING MATERIALS

**252 MAIN NORTH ROAD
PROSPECT, S.A.**

TELEPHONE 65-7705

After Hours:

Peter Sims, Sales: 78-2509

Alan Lisk - 49-6081

D. W. Larcombe, Building Materials: 65-9476

also

Main South Rd., Morphett Vale North
Phones: Morphett Vale 54-7182, 54-7162

KENNETT'S

Kennett Bros. Pty. Ltd.

Kennett Constructions Pty. Ltd.

Kennett Hardware Pty. Ltd.

**47 TYNTE STREET
NORTH ADELAIDE**

BUILDERS AND CONTRACTORS

PHONE 6-8822

H.M.A.S. DELORAINE SINKS FIRST JAPANESE SUBMARINE

By JACK MILLAR

Twenty-five years ago the Japanese were sweeping all before them in their swift drives southwards, and playing a leading part was the Nip Navy with its vastly superior forces. Against such numerical strength at that time the Allied Navies could do no more than harass them with hit and run raids. One of the most active arms of the Jap. Navy early in the war was its submarine force, flung out across the vast Pacific, ready to pounce on any unsuspecting merchantman or warship.

Included in their underwater fleet were four mine-laying submarines, I's 121 to 124, and these craft were among the hardest worked of all. Built about 1925-7, these 1140-ton submarines were considered an obsolete type of vessel by the time war commenced. Nevertheless, they carried and laid many lethal mines which sank or caused considerable damage to many of our ships. Armed with one 15-cm. gun, they had a top surface speed of 14½ knots and a range of 10,500 miles at an economical speed of 8 knots. Their operational time range was about 20 days. With a safety diving depth of only 195 feet, they were considerably hampered in this respect as compared with later subs, which could go down to 325 feet with safety. In an emergency many went below this depth without damage.

Carrying 12 torpedoes, I's 121 to 124 were also equipped for laying 42 mines, which was an extremely hazardous task. To the Japanese they were regarded as cranky craft to handle and manoeuvre owing to their small hydroplanes and rudders, and throughout the service were known as the "Dreaded Submarines".

If the least bit lightened they tended to surface, and if over-heavy would sink deeper. The 40-odd mines had to be moved one by one to the tail of the subs, while at the same time water was pumped to the fore end to prevent tail-heaviness - a really dangerous task.

When a mine was dropped the same weight of water had to be let in, otherwise the stern would

break surface. If too much water, the boat would sink. Usually the mines were laid with a two-knot tide running at the entrance to bays, making it extremely difficult to keep the subs level at the prescribed depth, and at the same time lay the mines in the correct positions. This called for the utmost skill on the part of the captain, navigator and trained operators to avoid any dangerous errors.

Is it any wonder then that they were feared by their crews?

During 1940 they were equipped with petrol tanks on the upper deck for refuelling aircraft, adding another role to their already arduous duties.

On December 1st, 1941, the four subs were at Hainan Island when orders were received to take up their assigned war positions. At the time of the treacherous attack on Pearl Harbour, I's 121 and 122 were laying mines in the Singapore shipping channel, and I's 123 and 124 were doing likewise in Philippine waters. I 124 laid her full complement off Manila Harbour, and December 8th found her busy rescuing crashed aircraft crews from the air assault on Manila. In addition, she was sending out invaluable weather reports from the area.

As the Jap. drive southwards gathered momentum, so too did the mine-laying subs. keep ahead of the surface forces, sowing their lethal "eggs" of destruction at the entrances to allied harbours.

During the early hours of the morning of 20th January, 1942, I 124 was on a mission to mine the approaches to Darwin Harbour, and was only about 60 miles west

of the port. In close proximity were the United States destroyers Edsall and Alden, escorting the tanker Trinity to Darwin with urgently needed oil supplies. Suddenly, at 6.30 a.m., an excited look-out on Edsall reported a submarine dead ahead. Before the action alarm bells had ceased Edsall was racing in to attack, leaving Alden to protect the tanker. The sub., none other than I 124, immediately dived to escape the destroyer bearing down on her. Edsall dropped all her depth charges without any conclusive results, and immediately wirelessly reported the sub's presence.

In Darwin were the corvettes H.M.A.S.'s Katoomba and Lithgow, which had only arrived the previous day, escorting a convoy from Thursday Island. Another corvette, H.M.A.S. Deloraine, based on Darwin since 7th January as a unit of the 24th Minesweeping Flotilla, was already at sea sweeping the searched channel.

On receipt of the enemy submarine report from U.S.S. Edsall, the Naval Officer in Charge at Darwin, Captain Thomas, immediately ordered Deloraine, Katoomba and Lithgow to the attack. Deloraine was first on the scene at 1.35 p.m., where I 124 showed she was very much alive by firing a torpedo at her. Its track was reported by Deloraine's look-outs and, on the bridge, Lieut.-Commander Menlove gave orders for a drastic evasive alteration of course, allowing the torpedo to pass harmlessly by.

The pinging echo of Deloraine's asdic then made contact, and it was loud and clear, audible to all on the bridge.

In she raced, covering the last few remaining yards at full speed, the crew tense at their action stations, bracing themselves for the explosion they knew was coming.

Best wishes for the continued success of "Navy" from . . .

DILLINGHAM SHIPYARDS (W.A.) PTY. LTD.

1-9 CORKHILL STREET, NORTH FREMANTLE
W.A.

SHIPBUILDERS - REPAIRS, Etc.

For Service and Information
Phone: 5-2855 — 5-2939



MARINE PLY

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

FULL STOCKS AVAILABLE AT
CULLITY TIMBERS

52 Tower Street, Leederville, W.A. — Phone: 28-1031

Suddenly, when dead on target, the firing bell was pressed and a moment later the depth charges were down. Behind Deloraine the whole surface of the sea jumped and quivered as the pattern exploded. A huge column of water shot high into the air, and it seemed to those on board that no sub could possibly live through such a barrage, but when it subsided the surface remained empty.

Wheeling into the fray once more, Deloraine carried out a series of such attacks until at last success came her way. Oil and air bubbles were observed on the surface.

Was she damaged, or had the wily Jap. commander merely shot oil to the surface to give the impression of a kill? Despite the crankiness and difficult maneuverability of I 124, there was to be no surrender. In true Japanese style it was determined, if need be, to die fighting for the Emperor. By 3 p.m. Deloraine had expended her outfit of twenty depth charges, and she remained on the scene until Lithgow arrived at 4.20 p.m. and Katoomba at 6 p.m. These two ships then carried out a series

of attacks, and Captain Cousin, in Katoomba, who had taken over as Senior Officer, sent Deloraine racing in towards Darwin to get more depth charges from the anti-submarine patrol vessel H.M.A.S. Vigilant. Patience is a good attribute when hunting submarines. A quick kill is not always possible, and in the Atlantic it was sometimes necessary to stalk a Nazi U-boat for days before the final blow. Nor were they always successful, as the cunning sub. commanders, using all manner of ruses, occasionally managed to outwit their hunters and creep away to safety in the depths below.

As soon as Deloraine rejoined the other two ships with another 15 depth charges at 3.15 a.m. on 21st January, her asdic got a firm contact, and she at once attacked. At 3.36 a.m., under the directions of Katoomba, Deloraine carried out a series of concentrated attacks until all her depth charges were used.

If I 124 had not already been dealt her death blow, Deloraine's attacks certainly wrote finis to her career.

Following them, large quantities

of fuel oil rose to the surface from the doomed submarine — so much, that she could not possibly have survived such a withering bombardment of depth charges.

At the time, it was thought in Darwin that three submarines had been destroyed — two by Deloraine and one by Katoomba, but only one, the I 124, was ever located.

I 124 lies there to this day, the skeletons of her crew no doubt still entombed within her hull.

In the overall assessment credit was given for her destruction to the three Australian corvettes — Deloraine, Katoomba and Lithgow — and the U.S.S. Edsall.

Very little publicity has been given to this incident in the war against the Japanese, and it is fitting, twenty-five years later, to recall the gallant deeds of an Australian warship named after the picturesque and thriving northern Tasmanian township of Deloraine.

Although essentially a team effort, there is little doubt that H.M.A.S. Deloraine played a major part in sinking I 124, first unit of the Japanese Navy to fall victim to the Royal Australian Navy.

Best Wishes from the . . .

CENTENARY Motel type HOTEL

35 FRENCH STREET, PIMLICO, QLD.

C.T.A. HOUSE

Superior Accommodation and Cuisine at Reasonable Tariff
All Rooms Self-contained — Hot and Cold Water, Shower Cubicle, Toilet
Wall to Wall Carpets. Attractively and Comfortably Appointed

PHONE 92575

Owners: SHROCK ENTERPRISES PTY. LTD.

Manager RON BRETT

Best Wishes from . . .

North Queensland Stevedoring Pty. Ltd.

JETTY WHARF, TOWNSVILLE, QLD.

Phone 4084

Phone 4084

DALGETY TRADING CO. PTY. LIMITED

TOWNSVILLE, QUEENSLAND

Suppliers of

BUILDING MATERIALS, HARDWARE, PAINTING MATERIALS
ELECTRICAL APPLIANCES, TOBACCO,
CIGARETTES, WINES & SPIRITS

PHONE 3145 - P.O. BOX 942

Spain to get Helicopter Carrier from the U.S.

It will be recalled that last year the Spanish Navy had every hope of acquiring from the United States a surplus carrier for use as an amphibious assault ship or helicopter transport. The ship selected was the U.S.S. "Thetis Bay", latterly classified as an amphibious assault ship with the designation LPH6, but formerly known as the first Assault Helicopter Aircraft Carrier (CVHA 1) and before that as the Escort Aircraft Carrier (CVE 90). On the face of it this was a sound choice, for if Spain required anything like an aircraft carrier at all (and there were those who could not see her necessity as regards this category) "Thetis Bay" was ideal in that, although she had been designed from the start as an aircraft carrier, she had subsequently been specially converted to an assault helicopter transport and therefore was good for almost anything that the Spanish Navy had in mind, being not too large and fairly economical to run both as regards maintenance and complement.

The House Armed Services Committee of Congress considered the transfer and in August 1965 the United States officially approved the loan of "Thetis Bay" to Spain for a period of five years. Students of naval affairs looked forward with interest to see what Spain would do with such a ship, for she was the sole survivor of that numerically large class of war emergency ships of the "Anzio" class all specially designed as escort carriers and colloquially known as "Woolworths Flat-Tops" or "Jeeps", of which some 50 were built.

Like her sisters, "Thetis Bay" was built in an incredibly short time. Laid down on December 22, 1943, she was launched on March 16, 1944, and completed by Henry J. Kaiser of Vancouver, Wash., on April 21, 1944; not bad going for an aircraft carrier with a full-load displacement of nearly 11,000 tons and an overall length of 512 ft., designed to carry 30 aircraft. On June 20, 1955, she began a 13-month conversion at San Francisco Naval Shipyard and emerged as an

amphibious assault ship with her lift aft open to the quarter deck. But with the completion of new amphibious assault ships specially designed as such from the start, the "Thetis Bay" became surplus to naval requirements and she was stricken from the Navy List on 1st March, 1964. That she was capable of further service was proved by the fact that it was planned to transfer her to Spain 18 months later. Her brief details and history are given here because it is still a matter of speculation what Spain wanted to do with the United States Navy's first experiment to produce an assault helicopter transport. The "Thetis Bay" was designed for a Marine Corps battalion of 1,000 men and had accommodation for 1,600 troops (her official complement was 40 officers and 500 men of the ship's company plus 390 troops). She could carry 15 to 20 helicopters, was armed with 16 40 mm. anti-aircraft guns, and had reciprocating engines of 11,200 indicated horsepower giving a speed of 19½ knots.

Now, more than a year after the loan of "Thetis Bay" was approved, it has been announced that the transfer is not to be. However, the original intention, if not the original ship, remains. Another former aircraft carrier, the U.S.S. "Cabot", has been chosen in her stead, and again the question is being asked why Spain needs a ship of this category, since "Cabot" is even bigger than "Thetis Bay" and more than a year older.

"Cabot" (ex-Wilmington) was laid down as a large light-cruiser of the "Cleveland" class, but was completed as an aircraft carrier. With a full-load displacement of 15,870 tons she has an overall length of 623 ft., a hull beam of 71½ ft. and an extreme width of 109 ft. Four Babcock & Wilcox boilers and General Electric geared turbines aggregating 100,000 shaft horsepower and turning four screws, give her a speed of 32 knots. She originally carried over 40 aircraft. Built by the New York Shipbuilding Corporation she was laid down on August 16, 1942, launched on April 4, 1943 and com-

pleted on July 24, 1943; also not bad going for an aircraft carrier of her size and complexity, even under the impetus of war urgency.

After the Second World War "Cabot" was converted to A.S.W., i.e. modified to specialise in anti-submarine warfare, and classed as a "Hunter-Killer Carrier" with strengthened flight and hangar decks, large port-side catapult, revised magazine arrangements, new electronic gear, corrected stability to counter added top weight, and a maximum of 26 aircraft. She was practically modernised to a new type. Since conversion she has had only two or her original four funnels. She was originally designed to include four 5-inch guns in her armament but eventually carried sixteen 40 mm. anti-aircraft guns and forty 20 mm. AA. guns, reduced still further subsequently. Her original scheme of complement was also reduced considerably on conversion from the designed 1,109 to 1,183 in peacetime and 1,400 for wartime. (Photograph next page.)

On May 15, 1959, "Cabot" was reclassified from an aircraft carrier (CVL 28) to an auxiliary aircraft transport (AVT 3) and for some years recently she has been decommissioned. But now approval for her transfer to Spain has been given by Congress and she is being re-activated and modernised at Philadelphia Naval Shipyard for employment as a helicopter carrier. Her completion as such is scheduled for not later than May 1967.

Which still leaves several questions. Why was the transfer of "Thetis Bay" rescinded? Why was an even bigger ship acquired? How will she be employed? Where will she operate? Perhaps the answers all lie in prestige. Spain has never had an aircraft carrier of the type as we know it today, and "Cabot" will be the biggest and most sophisticated ship in the Fleet. Now that the three cruisers of the "Galicia" class have been discarded, only the heavy cruiser "Canarias" remains (she is scheduled to be modernised) and otherwise the rest of the fleet comprises vessels of destroyer size and below.

Best wishes from . . .

Theiss (Sales) Pty. Ltd.

Sole Australian Distributors of

TOYOTA

Landcruisers, Trucks and Buses

INGHAM ROAD, TOWNSVILLE, Qld.

Phone 93270 or 93388

QUEEN'S BEACH MOTOR HOTEL

THE COOLEST SPOT ON THE COAST
BOWEN, NORTH QUEENSLAND

All Motel Units equipped with Own Shower and Toilet — Carpeted Floors, Refrigerator, and Telephone in every room. Modern Hotel facilities include Tropical Bar and Lounge, Drive-In Bottle Department, Dining Room Serving All Meals

WE SPECIALISE IN SEA FOODS — CABARET EVERY SATURDAY

PHONE: QUEEN'S BEACH 35-1180



U.S.S. 'Cabel', now to be transferred to Spain.

NEW ENSIGN FOR R.A.N.

From 1st March, 1967, the new Ensign for the Royal Australian Navy was flown in all H.M.A. Ships and Establishments.

The new ensign conforms to two important principles — it is a recognisably Australian flag which fits neatly into the general group of Australian flags, such as the National Flag and the Australian Red Ensign.

It is an ensign which embodies the main features of the traditional British White Ensign — the Union Flag in the upper corner and the white background.

In place of the Red St. George's Cross, which was added to distinguish the Royal Navy's Ensign as an English Flag, the Australian Ensign carries the Australian stars to distinguish it as an Australian Flag.

HISTORICAL BACKGROUND ON THE WHITE ENSIGN

In 1625 it was considered necessary to distinguish for tactical reasons, the centre, van and rear squadrons of English battle fleets. Accordingly, the ships serving in each squadron flew an ensign either red, white or blue. The ensigns were all similar in basic design, having a plain field with a small red St. George's Cross in the top corner. In 1702 it was found that the white ensign of the three was apt to be confused with the French National Colours, which at that time also had a white field, and with the Flag of Dunkirk, which in fact was identical with the White Ensign. Accordingly, a large red St. George's Cross was added to the White Ensign to remove the source of confusion. As the other countries of the British Isles came

into union with England, so their crosses were added to the small St. George's Cross until the Union Flag in its present form evolved. These modifications were incorporated in the Navy's ensigns and so these flags now bear the Union Flag in the upper corner.

As with squadrons, so with Admirals, who were appointed Rear Admiral, Vice Admiral or Admiral of the Red, or of the White, or of the Blue. The individual ships of the Admiral's Squadron or division wore a coloured ensign of the same colour as the Admiral. Ships on independent service wore the red, which was the senior ensign.

In the course of time the need to distinguish the different squadrons for tactical reasons disappeared and the complication of the various units in one fleet wearing different ensigns itself became a hindrance. Moreover the French Revolution brought a change in that country's flag — the tricolour — and this was now sometimes confused in the smoke of battle with both the red and blue ensigns. It therefore became the practice for the Commander to order only one ensign to be worn, and the white was normally selected. Thus, at the Battle of the Nile in 1798 the British ships wore White Ensigns, although Sir Horatio Nelson was in fact Rear Admiral of the Blue. At the Battle of Trafalgar Lord Nelson was Vice Admiral of the White and all ships wore the White Ensign even though those in Lord Collingwood's Squadron would normally have worn the Blue Ensign.

In 1864, just over a century ago, it was decided that three ensigns were unnecessary and the white was selected for the exclusive use of the Royal Navy. The Blue Ensign was allocated for use by Merchant ships commanded by officers of the Naval Reserve, and the Red Ensign for use by other British Merchant ships.

When the Royal Australian Navy was founded in 1909 the question of the selection of the ensign to be flown by Australian ships was raised during the Imperial Defence Conferences. The Admiralty view was that Dominion warships should fly the White Ensign, because this "would foster and maintain a feeling of union between the Dominion naval forces and the Royal Navy, and would show that it is desired to offer the new Dominion ships a full share in the heritage of the British Navy". Australian Ministers considered that Australian ships should fly either the White Ensign defaced with a seven-pointed blue star or the Australian Flag. After some months of discussion it was finally agreed that Australian ships would fly the White Ensign at the stern at all times, with the Australian Flag on the jackstaff on the bow when in harbour.

The new Australian White Ensign preserves two features of the British White Ensign — the Union Flag in the upper canton at the hoist and the white background. In place of the St. George's Cross, which was added in 1702 to distinguish it as an English Flag, the blue Australian stars denote an Australian ensign.

Best Wishes from . . .

Townsville Transport Services Pty. Ltd.

ROAD TRANSPORT, EARTHMOVING AND MATERIALS HANDLING
OPERATIONS

Archer Street — Phone 6041

Head Office, 15 DENHAM ST., TOWNSVILLE, Qld.
Phone 6021 Phone 6021

Kind Regards to All Navy Personnel from . . .

F. & S. McDONALD & STAFF at the

Motel Coolabah

TOWNSVILLE'S LEADING MOTEL

141 BOWEN ROAD, TOWNSVILLE, QLD.

Phone 92084

— BOOK REVIEWS —

“WEATHER AND CLIMATE”

AUTHOR: R. C. Sutcliffe, C.B., O.B.E., F.R.S.

PUBLISHER: Weidenfeld and Nicolson. 193 pages. Price \$5.90.

REVIEW BY: M.E.T.

This timely publication, in the “Advancement of Science” Series, coming as it does, at a time when an appreciation of the various factors affecting our weather are more widely known than hitherto, due in part of course, to the contributions made by the weather satellites, adds considerably to the knowledge of both expert and tyro. Written in a most interesting manner, and completely intelligible to the average reader, the more-not-so-readily

understood aspects of factors involved, i.e. Vertical Convection, Radiation and Energy exchanges etc. are here presented in a readily understandable manner.

A special mention should be made of the chapter on synoptic meteorology which shows the enormous amount of attention currently obtaining in this field with some interesting suggestions for future expansion of this vital work.

The charts accompanying this

chapter add a good deal to the explanatory text.

In his chapter on the control of weather and climate Professor Sutcliffe effectually deals with the unfounded suspicion directed at the interference with weather by nuclear explosions and the like-whilst at the same time removing any grounds for complacency. Altogether a worth while contribution to our knowledge of a most contentious and little understood subject.

“Matthew Flinders 1774-1814”

AUTHOR: James D. Mack.

PUBLISHER: Nelson, 1966. 270 pages. Price \$4.75.

REVIEW BY: Lt. Cmdr. B. R. Nield, R.A.N.R. (Retd).

As small schoolchildren we acquire, towards famous people, attitudes that it is hard to abandon. At primary school, I was taught about Flinders, Bass and the Tom Thumb. Aborigines being shaved and this trivial episode somehow leading to the circumnavigation of Australia. I felt then that it was part of the hotch-potch of Australian history, all dead dull compared with English history.

Years later, when I saw the Admiralty manuals on hydrographic surveying and on navigation, I read that Flinders, in sailing round the Australian coast, had carried out the greatest single operation in the

history of hydrographic surveying. Then I discovered that Flinders was not only part of dull Australian history but was one of the great men in the history of the Royal Navy. Australian history of course, should not really be so dull. In the end many of us learn this about Australian history; but it often takes long to learn, and, while we are learning, many of the great men who have been here fall into obscurity.

Mr. J. D. Mack, an American librarian has, in this book, produced a vivid account of Matthew Flinders as one of the great men of

history. He presents the historical evidence so carefully that the story seems to tell itself. He does, however indicate the importance of Flinders in history. As he gives a useful bibliography and stresses less obvious facts, this book is a very useful companion to Flinders's own writings. After reading Mr. Mack's account, we can remember Flinders's problems and hardships, the wife whom he left behind, the brother who was not a good officer, or the death of the cat who was taken prisoner with him at Mauritius.

Finally, we can be led to read further.

THE DIRECTORS AND STAFF OF

AVIATION ENGINEERING SUPPLIES

(Late A.E.S. Trading Co. Pty. Ltd.)

MELBOURNE AIRPORT MATTHEWS AVENUE
NIDDRIE, VICTORIA



TAKE THIS OPPORTUNITY TO EXTEND BEST WISHES
TO ALL MEMBERS



For all your sporting requirements see the Melbourne Sports Depot and for personal service to H.M.A.S. Cereberus personnel, we recommend you see Mr. Douglas at our Frankston Branch.

56 WELLS ST., FRANKSTON—Ph. Frankstown 3-5544

IF YOU'RE ON LEAVE — call on our Head Office, 55 ELIZABETH STREET, MELBOURNE, Phone 62-6181, or 88 THE MALL, CHADSTONE SHOPPING CENTRE Phone 564532 or 14 NORTH WALK, NORTHLAND SHOPPING CENTRE, PRESTON Phone 476-2121.

Also Our New Centre at
123 Elizabeth St.



"DOWN TO THE SEA"

A Century of Oceanography

AUTHOR: J. R. Dean.

PUBLISHER: Brown, Son and Ferguson, Ltd., Glasgow. 1966
107 pages, illustrated. Price: approx. \$6.

REVIEW BY: William Charles Colvin, D.Sc.

"They that go down to the sea in ships, that do business in great waters; These see the works of the Lord, and his wonders in the deep."

PSALM 107, verses 23 and 24.

This useful book fulfills an urgent need for reference works written in the English language, on the early development of oceanography and traces its rise to a great all-embracing science of the sea.

Throughout this work, Mr. Dean stresses the affinity between the two sciences of meteorology and oceanography, the interaction of the atmosphere and the hydrosphere, and the advantages to be gained by following a similar course of study in

the two disciplines — suitably demonstrated by the knowledge that in the ocean we may look for a pattern of travelling disturbances rather like that which is found in the atmosphere.

To any reader the book is most enlightening and covers the beginnings of marine sciences; the great work of Prince Albert I of Monaco — his voyages, equipment, findings and subsequent applications and developments, many of which were not equalled for over fifty years, marine institutions; world maps and charts; the use of aircraft in oceanography; the deep submersibles — Bathyscaph and Mesoscap; and the

various resources of the sea as regards oceanography and the population explosion, fertilizers, offshore oil exploration and production, atomic energy and underwater medicine.

The book contains some excellent photographic plates and also includes a comprehensive Bibliography on the Bathyscaph and other submersibles.

"Down to the Sea" — a book readily absorbed by the professional and enjoyed with interest by the amateur, is seldom boring. I should have no hesitation in recommending this book.

Contributions Invited

The editor invites persons to submit articles and photographs for inclusion in the magazine, but regrets that no payment can be made for contributions submitted. 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 with which a stamped and addressed envelope is enclosed.

Season's greetings to all Navy Personnel from ...

BUCHANAN'S HOTEL

FOR THAT CREAMY ALE AT ITS COLDEST BEST
Friendly Service In Convivial Surroundings

1 Sturt St., Townsville, Qld. Phone 5103



JAMES NURSERIES—SMITHFIELD

URGE YOU TO SUPPORT THE
RED CROSS BLOOD BANK

The Life You Save Could Well
Be Your Own!

Best Wishes are extended to all members

J. HAMILTONS

YOUR LOCAL MENS & BOYS WEAR
OUTFITTING SPECIALISTS — CALL IN
AND SEE OUR COMPREHENSIVE
RANGE AT ...

74-76 MURRAY STREET, GAWLER

Phone Gawler 146

Best wishes to the Navy League from ...

Southern Cross Panel Repairs

(A. Nicholson, Proprietor)

805 South Rd., Edwardstown, S.A.

We specialise in all body repairs — expert workmanship
Skilled Tradesmen
Insurance Quotes — Phone 53-4143



CARAPARK PRODUCTIONS PTY. LTD.

Manufacturers of the famous

CARAPARK ALL-METAL CARAVANS

in sizes from 10 ft. to 50 ft.

A COMPLETE RANGE OF COMMERCIAL AND
DOMESTIC UNITS TAILORED TO YOUR
SPECIFICATIONS (BOTH MOBILE AND SKID MOUNTED)
SEE ALSO OUR LINE OF COMPLETELY FURNISHED
PRE-FABRICATED BUILDINGS FROM
CABINS TO HOUSES

1103-1107 SOUTH ROAD, EDWARDSTOWN

Phone 76-8733

Nautical Notes from All Compass Points

By SONAR

CANADA ONE UNIFORM FOR ALL SERVICES

Canada's much-discussed unified uniform for the new Armed Forces is ready to be presented to the Defence Council for final approval.

However, it is not expected the uniform will be revealed to the public until after the unification bill has passed Parliament and become law.

The sight of the new uniform, it is thought, would just bolster the opposition of the military traditionalists to unification.

When it finally is revealed, Canadians will see an identical uniform for officers and men. The only way to tell a man's rank will be by his badges. The colour, although still not officially agreed on, is almost certainly going to be a "rich" dark green.

"This is a deliberate effort on our part to emphasise the new sort of military establishment," a National Defence official in Ottawa said.

"In a highly technical force it is ridiculous to maintain a class distinction in the quality of uniform between officers and the ranks.

"We are sure this will be popular with the men, and the officers will gain financially."

Instead of buying their uniforms through military tailors at considerable expense, officers will be able to buy from military stores at per-haps \$C45 to \$50.

Material will be crease-resistant, the buttons do not need polishing. Heavyweight and lightweight uniforms will look identical.

It means a man working in a hot office can wear his lightweight uniform in winter, and the man working outside in unseasonably cold summer weather can wear his heavy uniform without breaking regulations, as is the case now.

Only the hat band will reveal the branch of the Service in which a man is working.

Dark blue, light blue and khaki will show naval, air or ground

units, with other colours designating specialised forces such as the medical units.

Badges of rank will be Army stripes for non-commissioned officers and Navy-Air Force sleeve rings for the officers, although the titles will be Army. The rank badges will be gold or perhaps a rust-brown.

All Forces will wear red maple leaf shoulder flashes and some form of command badge over their right breast pockets.

Plans call for producing 400 of the new Canadian uniforms for user-trials this year. If the bill passes Parliament relatively quickly they could be seen in public by March or April.

When the final specifications have been drawn up, Department of Defence Production will call for tenders from textile companies, button and patch and hat-makers and clothing manufacturers to produce 200,000 or so uniforms over a four-year period.

ORDER FOR DUTCH PROPELLERS

Lips N.V. of Drunen (Holland) has received an order from the United Aircraft Co. of Canada Ltd. worth many millions of dollars for eight heavy-duty adjustable ships' screws. The screws will form part of complete propelling machinery

installations to be delivered to the Royal Canadian Navy by the United Aircraft Company.

ST. LAURENT CLASS CONVERSION

The seventh and last of the ST. LAURENT class has just completed conversion from a Destroyer Escort to a Helicopter Destroyer (Anti-Submarine Vessel). The conversion consisted of fitting the ships with a hangar and landing platform for heavy all-weather operations, installation of Variable-Depth Sonar and other improvements in the ships' anti-submarine capability.

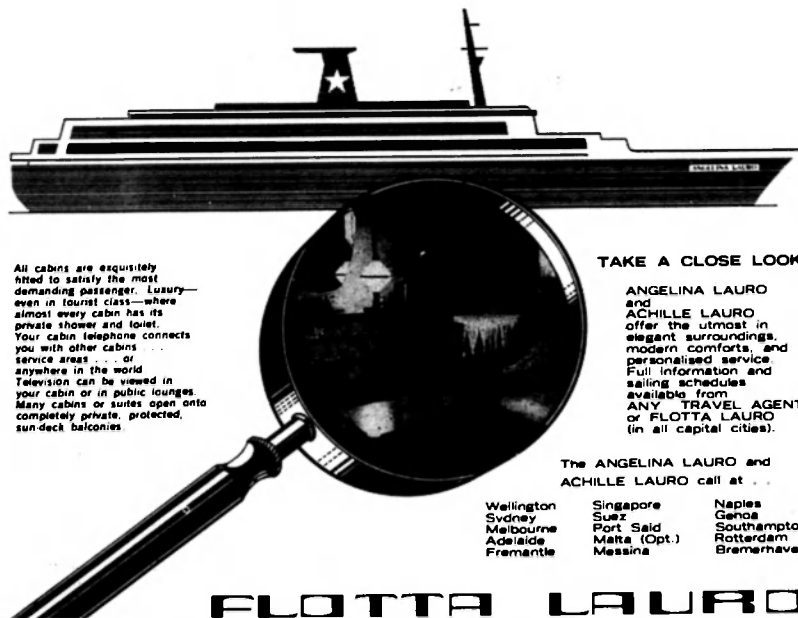
PEOPLE'S REPUBLIC OF CHINA

A NAVY BUILD-UP IN RED CHINA

Communist China wants a first-rate navy. Modern destroyers, destroyer escorts, submarines and other craft are being built in Shanghai and Canton shipyards to replace the junks and superannuated Soviet vessels that now patrol Chinese shores. "A fleet will reflect China's real strength," one Western expert explains. "It would have been impressive, for example, if China could have sent a couple of destroyers with a transport ship to rescue Chinese being persecuted during the recent anti-Communist take-over in Indonesia."



H.M.S. 'Peder Skram' — See article next page.



All cabins are exquisitely fitted to satisfy the most demanding passenger. Luxury—even in tourist class—where almost every cabin has its private shower and toilet. Your cabin telephone connects you with other cabins, service areas, or anywhere in the world. Television can be viewed in your cabin or in public lounges. Many cabins or suites open onto completely private, protected, sun-deck balconies.

TAKE A CLOSE LOOK

ANGELINA LAURO and ACHILLE LAURO offer the utmost in elegant surroundings, modern comforts, and personalised service. Full information and sailing schedules available from ANY TRAVEL AGENT or FLOTTA LAURO (in all capital cities).

The ANGELINA LAURO and ACHILLE LAURO call at

Wellington	Singapore	Naples
Sydney	Suez	Genoa
Melbourne	Port Said	Southampton
Adelaide	Malta (Opt.)	Rotterdam
Fremantle	Messina	Bremerhaven

FLOTTA LAURO

NAVAL PURCHASING SCHEME—PHONE 57-0231 (0 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 Kelghran 53-8979, Audrey, K. 57-8191, Bill Howard, 56-8254
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

DENMARK NEW FAST CODAG FRIGATE

It is not only the major naval powers who are producing warships with novel weapons or propelling machinery. The new Danish fast frigate PEDER SKRAM (see photograph previous page) is now being fitted out with her final equipment. With a standard displacement of about 2,200 tons and a conventional armament of four 5.1-inch guns and four 40mm. anti-aircraft guns, she looks very much like a normal destroyer.

Her novel feature is that she has a combined diesel and gas turbine main propulsion plant. She has two diesels of 4,800 brake horsepower and two gas turbines aggregating 37,000 horsepower, giving a speed of 28 knots. The only other combined diesel and gas turbine ships in the world are the four fast frigates of the Kohn class in the Federal German Navy and the HAMILTON, launched for the United States Coast Guard last December and now being completed.

PEDER SKRAM has a sister ship, HERLUF TROLLE, being completed. They were originally to have been designated destroyer escorts (DE) but are now known as fast frigates (FF). They are the largest and most powerful ships in the Danish Navy.

FRANCE NEW MISSILE RANGE

Centre d'Essais de Landres (CEL) is expected to be ready this month to take over all missile testing and research activities previously located at Colomb-Bechar, Algeria. The former Algerian range could then be closed, though France has until July to complete the transfer. The new range has an area of 32,000 acres on the French Atlantic coast, and has a tracking station and observation post located on the Isle de Flores in the Azores about 1,500 miles away, and three other support stations on the mainland. Full installation work will not be completed until 1970. CEL currently employs 2,000 within the complex, but the staffing will be expanded

by another 2,000 civilian workers and 1,000 military when it is ready for peak operation.

ITALY OCEANGOING SUBMARINE SQUADRON

Italy has just acquired two United States fleet submarines of the BALAO class. They are BESUGO, renamed FRANCESCO MOROSINI and CAPITAIN, renamed ALFREDO CAPELLINI. Of 2,425 tons submerged displacement, with an armament of ten 21-inch torpedo tubes and a speed of 20 knots on the surface and ten knots submerged, they will make a homogeneous squadron with EVANGELISTA TORRICELLI, formerly LIZARDFISH, acquired from the United States in 1960, and also of the BALAO class, and LEONARDO DA VINCI, ex-U.S.S. DACE, and ENRICO TAZZOLI (ex-U.S.S. BARB), both very similar ships of the GATO class transferred from the United States Navy in 1954 and 1955.

Hitherto Italy has had to gain operational experience partly with former U.S. submarines and partly with much smaller boats resurrected from Italy's wartime flotillas, but now the latter are gradually being withdrawn from service. GIADA was removed from the effective list in 1965 and VORTICE is due to be stricken from the strength this year, so it is only a matter of time before the remaining Italian-built boat, PIETRO CALVI, is taken out of active service.

Italy is building four small submarines of the hunter-killer type, but they have been a long time in the pipe-line, their design having been recast several times.

JAPAN CONTAINER CARRIER

The Government Atomic Energy Commission has announced its intention to build a 30-knot container carrier, to be Japan's second nuclear powered ship.

BOEING-VERTOL HELICOPTER

The Kawasaki-built Boeing-Vertol 107 helicopter is currently being

considered under Japan's 3rd Defence Programme for supply to all three services, the variant for each service differing in equipment and fuel tankage. In JASDF service the KV-107 will be employed for the air-sea rescue task, and will have an endurance of seven hours; in JMSDF service it will fulfil the minesweeping role with an endurance of four hours, and JGSDF service it will be employed in the troop and cargo transport role and will have an endurance of three hours.

NATO ANTI-SUBMARINE EXERCISE

Londonderry was the scene for a NATO exercise at the end of September and beginning of October 1966. Ships and aircraft from Canada, France, Germany, the Netherlands, Norway, Portugal and the United Kingdom assembled there on the 19th September for a week's schooling and weapon training.

The actual exercise took place between 1st and 7th October, and was conducted by the Joint Anti-Submarine School. Among the British forces taking part were the cruiser TIGER, the frigates NAIAD, RUSSELL and MURRAY, the helicopter support ship, LOFOTEN, fast patrol boats, supply ships and the submarines FINWHALE, THERMOPYLAE and WALRUS.

Aircraft taking part included R.A.F. Shackletons of No. 203 Squadron from Ballykelly and R.N. Buccaneers, Sea Vixens, Gannets and helicopters.

NETHERLANDS NUCLEAR DEFENCE

The Netherlands has been elected a member of the group for nuclear planning of the recently instituted NATO committee for nuclear defence affairs. The term of election is from January, 1967, until June 30, 1968.

DESIGN FOR EXPORT

It is both a tribute to British warship designers and to the success of the class in service that the Royal Netherlands Navy is build-

ing a class of six frigates of the LEANDER type. Known as the VAN SPEIJK class, they have been given the names EVERTSEN, ISAAC SWEERS, TIERK HIDDEN, VAN GALEN, VAN NES and VAN SPEIJK.

The name ship was laid down on October 1, 1963, launched on March 5, 1965, and has just been completed.

The six ships are being built as replacements for the six frigates (destroyer escorts) of the VAN AMSTEL class acquired from the United States in 1950-51 under the Mutual Defence Assistance Programme, and which, having been completed in 1943-44, are now about 23 years old. They will be returned to the U.S.A. successively as the new ships come into service.

The VAN SPEIJK class are practically homogeneous with the British LEANDER class, but they have small modifications in accordance with the specific requirements of the Royal Netherlands Navy. As far as possible, equipment of Netherlands manufacture is being installed. In order to avoid delay in the construction, it was decided to fit these ships with equipment available at short notice and not to wait for equipment still in the development stage.

NEW ZEALAND BATTLE FLAG

The battleflag of the German pocket battleship Admiral Graf Spee has been found intact in New Zealand 26 years after the Battle of the River Plate.

The 24-foot long red battle flag was acquired by a Royal New Zealand Navy seaman at Montevideo in 1939.

The Admiral Graf Spee was blockaded in Montevideo in December, 1939, after a battle with British warships, but was scuttled on Hitler's orders.

New Zealand Navy crew off the British warship Achilles on shore leave in Montevideo mixed with the German crew and acquired the

flag, but it was not handed over to the Navy Office in Wellington until earlier this month.

NORWAY FRIGATE DELIVERED

Marinenes Hovedverft, Horten, the former Royal Norwegian Naval Dockyard, has delivered K.N.M. OSLO, first of five single-screw general-purpose frigates based on the U.S. Navy's DEALEY class. These are of 1450 tons displacement, 317 ft. in length and 36 ft. 8 in. in beam, and carry four 3-in. guns in twin mountings and the Norwegian-designed Terne anti-submarine rocket. The machinery consists of a Stal-Laval PN20 (Navy type) set of two-casing turbines with double reduction locked train gears to give 20,000 shp at 270 rev./min. for a speed of 25 knots. The astern power is 4000 shp.

Two Babcock & Wilcox Selectable Superheat boilers built by Thunes Mek. Verksted, part of the Kvaerner Bruggroup, deliver steam at 600 lb.-in², and 850 deg. F. The machinery is controlled from a room located in the engine room. Most of the propulsion auxiliaries are electrically driven and an auxiliary boiler is provided to reduce the time taken to light up the

main boilers and for service in harbour. Stal-Laval has also supplied the auxiliary turbines for the generators.

SEATO NAVAL CONTROL OF SHIPPING EXERCISE

Key officers and men from six member nations of the South-East Asian Treaty Organisation began a major two-week shipping control exercise on Monday, 13th February, 1967.

The exercise, nicknamed "Sea Rose", involved over 2000 simulated ships and 99 vital naval command communications, and shipping control centres in Thailand, the Philippines, New Zealand, Australia, United Kingdom and the United States.

A combined directing staff of Navy officers from the U.K. and the U.S., the co-sponsoring nations, executed the detailed plans from the Pearl Harbour headquarters of the Commander Anti-submarine Warfare Force, U.S. Pacific Fleet, Vice-Admiral John L. Chew.

Command decisions influencing the movement of shipping under naval control were tested under realistic conditions. However, actual ship movements were not affected.



M.Sw.M.S. 'Plejad' coming out from her camouflaged atom-bomb-proof shelter.

SWEDEN OUT OF SOLID GRANITE

The Swedish Navy has started to use a base built deep inside a mountain of rock at a cost of £20,000,000. This subterranean arsenal was conceived as a nuclear bombproof fortress capable of accommodating any ships of the Swedish Navy up to the size of the largest destroyers.

The new naval base, on the island of Musko in the archipelago south of Stockholm, has been blasted out of the solid granite. It consists of a system of underground ship tunnels, docks, offices, workshops, staff quarters and service facilities. It is the only base of its kind in the world (see photograph page 32).

Designed to serve as a self-contained base for naval operations in wartime, it has been supplemented for peacetime with buildings and quays, etc., above ground. The present staff is about 1000, half of whom are dockyard workers, but the number in wartime would be larger.

From the time the project was started several years ago the Swedish Navy has been making limited use of the underground base. Large torpedo boats have been housed in one of the cavernous camouflaged tunnel entrances to the enormous rock shelters since 1962, and now with more tunnels bored through the granite in all directions and on several levels progressively more and more of the subterranean dockland has been opened up for use. The base is reckoned to be proof against any form of attack.

Sweden recently proposed to the Geneva Disarmament Conference that the major Powers should cease production of nuclear weapons, but if nuclear weapons are ever used again the Swedish Navy is well prepared.

UNITED KINGDOM TORPEDO

Britain is on the brink of an important breakthrough in submarine warfare, according to the defence correspondent of the "Daily Sketch".

This follows a series of trials of a torpedo controlled by a trailing wire from a submarine. The firing sub. will have control of the torpedo to the moment of impact.

EXPORT ORDER FOR "TIGERCAT" MISSILE

Short Bros. and Harland have won their first export order for the surface-to-air TIGERCAT missile — an order worth almost £5 million. This good news for the firm has been announced as part of a multi-million pound defence deal between the Governments of the United Kingdom and of Iran. Short Bros. and Harland have already been very successful with their SEACAT sea-to-air missile, which is in use in a number of Navies.

PRESERVING GUNS

The last two British 15-in. naval guns in existence, from the R.N. battleships RAMILLES and RESOLUTION, both 29,150 tons, are to be preserved Southward in front of the Imperial War Museum.

NEW SURVEYING SHIPS

An order for four new surveying ships for the Royal Navy has been placed with Brooke Marine Ltd. of Lowestoft. These new coastal survey craft will replace the four converted "Bay"-class frigates which have been in service since 1950.

Built especially for surveying, they will incorporate the most modern scientific equipment, and have been designed to operate independently in any part of the world for long periods.

SIXTH NUCLEAR SUBMARINE TO BE

The Navy's Parliamentary Under Secretary, Lord Winterbottom, announced in the House of Lords on November 8 that the Navy Department plans to order a sixth nuclear powered submarine early in the New Year.

Two submarines of this type, H.M.S. DREADNOUGHT and H.M.S. VALIANT, are already in service, and two others, WARSPITE and CHURCHILL, are under construction. The fifth, as yet unnamed, was ordered three months ago.

WESTLAND-SIKORSKY 20-YEAR LINK

Twenty years of mutually profitable working together were celebrated on January 10 by the Sikorsky Aircraft Division of United Aircraft Corporation (U.S.A.) and Westland Aircraft (U.K.), each in its sphere a top-flight helicopter manufacturer. Westland's chief executive, Mr. E. C. Wheeldon, pointed out that since signing of the 1947 agreement Westland had built 900 helicopters under licence from Sikorsky. As a result of the 1960 consolidation of the British aircraft industry, Westland took over Saunders-Roe Ltd., Bristol Aircraft's helicopter division and Fairey Aviation, achieving monopoly position in the British rotary wing field and adding the Sycamore, Belvedere, Skeeter, Wasp, Scout and Rotordyne designs to its Sikorsky line-up of widely varied types to meet military and civil requirements.

In late December the Ministry of Aviation placed with Westland on behalf of the R.N. what the company described as "the biggest single contract for helicopters ever placed with a British company." Worth, with spares, about £24 million (\$60 million), it was for an undisclosed but "considerable" number of twin-engined helicopters — a version of the Sikorsky SH-3D Sea King type, which is to be powered by two BS Gnome 1400 gas turbines, and equipped with an "advanced capability" British-designed ASW system. The new helicopter is scheduled to enter service with the R.N. in early 1969. According to Westland this version "with its heavy load-carrying capabilities", will have the "potentiality for a wide variety of naval tactical tasks, including, if necessary, the transport of 20 fully equipped troops." Westland managing director, Mr. D. C. Collins, called it "the best submarine hunter-killer helicopter in the world" with a considerable future export potential to boost the British aircraft industry.

UNITED STATES OF AMERICA

ALL-WEATHER CARRIER LANDING SYSTEM

A series of "hands-off" carrier jet landings, using the new All-weather Carrier Landing System (ACLS), were made on the USN carrier AMERICA in late November.



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

33-149

Welcome Boatmen

**POWER BOAT
and YACHTING**

EVERY MONTH YOU CAN HAVE YOUR COPY SENT TO YOU ANYWHERE IN THE WORLD AT NO EXTRA COST. A SUBSCRIPTION WILL ENSURE EARLY AND DEPENDABLE DELIVERY OF EACH ISSUE.

SAIL and POWER . . . racing or just browsing on the water it's practical reading, it's armchair reading . . . you'll enjoy it.

12 ISSUES \$3.60 — 24 ISSUES \$6.50 — 36 ISSUES \$9.00

Post Cheque or Money Order to

POWER BOAT and YACHTING

33 YORK STREET, SYDNEY, N.S.W.

AUSTRALIA'S LEADING BOATING MAGAZINE

30c

ber with a success noted by the Navy as a 'major breakthrough' to simpler operational landings at sea, and easier night flying qualification by carrier pilots. Final operational tests of the system are scheduled for April, following which it is expected that all carrier-based aircraft will be ACLS-equipped. Radars and computers are used in the system to assess and transmit to the aircraft precise information giving the rapid scan rate to the carrier and the carrier's roll, pitch and yaw.

NEW RADAR SYSTEM

Capability for helicopter operations at night and in foggy weather could be significantly improved, and possibly revolutionised, by a joint U.S. Army-U.S.N. research group's development and flight testing of a new radar system, involving the mounting of two 15 ft. antenna arrays in each of the blades of a Bell UH-1B helicopter, with rotor rotation giving the rapid scan rate needed for radar mapping. Application and development of the system by Bell Helicopter Co., using special Texas Instruments radar equipment, incorporates an all-transistorised receiver and sweep generator and has no need of computer, mechanical components or servo system for operation. All of

this makes for simplicity, ruggedness and reliability, with ease of maintenance in combat conditions. The programme, administered by the Office of Naval Research as part of JANAIR (the long range Joint Army-Navy Instrumentation Research programme) and Pentagon Navy officials report that flight tests have demonstrated almost ground mapping results, so good is the contrast between objects and varying terrain. Pilots with some previous knowledge of an area overflown could identify even tree clumps, buildings and oil tanks. With T.V. input provided the direct view storage display tube could also provide a high resolution T.V. picture.

HYDROFOIL GUNBOAT TO HAVE PROTEUS ENGINE

The new Boeing PGH2 Hydrofoil will be 71 ft. long, with a beam of 25 ft. and displacement of about 60 tons (Refer notes, page 55, previous edition).

Waterjet propulsion will be used for both hullborne and foilborne operations. For the latter the 4,250 h.p. Bristol Siddeley Proteus engine will drive direct to the high-speed centrifugal pump.

The ship, the first of its kind, will be armed with a 40 m.m. gun forward and an 81 m.m. mortar

ast. A speed of over 40 knots is claimed.

BELL UH-1E HELICOPTERS

U.S.N. has stepped up its order for Bell UH-1E helicopters, for use by the Marine Corps for escort and troop-carrying work in Vietnam, from 31 to 58, with deliveries of the 10-place helicopter scheduled through to January, 1968. Value of the contract is \$U.S.8,395,859.

F-111B EVALUATION

The U.S. Navy is scheduled to commence its preliminary evaluation of the F-111B. Two aircraft will be used in the evaluation—the fourth and fifth R&D F-111B's—which will occupy a 90-day period, and both will be powered by TF30-P-1 engines which have 17 per cent less thrust than the TF30-P-12 proposed for the production model. It has been revealed that the production F-111B as currently visualised will weigh approximately 75,000 lb. (34,019 kg) in its production form, despite the "super weight reduction programme", as compared with the initial specified weight of 62,788 lb. (28,480 kg) for the fully-fuelled aircraft. The fourth R&D F-111B has an empty weight of 43,505 lb. (19,733 kg) as compared with the specified empty weight of 39,404 lb. (17,873 kg), but U.S. Navy Secretary Paul Nitze stated recently that he does not believe that General Dynamics and Grumman can reduce the weight of the production aircraft below that of the fourth R&D aircraft. At 75,000 lb. (34,019 kg) the F-111B will be the heaviest aircraft carrier in U.S. Navy service (the RA-5C Vigilante has a maximum overload weight of approx. 74,000 lb. (33,566 kg), but the elevators of the U.S. Navy's nine largest carriers are being modified to lift nearly 90,000 lb. (40,823 kg).

NEW CLASS OF MOTOR GUNBOAT

First of Class—the U.S.S. "Asheville" (PGM-84), lead ship for a new series of motor gunboats was commissioned 6th August, 1966. Seen here on trials, she is 165 feet over-all, displaces 225 tons full load, and has a combination diesel and gas turbine (CODAG) power



U.S.S. ASHEVILLE First of a new class of Motor Gunboat.

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.

Helicopter Pilots

Helicopter Engineers

HELICOPTER UTILITIES

PTY. LIMITED

Australia's Largest Helicopter Company Operates Helicopters throughout Australia and New Guinea.

OPPORTUNITIES EXIST

FOR PILOTS AND ENGINEERS retiring from the service to fit themselves for civilian employment in an interesting, well paid position.
For full details apply to—

HELICOPTER UTILITIES PTY. LTD.
P.O. Box 173, Mascot, N.S.W.
(TELEPHONE: SYDNEY 67-3125)

plant to drive her at 27 knots. Six additional ships of this type are now under construction, all being built by the Tacoma Boat-building Company at Tacoma, Washington.

SWITCHING OF FUNDS

U.S. Defence Secretary McNamara has been asked to explain the switching of a reported \$U.S.40,000,000 funds voted for the U.S.N. Poseidon (Polaris replacement) missile programme to the purchase of about 15 C-130's for Navy use. The House Armed Services Committee wants to know if this will affect adversely the plan to equip (or re-equip) 13 submarines with the advanced Poseidon, compared with 28 FBM submarines armed with the Polaris A-3 missile—Poseidon having been proposed as a possible answer to reports that the U.S.S.R. was establishing an anti-missile-missile system.

U.S.S.R. SOVIET RED SEA BASE ALLEGATION

The Soviet Union was building a naval base with United Arab

Republic help at the Yemini Red Sea port of Mocha, said Lieut. Udaini, a Yemini official seeking political asylum in the British Protectorate of Aden. He said the Russians wanted to turn Yemen into an Eastern military base.

NO TOTS FOR TOVARICH

The rules in the Russian Navy on drink appear to be very strict. Naval officers are not normally allowed alcohol onboard ships, except in submarines where there is a free issue of wine, somewhat similar to our rum issue. Alcohol is however allowed on board all ships for official receptions.

Naval ratings are not allowed into pubs ashore at all, whether in uniform or plain clothes, and the shore patrols strictly enforce this order.

WESTERN GERMANY BIGGEST SHIP

The keel of what will be the biggest ship built in Europe, a 190,000 ton tanker for Esso, was laid recently at the State-owned Howaldt shipyards in Keil.

TO SWEEP MINES

The West German Navy during March will begin its most hazardous assignment since its formation in 1955.

More than 50 minesweepers will launch Clean Sweep, a seek-and-destroy operation to clear Germany's North Sea coastal waters of World War II mines.

Said a naval spokesman: "There are about 3,000 wrecks in the North Sea, but nobody knows how many mines.

"All minefields, as such, have been swept, but mines that have strayed from their original positions and others that were dropped from aircraft are still a menace to shipping in this area."

The West German Navy has been called in because the mine-free North Sea shipping routes now in use are becoming crowded.

The minesweepers will also set up passages on which there will be little risk of collisions. These will lead from the River Elbe, in Germany, to the Humber estuary, in Britain.



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 **\$260**
Single Fares to England from **\$363**

Particulars from Authorised Travel Agents or

SHAW SAVILL LINE
8A CASTLEMEAD ST., SYDNEY. Phone 28 1828

Ashton Dry Cleaners

Well Known in R.A.N. Circles for
Quality and Service

◆
68 OXFORD STREET
SYDNEY

Phone: 31-4473

Nicol Bros. Pty. Ltd.

ALL CLASSES OF
STEAM, DIESEL AND GENERAL
ENGINEERING

Boilermakers
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

You'll notice something different about Penfolds Sparkling



Mardi Gras

Try it! Sparkling Mardi Gras —
the light bright fun wine from Penfolds

PENFOLDS

PW1247



"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 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:



For Cool, Creamy XXXX Beer always on tap, call at . . .

INALA HOTEL MOTEL

Freeman Road, Inala, Qld.

Home Deliveries — Drive-in Bottle Department
Entertainment Friday and Saturday — No Cover Charge

Phone: 70-5533

Phone: 70-5533

We've Got the World's Biggest Second Pool

The Big, Beautiful Pacific Ocean is Right Outside. Whatever Your Mood There's Something Happening. Relax in the Beach Garden Lounge. Revel in the Galety of the Mardi Gras Room in the Evening

Live It Up in Casual Luxury at

The New Broadbeach Hotel

Bed and Breakfast From \$4.00 Per Day

For Reservations

Phone 92011 (10 lines)

Drink, Dine, Dance Nightly at the Ever Popular

QUEENSLAND HOTEL

Coolangatta Heart of the Fabulous Gold Coast

(Your Mine Host NOEL MELARUM)

"Tops in Entertainment" Enjoy the Atmosphere of Our World Famous Tropical Beer Garden which Includes the Drink Diner Catering for the Ultimate in Sea Foods and Chicken Meals to Please the Most Fastidious Diner. First Class Accommodation

For Reservations

Phone Tweed Heads 1217-8



(ONE'S HOT USED MUGS)

ENJOY NEW DAIRY CUP

hot drinking chocolate

TRY ITS DELICIOUS MALTY FLAVOUR!

NU-PRODUCTS OF AUSTRALIA PTY. LTD.

17-19 Trafalgar St., Woolloongabba, Brisbane, Qld.

G.P.O. BOX 1677V, BRISBANE

PHONE 91-4111

The Royal Norwegian Navy

A brief survey specially prepared for "The Navy" by the Information Service of the Norwegian Defence Department

The traditions of the Royal Norwegian Navy date back to the Early Middle Ages with the "LEIDANGEN", which was a system obliging each settlement to mobilise longships, or viking-ships, manned by the local population.

Later we find the strong naval forces of the United Kingdom of Denmark and Norway in the 17th and 18th centuries. This navy was to a large extent manned by Norwegian officers and men.



H.N.M.S. "TRONDHEIM"
Destroyer Escort (Oslo-class)

The separation from Denmark and the establishment of the Union with Sweden in 1814 marks the founding of the Royal Norwegian Navy of today. By 1905, at the dissolution of the Union between Sweden and Norway, the Norwegian Navy had become a significant factor influencing the negotiations between the two countries. Furthermore, it played an active part in keeping Norway neutral during the First World War.

When Norway was attacked by Germany in 1940, coastal batteries, naval ships and aircraft were immediately engaged in resisting the invasion. Most important was the sinking of the German heavy

cruiser "BLUCHER" by the Coast Artillery at Oscarsborg in Oslofjord. After the fighting in Norway, only a few minor naval vessels managed to escape to the British Isles. However small, this force was nevertheless to become a vital nucleus from which the wartime navy was developed with ships and weapons lent by Great Britain and the United States. Norwegian Naval Forces served with distinction and will be remembered for their participation in campaigns and operations as the Battle of the Atlantic, the Invasion of Normandy, the sinking of the German battleship "SCHARNHORST" and from numerous successful actions on the Norwegian coast.

A NEW NAVY

Since 1945, the Navy has comprised destroyers, frigates, submarines, motor torpedo boats, minelayers and minesweepers. A new-construction programme approved by the Norwegian Parliament in 1960 provides for an extensive renewal of the navy and includes the building of:

- 5 frigates
- 2 patrol craft
- 15 submarines
- 20 motor gunboats
- 20 motor torpedo boats.

The programme will be completed in 1968.

In addition, the following ships will remain on the active list:

- 9 minesweepers
- 4 minelayers
- and several auxiliary vessels of different types.

The Coast Artillery plays an important part in the defence. Modern coastal batteries are concentrated at the entrances to the main harbours. Most of the ships and forts are continuously manned. The service has a high degree of readiness and plays an important role in the defence of the country.

The main war task is defence against invasion. Of great importance is also the defence of shipping, in particular coastal shipping, which is a vital part of the Norwegian transportation system.

The Navy's predominant task in peace is patrol duties and surveillance of coastal waters. The Navy also protects the fishery border and renders assistance to Norwegian fishing boats overseas.

ORGANISATION

The Commander-in-Chief Royal Norwegian Navy has his Headquarters in Oslo. Under his direct command are the naval district commanders, naval logistic commander, commander training coastal fleet and the naval schools.

Greetings to H.M.A.S. Cerberus
Personnel from . . .

CRIB POINT ENGINEERING

Disney Street, Crib Point, Vic.

SHIP BUILDING AND GENERAL REPAIRS
PHONE CRIB POINT 98

Anzac Greetings to RAN Personnel from

WESTERNPORT DAIRIES

at Crib Point and Hastings, Vic.

Suppliers of milk to R.A.N. Depot
H.M.A.S. Cerberus

PHONE CRIB POINT 29

NAVY PERSONNEL LET

Easicut High Speed Steel Cutting Tools

Solve your tooling problem — Drills, Taps
Milling Cutter, Reamers, Countersinks
Counterbores, SR Boring Cutters, Tools Bits
Butt-welded Tools, Files, Hacksaw Blades
100T Cutter — For technical assistance
Special tooling design and quote

CONTACT HEAD OFFICE
250 Princes Highway, Dandenong, Vic.
Phone Dandenong 2-9351

NSW OFFICE
22 Mandible St., Alexandria, N.S.W.
Phone 69-5566

Greetings to all H.M.A.S. Cerberus
personnel and families from . . .

Your AMP Society Life Assurance

Representatives:
Messrs. Ashton and John Latham

12 RITCHIE STREET
FRANKSTON, VIC.

FOR ALL YOUR INSURANCE NEEDS
LIFE — FIRE — ACCIDENT

Phone Frankston 3-2822

The Management and Staff . . .

ANDERSONS PTY. LTD.

FURNITURE WAREHOUSE

50 Wells Street, Frankston, Vic.

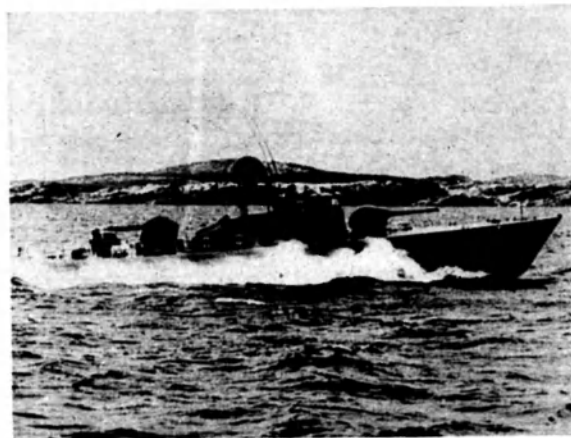
Phone Frankston 3-2368
Wishes Success to the "NAVY"

Compliments to H.M.A.S. Cerberus
Personnel from . . .

THE BEACH WAY SERVICE CENTRE

Cnr. Ashleigh Ave., and Beach St.,
Frankston, Victoria
(Prop. Steve Sullivan)

For Full SHELL Drive Way Service
Electronic Tune Up, Full Mechanical and
Brake Service
Frankston 3-6373
Please mention this Ad when calling



H.M.A.S. "BUNK"
Fast Patrol Boat (Storm-class)



H.M.A.S. "SLEIPNER"
Patrol Craft (Sloop-class)

There are 5 naval districts with
headquarters at Horten, Kristian-
sand S, Bergen, Trondheim and
Bodo.

The main naval logistic base is
Haakonsværn near Bergen.

NAVAL SCHOOLS

The armory of the Royal Nor-
wegian Navy afloat and in the Base

Defence System has indeed been
influenced by technical develop-
ments and marked by the advanced
specialisation of personnel and
material. To meet the require-
ments for this special training the
Navy has built schools and educa-
tional establishments after the most
modern concept. These establish-

ments match in every way those
of other navies, and contribute
largely to recruit qualified officers
and men for the ships, craft and
forts and other shore functions.

The Naval Academy in Bergen
educates executive, engineering and
supply officers. The executive
branch trains officers both for the
Navy and the Coast Artillery.

The Petty Officers' School at
Horten trains enlisted men for
petty officers within 15 different
branches.

The School Centre at the main
naval base is the training establish-
ment for most of the specialists in
the Navy.

In addition to the training centre
the submarine section at Haakons-
vern educates frogmen, divers and
submarine specialists. A special
engineering and electrician school
is situated at Horten.

At the old fortress Oscarsborg
the Coast Artillery School for
special training is located.

The Naval Staff College is in
Oslo.

BLAST-PROOF LIFE JACKET FOR AIRCREW

The Frankenstein Group's new
blast-proof flying jacket is made of
a mixture of Terylene and nylon,
and is claimed to withstand blasts
on ejection from an aircraft flying
at more than 700 m.p.h. The
Ministry of Aviation has recently
concluded tests on the jacket, and
these are understood to have been
satisfactory.

RESEARCH SUBMARINES

Details have been received of
two new STAR research sub-
marines built and already launched
by General Dynamics.

"Star III", the larger of the two,
is 25 feet long and can operate at
depths of 2,000 feet. Powered by
a 7.5 h.p. motor, it has complete
manoeuvrability in all directions.

The "Star IH's" equipment in-
cludes a mechanical arm which can
pick up round or irregularly shaped
objects up to 150 lbs. in weight.
This arm can be fitted with various
attachments, including a cable-
cutter and a power nut-driver.

Best Wishes from . . .

C. L. Peake & Sons

☆ MASTER PLUMBERS

- Specialists in
- Hot Water Installations
- Plumbing Repairs and Maintenance
- Sewerage Connections

18 Bannister Street, Fremantle, W.A.

PHONE 5-1815 —:— PRIVATE PHONE 39-1666



Best wishes to R.A.N. Personnel from

Rosella Foods Pty. Ltd.

69 THOMPSON ROAD
NTH. FREMANTLE, W.A.

Manufacturers of the famous
ROSELLA brand Canned Foods

Suppliers to the R.A.N.

Phone 5 2121

Compliments to R.A.N. Personnel on Anzac
Anniversary 1967 from . . .

GROSE Bros.

659 HAY STREET
PERTH

Specialists in:

NAVAL CAP MANUFACTURING

Phone: 21-7901

☆ Contractors to the R.A.N.

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



WHAT'S NEW?

Compiled by "Periscope"

STRANGLER

The hazard of fire aboard oil tankers can be sharply reduced by a new British "inerting" system which literally chokes off the supply of oxygen necessary for combustion. The Airfilco Gas Inerting System, developed by Airfilco, Ltd., of London, utilises boiler-waste gases which are cleaned and then forced under pressure into the tanker's cargo tanks. Since these waste gases, drawn from the vessel's main flue, are mainly carbon dioxide, nitrogen and water vapour with 3 to 5 per cent oxygen only (12 per cent oxygen is necessary to support combustion), the danger of explosion and fire is eliminated. Empty tanks are kept filled with the same inert gas to keep residual fumes from becoming a possible fire hazard. Cost of a fully automatic system: Approximately \$30,000.

PLASTIC ADHESIVE

A new range of plastics, that retain much of their strength up to 650 degrees F, and that, reinforced with glass cloth to form pressed sheets or laminates, are said to be stronger than aluminium, stainless steel and titanium alloys, have been developed by Westinghouse Research Laboratories. Westinghouse reports that these plastics, used as adhesive, will bond together sheets of titanium and stainless steel with hot strengths of more than 1000 lb.-sq. in., and with good insulating properties.

BLOW UP THE BOAT

A motorboat that can be packed into the trunk of a car, then inflated in minutes at the beach, and which will accept an outboard motor of up to 3 h.p., has been introduced by A.S. Cavender & Son Ltd., of Cambridge, England.

Called the Granta 2, the craft is constructed of multiply fabric, has inflatable seats for three persons, and has two air chambers with separate valves for greater safety. It can be inflated by foot pump, and standard equipment includes brass valves, catch and towropes and rowlocks. Packed, it measures 28 by 20 by 8 inches; weighs 24 pounds. Inflated, the Granta 2 measures 8½ feet long by 4 feet wide. Price: about \$100.

WORLD'S FIRST LASER GYRO

Conventional gyros are affected by problems of friction-caused drift, which in turn affects the accuracy of fire-control and search radar systems.

Scientists at Honeywell Controls Ltd. have now developed a laser gyroscope, capable of sensing motion in all three axes (roll, pitch and yaw), and this is undergoing tests with the U.S. Navy.

Each LASER (Light Amplification by Stimulated Emission of Radiation) ring uses two counter-rotating beams of coherent light to sense angular movement about its axis. Motion in each axis changes the apparent distance each beam must travel, causing a difference in the frequency at which each beam oscillates. This difference is detected by photocells and is counted electronically.

ESCAPE SYSTEM

An underwater escape system for Fairey Gannet pilots has been developed by Westland Aircraft's Fairey Aviation Division under MoA contract, and has been successfully live-tested at depths of 100 ft., with the fuselage in a variety of positions, including up-

side down. It consists of two self-contained pneumatic circuits, one separating the canopy from the aircraft, and the other freeing the pilot from aircraft equipment and ejecting him at five fps. With a compressed air sensing head, operating under pressure equivalents of 15 ft. of water, ejection is automatic, but the system can also be operated manually with the hood jettison handle.

FOLD-UP BOAT

A collapsible boat of marine plywood that can be assembled in 30 seconds has been announced by Novotronics, Ltd., of Letchworth, England. Called a Pac-A-Punt, the shallow-draft craft is made of solid panels, bonded together with waterproof neoprene hinges. Folded, it forms a flat rectangle (5 feet long, 3 feet wide and 2 feet 9 inches thick). It becomes a rigid structure when two thwarts have been fitted. The boat has room enough to seat three adults comfortably, and a reinforced upright transom will accommodate a 6½ h.p. outboard motor. Price: \$275.

WAVE TO ME

A lighthouse that generates its own electric power from the sea and requires little or no servicing has been developed by Japan's Maritime Safety Agency. Unlike other ocean-power sources, the Japanese generator derives its power from air pressure within a 25-foot long, 8-inch pipe that runs from shore to the sea. Waves, 3 feet high, at an interval of eight seconds, are sufficient to spin an air turbine at the upper end of the pipe. The turbine-run generator provides enough electricity to keep a 100-watt lamp burning constantly.

Greetings to the NAVY LEAGUE from

J. & M. WOOLLEY

Stony Point Road, Crib Point, Vic.

PHONE CRIB POINT 171

Your Quality Greengrocer at Crib Point

Greetings to R.A.N. Personnel at Sea and
HMAS Cerberus from the management

RADIO 3UL WARRAGUL

Your favorite Station (530 on your dial)
wishes to announce extended broadcasting
hours for your enjoyment — Monday to
Saturday 5 a.m. to 12 midnight — Sunday
12.01 a.m. to 11 p.m.

3UL WARRAGUL — 530 Kc
Frequency 2000 watts Power
Telephone WARRAGUL 2-1431

Enjoy . . .

THE HOSPITALITY AND CIVILITY EXTENDED TO ALL
NAVY PERSONNEL AT THE

Brittania Hotel

MORRIS ST., WILLIAMSTOWN, VIC.

"A NAVY LANDMARK FROM WAY BACK"

PHONE 65 5307



Best wishes are extended to the
Navy League . . .

**F. WATKINS (S.A.)
& CO.**

SHIP CHANDLERS & PROVIDORES

**65 ST. VINCENT STREET
PORT ADELAIDE, S.A.**

Telegraphic Address Wat Butch

Phone 4-1128, 4-3348

**PENINSULA
BATTERY SERVICE**

MAKERS OF

Tru-Pak Batteries

**13 WELLS ROAD
FRANKSTON, VIC.**

Extends greetings to all members and
assures the same High Standard of Service
as in the past ten years

For All Requirements

Phone: **FRANKSTON 3-3161**
or contact

Flinders Naval Depot Canteen

New Dimensions of Sea Power

By **DR. JOHN CRAVEN**

Chief Scientist, Special Projects Office, U.S. Department of the Navy

Man is on the threshold of expanding his use of the earth to include the sea bottom and its resources — a domain three times as large as that of all continents of the world.

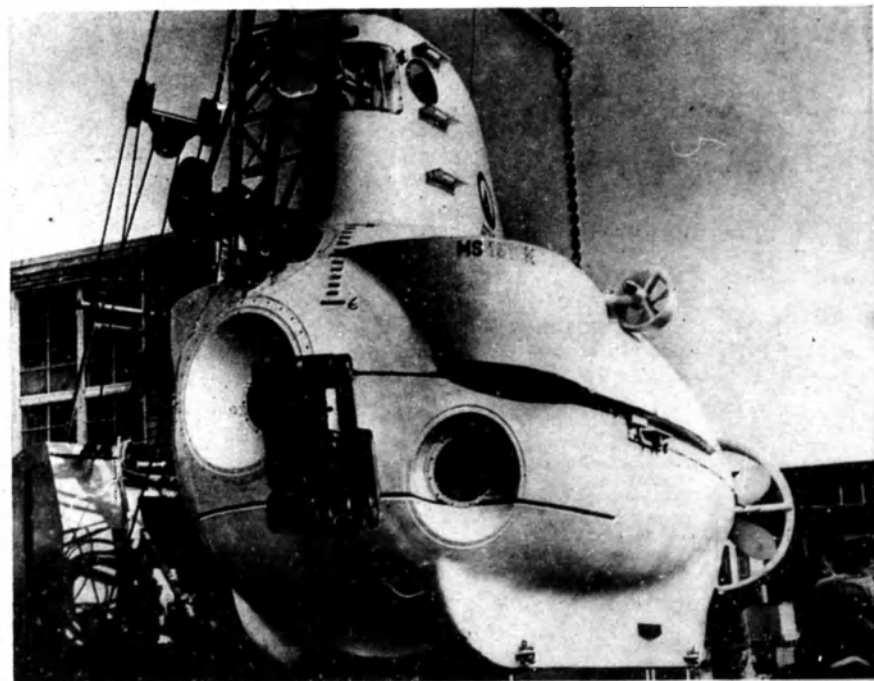
Responsible for this expansion are the internationalisation of the scientific and intellectual communities, the development of a technologically sophisticated society, and the ability to translate scientific development into engineering practice.

The greater focus today on technology of the sea and on hydrodynamics, the basic science of the sea, goes back to the recognition of sea power as the prime determinant in the two world wars.

First the submarine, and then aircraft challenged the free use of

the seas. They put the navies of the world on the defensive for the first time.

The submarine threat in World War I was so great that a group of treaties calling for its elimination was proposed. In World War II the immediate impact of air power at Pearl Harbour and the sinking, again by air power, of H.M.S. Renown and H.M.S. Prince of Wales three days later made many despair



RESEARCH SUBMARINE—This two-man submarine, operated by the Woods Hole Oceanographic Research Institution for the U.S. Office of Naval Research, is 22 feet (6.6 meters) long, weighs 11 tons, has a molded fiberglass hull, is capable of a continuous speed of four knots and a maximum range of 25 miles (40 kilometers). The nose occupies a steel sphere that can be released in an emergency and will float to the surface.

L. SUMICH & SON

241 Hamilton Rd. Spearwood W.A.

TELEPHONE: 5-8256

Suppliers of Fresh Fruit and Vegetables
From own gardens to Naval and Air Force Establishments



Best Wishes to the "Navy" from—

A. Papamatheos & G. E. Palassis

443 Newcastle Street, Perth

Ships Chandlers and
Providores

TRAVEL AGENTS FOR THE
CHANDRIS LINES

Phone: 28-1771 : Phone: 28-2136

ANZAC Greetings to "H.M.A.S. Leeuwin"
Personnel from . . .

Lockwood's Store

NAVAL BEACH ROAD
COOGEE BEACH

Phone: Spearwood 352

Grocery, Hardware, Fancy Goods
Confectionery, Cool Drinks
and Ice Cream

Hot Water Available

Authorised Newsagent—Books, Magazines,
Comics, etc.

RESTAURANT



Compliments from . . .

LUIS RESTAURANT

2 Sherwood Court, Perth

For an Intimacy of Dining in a quiet, Personalised Man-
ner, LUIS offers you this atmosphere with French Cuisine
—We serve the finest selection of Australian, French and
German Wines and Beers — Open 11 a.m. to 12 Midnight
Air Conditioned Premises — Open 11 a.m. to 12 Midnight

FOR RESERVATIONS — PHONE: 21-5456

over the future use of the sea. Consequently, the major techno-
logical effort on the part of the
allied navies was directed towards
anti-submarine warfare and air de-
fence.

But slowly a balance was
achieved so that it was possible to
mount the greatest of all sea in-
vasions on Normandy Beach and
to support it until victory was
achieved in Europe. In the other
hemisphere, airpower at Nagasaki
and Hiroshima sealed a victory that
had already been assured at sea.

The marriage of science and en-
gineering played a vital role in the
two major developments in World
War II — the nuclear weapon and
modern aircraft.

After the war, nuclear power and
hydrodynamics opened the way for
a revolutionary seacraft — the nu-
clear submarine. It brought the
first of the new dimensions of sea
power — time below the surface
of the sea, limited only by man's
endurance.

The ballistic missile opened the
second of the new dimensions of
sea power — distance for the pro-
jection of power from the sea.

Still another dimension awaits
development. This is depth and
the capability to operate at or near
the bottom of the major oceans of
the world.

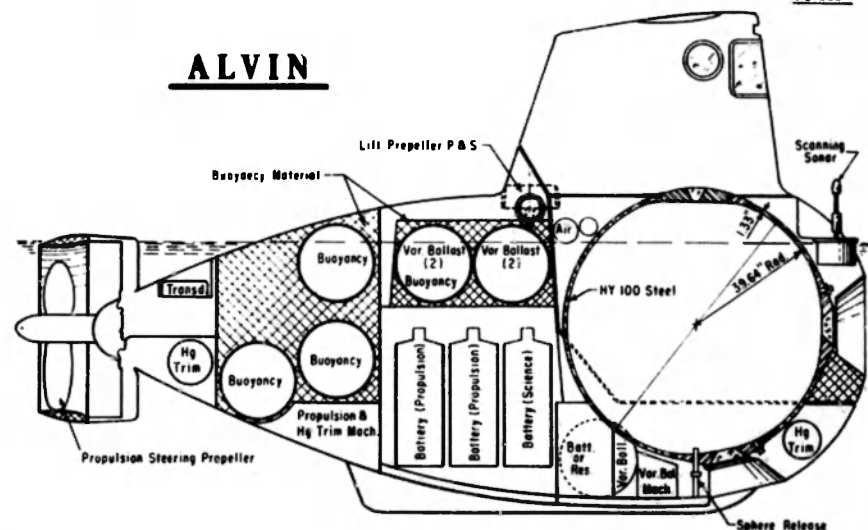
Developments in materials, con-
trol of structure, habitability, power
sources and the application of

knowledge to new design assure
that this capability is only a show
distance away.

Pre-eminent among the technical
problems involved in deep-ocean
capability are those relating to hull
structure and hull materials. In
the past, hull structure was limited
by fabricating techniques, and by
man's ability to determine stress
and buckling patterns. The rib-
stiffened cylinder with spherical end
caps and the sphere were the pre-
dominant shapes.

Recently, in the manufacture of
missile motor cases, the U.S. aero-
space industry demonstrated the
capability of precisely machining
large structures of almost arbitrary
contour and thickness. Structural

ALVIN



CHARACTERISTICS

Length Overall	22'
Beam	7'-6"
Operating Depth	6,000 Feet
Maximum Speed	4 Knots
Endurance	2.5 Knots For 10 Hours
Submerged Displacement	12 Tons (long)

INSIDE OF THE ALVIN -- This drawing shows the interior design of the
U. S. naval research submarine Alvin, named after its creator, Dr. Allyn
C. Vine.

Best wishes from the Management
and Staff of ...

Basil Berry

☆ MEAT SPECIALIST

77 MAIN ROAD
MOONAH, Tas.

Telephone Hobart, Tas.
8-1519

Suppliers to the Royal Australian Navy

URETHANE FOAM CO. PTY. LTD.

AND THEIR ASSOCIATES
MORRIS PLASTIC PTY. LTD.

LLOYDS APPROVED BUOYANCY
SUPPLIED OR INSTALLED UNSINKABLE
MOORING BUOYS — FISHING FLOATS

5A RUNDLE ST., KENT TOWN, S.A.
PHONE 63-4481

Best wishes to all members from ...

BAILYS GIFT STORE

Parkholme Shopping Centre,
Parkholme, South Australia

For a Comprehensive Range of Crockery
Glassware — Kitchenware — Toys, also
An Exclusive Range of High Class Jewellery

Phone Your Enquiries to Morris Baily at
76-5495

ALF MAJOR (ex 12th Royal Lancers) of the FIELDS SERVICE STATION

Wishes the many members of the Navy
League the best of luck and reminds you to
call in at ...

PEACHEY ROAD, ELIZABETH FIELDS, S.A.

For Your next Mobil Tune-up — Wheel
Alignment — Brake Relines Etc. or
Phone your appointment to Alf at 54-6216
Dont Forget We Have Tyres, Batteries
and All Accessories

BODEN'S BOAT DESIGNS

3 RAWSON PLACE, SYDNEY — 211-0781

We have the best range of Stock Plans in
Australia—remember that apart from our
own wonderful selection, we also stock
overseas designs—HARTLEY and the ever
popular YACHTING MONTHLY.
Get your copy of our NEW DESIGN book
from your newsagent or bookseller. Priced
\$1.00 or direct from here.

STOCK PLANS CENTRE

3 RAWSON PLACE, SYDNEY — 211-0781

From the Management and Staff of ...

CRISP & GUNN CO-OP. LTD.

79 MELVILLE STREET
HOBART

Phone 3-3711

RACKING YARD & PROCESSING
MILL

Mornington Rd., Warrane, Tas.

GEEVESTON BRANCH, DOVER ROAD

GEEVESTON—Phone Geeveston 367
Suppliers to the Australian Government

designers have also developed techniques for analysing new shapes. Application of the theories in practice may soon permit structures of any volume.

The range of materials also is increasing. High-strength steels have been demonstrated in vehicles like the Woods Hole Oceanographic vehicle "Alvin" and will soon be demonstrated in the Westinghouse "Deep Star". Aluminium has been exploited in the "Aluminaut". We may soon see titanium used in vehicles now under construction by the U.S. Navy.

Even more advanced materials are being considered. For example, Dr. H. A. Perry, U.S. Naval Ordnance Laboratory physicist, has awakened interest in solid glass as a structural material for large pressure hulls.

Techniques for control are also required before practical vehicles to exploit the ocean bottom can be considered feasible.

The "helicopter of the sea" has found its embodiment in the Hazelton tandem propeller which has been successfully tested in a model scale. These double rings of cylindrically varied vanes permit at low speed the application of force and movement in all degrees of freedom.

Important design modifications of this concept have been accomplished by the Sperry Rand Corporation. The feasibility of this technique seems assured. Competitive approaches may be found in the application of fluid jet amplifiers, but new scientific analyses and analytical techniques are needed.

Power sources and sources of gas for buoyancy are a third major area of deep-ocean technology. The nuclear reactor has demonstrated its importance in military vehicles. The development of non-military nuclear reactors for deep-ocean use will also provide power that does not require surface oxygen. Interim sources of power are already indicated by the fuel cell, the isotope power source and advanced batteries.

Other problems, including life-support sensors, are required to protect man in the sea. But the most challenging combination of science and engineering may be found in the effort to increase the depth at

which unprotected man may operate. Chief element in this regard is understanding an astonishing variety of physiological, hydrobiological and biochemical problems.

Already it is clear that "air" is a dangerous gas at deep depth, and that some combination of oxygen and helium, or oxygen and other inert gas, is required.

A more complete understanding of the effect of oxygen on man's metabolic and neurological efficiency is vital. The study of the physiological effect of hydrogen is of equal importance.

Finally, a full understanding of the process of gas solution and bubble formation in tissues and the circulatory system is needed to assess the dangers involved in decompression and recompression in moving from one depth to another.

The nuclear submarine and the ballistic missile have opened a dimension for sea power that will remain until some new threat to freedom of the seas develops.

Scientists have yet to envision what form this threat will take. However, the control or ownership of ocean bottoms is one direction for possible change that will not be neglected.

Surely, the historical, cultural and scientific confluence which has been instrumental in evolving man from a river society to an inland sea society; from an inland sea society to an oceanic society; and from an oceanic society to a world society again will appear as man expands his boundaries to space and the undersea — the full utilisation of the world around him and beneath him.

By courtesy of the Navy.



"It doesn't seem possible to associate the two things now, does it?"

Best wishes from ...

Anglers Arms Hotel

(Mine Hostess—Mrs. Thel. Fountain)

The Finest Chilled XXXX On The Coast
Relaxing Tropical Lounge

Businessmen's and Family Luncheon
12-2 Daily

TABU ROOM Open Nightly 6.30-8.30 p.m.
A La Carte

50 QUEEN STREET
SOUTHPORT, QLD.

Phone 22256

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. LIMITED

359-369 Queen Street, Brisbane
Phoenix House, 32-34 Bridge St., Sydney
454-456 Collins Street, Melbourne
198 North Terrace, Adelaide

Agents in All Principal Ports, and Tasmania

HAWKER de HAVILLAND (Australia) Pty. Ltd.

Aircraft Overhaul Contractor to the Royal
Australian Navy extends best wishes to all
R.A.N. Establishments

Aviation Divisions, Specialists in:

- Aviation and Marine Electronics, Radio, Instruments and Electrical Overhaul
- Major Engine and Airframe Manufacture Overhauls and Servicing
- Aircraft Engineering and Design
- Marine Design and Manufacture

MILPERRA ROAD, BANKSTOWN

PHONE 77-0111

After Hours 77-0611

SERVICE IN LINER COMMEMORATES LOSS OF AUSTRALIAN CRUISER IN 1942

The loss of the Australian cruiser H.M.A.S. CANBERRA at Savo Island was commemorated at a brief service held at sea on board the P & O liner "CANBERRA" early on Saturday, October 30, 1966, as the ship was passing the position where the cruiser was lost during World War II.

In bright sunlight soon after dawn, the 45,000 ton liner reduced speed two miles off Savo Island while the service took place. It was attended by many hundreds of passengers and crew.

Five wreaths in memory of those lost in the sinking of H.M.A.S. CANBERRA and three U.S. Navy cruisers — the U.S.S. "VINCENNES", "QUINCY" and "ASTORIA"—were cast into the sea.

In one of the darkest episodes of World War II, the four cruisers were sunk on the nights of August 8, 1942 with the loss of over 1,000 men, including 85 from H.M.A.S. CANBERRA.

The first wreath, from the H.M.A.S. CANBERRA Survivors'

Association, was cast by the Association's President, Mr. H. J. Alford. Other wreaths from the Australian Commonwealth Naval Board, the United States Navy, the city of Canberra (A.C.T.) and P & O were also cast on the sea.

In a brief address at the service, the Captain of "CANBERRA", Captain E. G. H. Riddelsdell, R.D., R.N.R. (Retd.), said, "We are here to commemorate the combined Australian and United States' action which took place near this spot 24 years ago. We remember before God the men of that task group who were lost and especially those from our namesake ship H.M.A.S. CANBERRA."

At the end of the service, the liner resumed passage, bound for Far East ports as part of a 28-day cruise from Australia.



Captain E. G. H. Riddelsdell, R.D., R.N.R. (Retd.), captain of the P & O liner "Canberra", casts the United States Navy wreath at the H.M.A.S. CANBERRA remembrance service held off Savo Island.

The Navy League Says 'Thank You'

The New South Wales Division of the Navy League of Australia acknowledges with grateful thanks the generous donations made by the companies mentioned hereunder:—

W. Arnott Pty. Ltd.
Australian Iron & Steel
Commonwealth Bank of Australia
Birt & Co. Pty. Ltd.
C.S.R.
Gilchrist Watt & Sanderson
Burns Philp & Co. Pty. Ltd.
David Jones Ltd.
J. Fenwick & Co. Pty. Ltd.
Swire & Yuill Pty. Ltd.
Johnson & Johnson
Cockatoo Docks & Engineering Co. Ltd.
Kodak Australasia Ltd.
Globe Worsted Mills Ltd.
Mercantile Mutual Insurance
Port Line Ltd.
Felt & Textiles of Australia
National Bank of Australia
I.C.I. Australia & N.Z. Ltd.
W. E. Smith Ltd.
Lysaght Bros. & Co. Pty. Ltd.
Commercial Banking Co.

ALL SHIPS AND NAVAL
PERSONNEL
YOUR PERSONAL DRY CLEANERS

ARE

WILLIAMSTOWN DRY CLEANERS

19 DOUGLAS PARADE
WILLIAMSTOWN

Before a Run and After a Run
see and ask for

JOHN LIPCHEN

65-5637

GIBBS BRIGHT & Co. Pty. Ltd.

MELBOURNE & PORTLAND

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

AGENTS FOR:

SHIPPING: Port Line Ltd., M.A.N.Z. Line
(Aust.) Pty. Ltd., The East Asiatic Co. Ltd.,
Steamship Company Orient Ltd.

MANAGING AGENTS FOR: Australian
Pastoral Co. Ltd., F.F.5. Stud Cattle Co.
Ltd., The Galway Down Pastoral Co. Pty.
Ltd.

TIMBER DEPARTMENT: Australian and
Imported Timbers: Plywoods, Veneers,
Panelboard, Cane-ite, Hardboard, etc.

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

Telephone: 67-9281

SEA CADET CORPS NEWS

(VICTORIAN DIVISION)

T.S. VOYAGER (WILLIAMSTOWN) PRIZE GIVING NIGHT

The Senior Officer of the Victorian Division of the A.S.C.C. (Lt. Cdr. F. G. Evans, V.R.D., R.A.N.V.R.) presented prizes to a number of Sea Cadets at a "break-up" party held in T.S. "VOYAGER" on 9th December, 1966.

In the course of his address, Lt. Cdr. Evans remarked on the large number of parents and friends of Cadets present. He said:

"As I move about the country on business and Sea Cadet affairs, I never cease to be surprised by the lack of interest shown by many parents in the activities of their offspring; this applies to their work as well as social activities.

In recent months there has been a great deal of criticism of the behaviour of young people: It is often stated that they have more money and more spare time than did their parents — which is probably true — and that there is not enough to interest the youngsters and occupy

their idle moments; this is nonsense.

Never before have there been so many young people's organisations, catering for practically every taste. The Sea Cadet Corps is but one organisation, existing for those whose interest lies in the sea and nautical activities. It is not, however, OUR job to take the place of parents. A boy's life is formed in his home and with his family, and we can only help by doing something to further his spare time interests.

I have always been grateful to my own parents for the interest they took in my activities as a boy — not the least for prodding me into fulfilling engagements on cold, wet nights, when it would have been easier and much more comfortable to stay at home, and for reviving my flagging interest from time to time.

Your presence here tonight shows that you have this same interest, and I am quite sure that your sons

will be the better for it, and so will this Unit."

SPECIAL AWARDS

Following the presentation of the Unit prizes, the Senior Officer made two special awards to Cadets R. J. Rowe and F. Weimper on behalf of the Navy League, Victorian Division.

In March, 1966, Cadets Rowe and Wimper raised the alarm and subsequently helped in the rescue of a man who had fallen into Hobsons Bay, and who quite probably would have drowned had his plight not been noticed by the two Cadets.

In the course of the rescue, Aircraftman G. P. Culbert, a member of the crew of an R.A.A.F. crash boat based at Williamstown, jumped partly clothed into the water whilst another crew member, Aircraftman W. A. D. Trow, summoned further assistance.

The two Aircraftmen and two Sea Cadets showed considerable initiative and presence of mind.

Australian Hydrographic Services Pty. Ltd.

127/131 MACQUARIE ST.
SYDNEY

Phone: 27-9016

Cables: Hydraustral Sydney

Specialists in all forms of Hydrographic Surveys. Equipped with the very latest instruments available from manufacturers throughout the world, including Europe, U.S.A., South Africa, Australia and Japan.

Instrumentation includes precision echo sounders, deep sea sounders, horizontal automatic sweeping, sonar, tellurometer, hydrodist, Deco Hi-Fix, Hastings Raydist. A full service of sub-sea studies is provided, using Kelvin Hughes Stratification Recorder and Hunter Hydrosonde with Bolt Compressed Air Gun.

One ship fitted out for undersea mineral research with air-conditioned living space, laboratory control room and chart room — equipped with high speed winch, photograb, deep corers, dredge samplers, closed circuit television, electronic position finding, radar, photo processing, autopilot and bottom profiling gear. Currently employed on undersea Phosphate Research.

Specially designed stabilised craft fitted with narrow beam echo sounder for measurement of silt in dams.

A long list of satisfied clients, including the Commonwealth Government.

Sydney Slipway & Engineering Co.

PTY. LTD.

123 DARLING STREET, BALMAIN
N.S.W.

MARINE AND GENERAL ENGINEERS

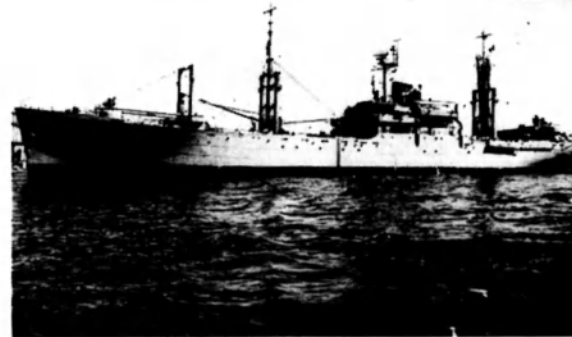
- Slipway Capacity up to 850 tons
- Fabrications up to 20 tons
- Pressure Vessels
- Manufacturing of the Victor Oily Water Separators
- Fitting and Machining of all Types
- Certified Testing of Cargo Blocks
- Contractors to the Army and Navy Departments

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

Peruvian Transport Visits Sydney

The first Peruvian Naval vessel to visit Australian waters arrived in Sydney on 18th February. INDEPENDENCIA, a former U.S. Attack Cargo ship, built in 1941 and transferred to Peru on 20th July, 1963, under the Military Aid Programme, is the training ship for the Peruvian Naval Academy.

The purpose of the visit was to commemorate the 400th anniversary of the voyage in 1567 of the Peruvian explorer Mendana, who discovered islands around Australia and the Solomons, and to train her 103 cadet midshipmen.



The training ship for the Peruvian Naval Academy — "Independencia"

ANCHORAGE BUTCHERS PTY. LTD.

Supplies of Quality Meats to
HER MAJESTY'S FORCES
Wholesale Butchers and Exporters to
various Countries

168 ST. GEORGES TERRACE
PERTH

Telephone: 21-2434

J. & W. Bateman Limited

848 HAY STREET, PERTH

Phone: 21-9521

MOUATT STREET, FREMANTLE
Phone: 5-1115

ALBANY HIGHWAY, VICTORIA PARK
Phone: 6-2988

Specialists in Marine Fittings for all types
and sizes of sail and power craft

SMIT'S SPlicing SERVICE

STUBBS TERRACE
SHENTON PARK, W.A.

The Wire Rope Specialists

- △ Sisal Rope and Cordage for all purposes
- △ Splicing of all descriptions

Work Guaranteed — Free Quotes

Phone: 8-4363

For All Information

With best wishes to the Navy League
from

AERO FLOUR Pty. Ltd.

ATHELSTAN STREET
COTTESLOE, W.A.

Manufacturers of Famous
AERO SELF RAISING FLOUR
DIGESTIVE MEAL, CORN FLOUR,
CUSTARDS and COLONIAL BREAD
CRUMBS

3-4631

SEA CADET CORPS NEWS

NEW SOUTH WALES DIVISION

Report of Activities and Training Undertaken by the New South Wales Division for the Quarter Ending 31st December, 1966.

No periods of continuous training were carried out afloat or in shore establishments during the quarter under review, but Harbour and Weekend training took place in the following ships and establishments:—

H.M.A.S. VENDETTA — 30th
Sept.-2nd Oct.

H.M.A.S. PENGUIN — 7th Oct.-
9th Oct.

H.M.A.S. WATSON — 7th Oct.-
9th Oct.

H.M.A.S. MELBOURNE — 28th
Oct.-30th Oct.

H.M.A.S. MELBOURNE — 4th
Nov.-6th Nov.

H.M.A.S. ALBATROSS — 25th
Nov.-27th Nov.

H.M.A.S. VAMPIRE — 25th Nov.-
27th Nov.

H.M.A.S. PENGUIN — 9th Dec.-
11th Dec.

Examinations for Higher Rank were conducted in H.M.A.S. Penguin on 10th December, and the percentage of passes reflected the high standard achieved by the majority of Cadets, which was most gratifying.

L. MACKAY-CRUISE,
Lieut.-Commander R.A.N.R.
Senior Officer.

Letter From A Seadog

A letter, paying high tribute to the training ship "Tobruk" was recently published in the "Newcastle Herald" newspaper. Knowing of readers' interest in the Corps, the letter is reproduced below:—

VIEW FROM THE BRIDGE

Reminiscences of the ports of the world, their hospitality and friendliness, are the chief pastime at sea and to the British seaman the Australian, New Zealand, British Columbian and the Natal ports of South Africa are the favourites. Often I have heard of Newcastle, but it has taken me 47 years of seafaring to get here, and a delightful experience it has been.

Newcastle understands seamen, despite the dubious antics of the more boisterous of my shipmates. Thus, you have one of the best

Flying Angel Missions, under its chaplain, Rev. A. Dalling, it has been my pleasure to visit. Close alongside it is the Apostleship of the Sea Missions, under Father Bernard Kennedy. The co-operation of these two Christian gentlemen working for the good of seamen is a pleasure to observe, yet not surprising, for Australia leads the world in the ecumenical field, the most important of all our human endeavours in these dangerous times.

As a former Royal Naval Reserve Officer, I am often asked to give talks to local Sea Cadet Corps units throughout our Commonwealth, and I can definitely state that your T.S. "Tobruk" is the smartest unit I have visited—and, to use a naval expression, I am

not flanneling. I can congratulate the Commanding Officer and his staff on a splendid achievement.

One gets so irritated to read the moaning letters of some of our British immigrants in the newspapers, but Australians are intelligent enough to realise that these lesser breeds would raise a stink even in Utopia, and on balance they are much in the minority.

I shall soon be retiring, but if ever I hear of a Novocastrian passing through our little town of Bideford, in North Devon, I shall be most disappointed if he has not rung me at Bideford 3804. There is always a cask of Devon cider under the stairs.—(Captain) S. GORRELL, m.v. Sugar Exporter, Port of Newcastle.

SEA CADET CORPS (QUEENSLAND DIVISION) NEWS

BRISBANE SEA CADETS WIN TROPHY

A Brisbane Sea Cadet Unit has been judged the most efficient of the 37 units in Australia.

The Training Ship "PALUMA", with headquarters at Stafford, Brisbane, will be awarded a trophy presented annually by the Navy League of Australia. The Naval

Board has signalled its congratulations to the unit, which is under the command of Acting Sea Cadet Lieutenant Commander F. T. G. Dixon.

Award of the annual efficiency trophy is made after an inspection of the most efficient Sea Cadet unit

in each State by the Director of Naval Reserves.

The Sea Cadet Corps is run jointly by the Navy League and the Royal Australian Navy. The cadets are aged between 14 and 18.

New South Wales has eight Sea Cadet units, Victoria 8, Queensland 7, Tasmania 6, Western Australia 4, South Australia 2 and the A.C.T. and Northern Territory one each.

ROBY & CO. PTY. LTD.

Specialists in

- ☆ Sheet Metal Fabrication
- ☆ Ventilation and Duct Work
- ☆ Electrical Switchboard Cabinets
- ☆ Structural Metalwork—Stainless Steel, Etc.

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

Phone: 50-2154

Boat Building?

See . . .



Everything a boat
builder needs



- ☆ MARINE PLYS
- ☆ SELECTED BOAT
BUILDING TIMBERS
- ☆ MARINE PAINTS and
VARNISHES

49 Charles Street, Perth
Phone: 28-0121 & Branches

Best Wishes from . . .

STIRLING ELECTRICS

**73 REDWOOD CRESCENT
MELVILLE, W.A.**

Telephone 30-3291

Specialising in
MARINE and INDUSTRIAL
INSTALLATIONS
REPAIRS and MAINTENANCE

Best Wishes to the "Navy League"
from

B. M. BAHEN PTY. LTD.

Woolbrokers

**9 PAKENHAM STREET
FREMANTLE, W.A.**

Phone: 5-4571

JOIN THE AUSTRALIAN SEA CADET CORPS

If you are between the ages of 13 and 18 years

The Australian Sea Cadet Corps is a voluntary organisation administered by the Commonwealth Naval Board and The Navy League of Australia.

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

Uniforms are supplied free of charge.

Cadets are not required to undergo any medical examination and are fully insured against accident while on duty.

Parades are held on Saturday afternoons and certain Units hold an additional parade one night a week.

The interesting syllabus of training covers a wide sphere and includes seamanship, handling of boats under sail and power, navigation, physical training, rifle shooting, signalling, splicing of wire and ropes.

general sporting activities and other varied subjects.

Instructional camps are arranged for Sea Cadets in Naval Establishments, and they are also given opportunities, whenever possible, to undertake training at sea in ships of the Royal Australian Navy.

Cadets, if considering a sea career, are given every assistance to join the Royal Australian Navy, the Mercantile Marine or the Royal Australian Naval Reserve, but there is no compulsion to join these Services.

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

Senior Officers, Australian Sea Cadet Corps

NEW SOUTH WALES: "El Abrigo", 4 Rangers Ave., Cremorne.

QUEENSLAND: C/- Box 376E, G.P.O., Brisbane.

SOUTH AUSTRALIA: C/- 30 Pirie Street, Adelaide.

TASMANIA: C/- 11 Quorn Street, Sandy Bay, Hobart.

VICTORIA: C/- Room 8, 8th floor, 528 Collins St., Melbourne, C.I.

WESTERN AUSTRALIA: C/- 182 Coode St., Como.

AUSTRALIAN CAPITAL TERRITORY: Industry House, National Circuit, Barton.

NORTHERN TERRITORY: Box 444, P.O., Darwin.

TO: The Senior Officer.

Australian Sea Cadet Corps

I am interested in joining the Australian Sea Cadet Corps and would be pleased to receive further information.

NAME

ADDRESS PHONE NO.

STATE OR TERRITORY AGE

(Please print clearly)

Please address your envelope to the Senior Officer in your State or Territory—see list of addresses above.

We Specialise in the Pallet & Platform
Construction and Hiring

SEAMAN & CO. PTY. LTD.

80 WEBSTER ROAD
STAFFORD, QLD.

Prompt and Reliable Service is Our
Motto

No Job Too Big or Too Small

RING 56-6925

For Personalised Attention

TUTT BRYANT (Nth. Qld.) PTY. LTD.

Suppliers of Equipment for National
Development

Allis Chalmers — Barber Greene — A.C.E.
General Motors Diesel Engines — Rex
Pumps — Pacific Products — Fairmont
Railway Equipment
Stocking at Townsville a Wide Range of
Trench Hoes and Other Construction
Equipment

Spare Parts & Specialised Service Facilities

27 NATHAN STREET
TOWNSVILLE, QLD.

Phone 9-1001

P.O. Box 331

Best regards to all Naval Personnel from

The Hotel Allen

FRIENDLY SERVICE

Your Favourite Beer at Its Coldest Best!

AIR-CONDITIONED, SELF-CONTAINED
ACCOMMODATION UNITS

Excellent Cuisine

GREGORY STREET
NORTH WARD

For Reservations Phone Townsville
(Queensland) 5656

Regards to the Navy from . . .

Paddy Stewart at the

HOTEL PERLE

BURGESS STREET
CALOUNDRA, QLD.

Overlooking King's Beach — Gold Top
Beer Served Cold, at its Refreshing Best
Best Brands of Wines and Spirits
Stocked Always

A FOUR STAR RATING HOTEL

For Reservations Phone Caloundra 369

U.S. Coast Guard Icebreaker Visits Sydney

The United States Coast Guard Icebreaker (WAGB) of the "Wind class", EASTWIND, under the command of Captain William M. Benkert, U.S.C.G., visited Sydney from 1st-5th November, 1966. The purpose of her visit was for rest and recreation prior to departure for Antarctica for the Scientific Research Programme OPERATION DEEPFREEZE, 1967.

Officers, enlisted personnel and civilian scientists were warmly welcomed and entertained by the people of New South Wales.

EASTWIND (see photograph) was launched on 6th February, 1943. Displacing 3,500 tons standard displacement and 6,515 tons full load, she is 269 feet in overall length, and is powered by six diesel-electrics, turning two shafts and providing her with a maximum speed of 16 knots.



The Icebreaker "Eastwind", of the United States Coast Guard

She is armed with two 3-inch guns mounted forward and carries two helicopters, either the H-19 or H-52 type.

The double hull is of entirely welded construction and the plating is exceptionally heavy, being designed to crush ice 9 feet thick.

SUBSCRIPTION FORM

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

I enclose \$2.40 for Annual Subscription to "The Navy",
post free.

Name

Street

Suburb State

Date

PLEASE PRINT CLEARLY

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

Subscriptions commence in January of each year, at which
time a subscription reminder notice is forwarded to current sub-
scribers.

Those commencing subscriptions to "The Navy" magazine in the
quarter commencing APRIL, should remit \$1.80, JULY, \$1.20 and
OCTOBER, 60c.

Pieces of Eight!

Skin divers in search of sunken treasure now have available what is claimed to be the first popular-priced, underwater metal detector to aid their quests. Developed by Radiac Co., of Center Moriches N.Y., the pancake-shaped device is called the NEMO. It is electronically operated, pressurised for underwater use and registers the presence of any metal (base or fine) on an easily read dial. In addition to its underwater use, the NEMO is effective on land and, because of its compact size, is practical for investigating tight places such as shafts, tunnels, crevices and crawl places.

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

Wishing the Navy every success from . . .

ROBIN HOOD INN BLACKTOWN, N.S.W.

(Popular Mine Host: John Lazanas)

- ☆ Icy Cold Tooth's Beer at its Best
 - ☆ Popular Snack Bar
- Phone: 822-0205

Wishing The Navy every success from . . .

OFF SHORE NAVIGATION INC.

159 BUNNERONG ROAD
KINGSFORD, N.S.W.



OFF-SHORE OIL EXPLORATION and
RADIO LOCATION SERVICES

Phone: 34-7251

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
Phone: 82-0661

Maritime Maintenance Pty. Ltd.

For—

- ☆ Rust Elimination
- ☆ Tank Cleaning
- ☆ Flame Scaling
- ☆ Cleaning and Painting and all forms
of Ships' Husbandry and Service

Consult—

MARITIME MAINTENANCE PTY. LTD.

Shell House, Sydney

Phone: 29-1488 (Day), 37-8106 (Night)

AT YOUR SERVICE FOR YOUR HOLIDAY REQUIREMENTS

Information & Bookings Call or Telephone

HOWARD SMITH TRAVEL CENTRES

SYDNEY: 289 George St. 27-5611
MELBOURNE: 522 Collins St. 62-3711
PORT ADELAIDE: 3 Todd St. 4-1461
FREMANTLE: 1 Mouatt St. 5-1071
NEWCASTLE: 16 Watt St. 2-4711
CAIRNS: 18 Abbott St. 2115/6
BALLARAT: Cnr. Lydlard & Mair Sts. 2-5462

AIR-SEA RESCUE CRAFT FOR THE R.A.N.

A luxury Bertram cruiser is a joy to any sailor, particularly if he is from the Royal Australian Navy.

It takes him farther away from the age when he had to polish endless brasswork and scrub down decks.

All a man has to do to keep a fibre-glass Bertram clean is give it a wipe over.

The Navy has acquired a new 38-foot Bertram for around \$70,000.

The freighter, City of Birkenhead, landed the Bertram in Sydney last November as deck cargo from Savannah, Georgia.

A twin-screw cruiser with a top speed in excess of 30 knots, she has two 280 hp V8 GM diesel and sleeping quarters for six.

When the Navy fits her out the cruiser will be put through exhaustive sea tests for rescue work with helicopters off Jervis Bay.

The Navy wants the cruiser to take over from the 70 foot vessels now in use.

These are World War II craft and are powered by 150 hp twin Hall-Scott engines.

The Bertram has good sea-keeping abilities and a low stern over which it would be relatively easy to lift a "downed" pilot from the sea.

Please Support the Red Cross

W.A.'s Largest
Range of

SHIPS CHANDLERY

—and no one can better it!
Come in . . . browse around
you'll be convinced!

Tropical Traders Ltd.
96 Queen Victoria Street
Fremantle, W.A.

Branches: Albany & Geraldton

Compliments to The Navy from . . .

KINGS CROSS REX HOTEL

EXCELLENT CUISINE

Dinner Dance and Entertainment
Nightly



MACLEAY STREET
POTTS POINT, N.S.W.

For Reservations Phone 35-3341

British Warship Strength

The Defence Estimates 1966-67 contains the following table showing the current warship strength of the Royal Navy.

Absent from the listing are almost 40 survey and fleet support ships (depot, maintenance, repair, replenishment store ships, and tankers) now in service. Also absent are the recently scrapped headquarters ship, two tank landing ships, and one tank landing craft which helped form the Royal Navy's Amphibious Warfare Squadron, long based in the Middle East. They are being replaced by the two new assault ships, HMS "Fearless" and HMS "Intrepid" (LSD/LPD-type ships). Reportedly the latter has been delayed.

In addition to the ships shown in the table, four frigates and one fleet submarine are on order but have not yet been laid down.

Three of the fleet submarines listed in the table (one of which is operational) and all four Polaris missile submarines are nuclear powered.

Type	Operational, Preparing for Service	Trials and Training	Under Construc.	Reserve or Undergoing Long Refit Conversion
Aircraft Carriers	4			1
Commando Ships	2			
Assault Ships	2			
Cruisers	1			
Guided Missile Destroyers	6			4
Other Destroyers	9		2	
General Purpose Frigates	14	3	7	
Anti-Aircraft Frigates	3			1
Aircraft Direction Frigates	3			1
Antisubmarine Frigates	15	15		12
Ice Patrol Ship	1			
Fleet Submarines	34	1	2	10
Polaris Submarines			4	
Coastal Minesweepers	45	13		33
Inshore Minesweepers	1	2		3

POWER FROM THE TIDES

Many attempts have been made in the past to promote schemes for using the energy of the tides but all of them have failed because the power produced cost too much. Now, interest is quickening again. In Britain, new ideas are showing that economical power from the tides may be possible.

Earlier schemes put forward in Britain include the Severn Barrage, first promoted in 1925. More recent studies have been made on the Bristol Channel site. The latest proposal is for a much more ambitious scheme than the old Severn Barrage. The site now proposed is between Cardiff and Weston-super-Mare through the island of Flat-holm. This barrage would impound an area of nearly 200 square miles, would provide a new road link between S.W. England and Wales,

would improve navigation into three important ports — Cardiff, Newport and Avonmouth — and would generate about 13,000 million units of electricity annually. Present total annual consumption in the United Kingdom is about 170,000 million units.

Recent British work on tidal energy has been directed to exploiting new advances in hydro-electric machinery and new civil engineering techniques, in the construction of estuary barrages. British manufacturers have recently completed the installation of the first high head reversible pump turbines at the Cruachan scheme in Scotland, opened by the Queen last October. The same machine operates in the double role of motor pump, using supplied off-peak electricity to pump water to an elevated

reservoir, and turbo-generator, generating electricity from this same water falling to its former lower level. In this way "cheap" off-peak electricity is converted to valuable peak electricity.

The French have built the first operational tidal power station on the estuary of the Rance, on the Brittany coast. This is an imaginative and technically advanced scheme and power from the station will begin to flow this year. The Russians are presently constructing the world's second barrage scheme, and the Canadians are drilling the sea bed of Minas Bay in the Bay of Fundy. Britain has two or three of the best tidal power sites in the world, a natural resource which could make a big contribution to power generation.

Green Island

LITTLE OVER AN HOUR FROM CAIRNS, N.Q.

The Top Island on The Great Barrier Reef



- Excellent Accommodation
Moderate Tariff
- Fully Licensed
- Attractions Galore
- Swimming in Crystal
Clear Water
- For The Holiday of
A Lifetime
- Booking Any Recognised
Travel Agent

YOU CAN BUY QUALITY PAINTS DIRECT from



Buy Brolite guaranteed quality paints, enamels, varnishes and all painting requisites direct from Brolite's factory sales centre.

Free advisory service, home delivery of paint is all yours. Call, write or phone for a representative to call with colour cards.

BROLITE SUPER GLOSS
Synthetic interior and exterior paint

BROLITE DURA-FLAT
Matt finish interior and exterior paint.

BROLITE GLIDE
Plastic emulsion paint—interior or exterior use.

BROLITE V-274 POLYTHANE CLEAR
For doors, floors, furniture and all outdoor uses. One pack — needs no catalyst.

BROLITE YACHT ENAMELS
Varnishes, Anti-Fouling Paint, Deck Paint.

BROLITE PAINT SALES CENTRE

RALPH & SHIRLEY STREETS, ALEXANDRIA
(just off Botany Rd., 200 yards from Gardeners Rd.)

Phone: 67 2524