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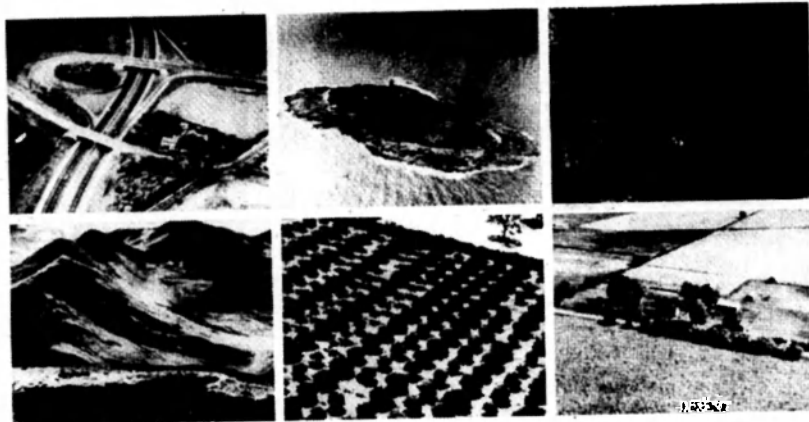
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FEBRUARY-MARCH-APRIL, 1975 APR 1975
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The magazine of the Navy League of Australia
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Vol 37

FEBRUARY-MARCH-APRIL, 1975

No 1

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PLUS SUMRY STORIES AND PHOTOGRAPHS

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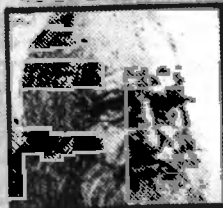
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A SUBMARINE DETERRENT FOR THE RAN?

By: A. W. Grazzabrock, Federal Vice-President
of the Navy Laagaa



The Oberon class submarine HMAS ONSLOW.

A prominent journalist has recently advanced the theory that, on financial grounds, the Navy should abandon its role in the defence of trade and rely instead upon a deterrent force of submarines.

The argument contends that the Royal Australian Navy should construct a force of submarines so large that it would be able to paralyse the seaborne trade and/or coastal resources of any potential enemy. In these circumstances, a potential enemy would not dare to attack or bring pressure to bear upon our seaborne trade.

If the journalist's theory were correct, the Navy's strength in defence of trade should be allowed to wither away and financial resources devoted instead to the construction of a large force of submarines. This could be done com-

paratively cheaply — diesel electric submarines are not expensive per copy, although they have their tactical limitations.

Such a policy would put all our eggs in the deterrent basket.

The strategic theory behind this particular application of the deterrent concept rests upon a number of key factors:—

- Prior knowledge of an enemy's intention of attacking.
- Convincing an enemy of the effectiveness of our deterrent.

- Confirming the identity of an attacker.
- Any potential enemy being at least as dependent upon trade as is Australia.
- Our own submarines having the tactical ability required.
- Our deterrent being immune from neutralisation by Super Power action.

An examination of Australia's position with regard to these key factors shows that, whilst a submarine deterrent force could be effective in ideal circumstances, it would be extremely risky to put all our eggs in the deterrent basket.

Regarding Australia obtaining prior knowledge of a potential enemy's intention of attacking us, it is reasonable to conclude that there are good prospects of doing this. Only five regional powers now



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have the means to paralyse or seriously hinder Australia's trade — long range submarines, mines and, in one case, seaborne air. Australia must plan upon a sixth power having the means to apply substantial pressure against our trade by 1985. It should be fairly clear to Australia if any of these six powers were to develop the motive and will power to use the weapons they have.

A potential enemy must be convinced of the effectiveness of our deterrent. Apart from ensuring that a potential enemy is fully aware of our submarine strength, it could be difficult to convince him that the blow we could strike would be unacceptable to his country. Potential enemies are not always entirely logical in considering strategic alternatives open to them — they can make errors in making their decisions. An excellent regional example of this occurred in 1971, when Pakistan allowed herself to become embroiled in a war (with India) which she had no hope of winning.

It would be vital to identify the attacker. The problem of identifying the nationality of attacking submarines would be serious. If this type of pressure were applied to our trade, it could be months before the identity of the submarines was established. Until that time, we could not run the risk of launching our submarine deterrent force against a country which we were not certain was the attacker. During the time prior to the establishment of identity, intolerable damage could be done to our prosperity.

For our deterrent to be effective, any potential enemy would have to be at least as dependent upon trade as is Australia. If our deterrent could not hurt him much more than he could hurt us, our deterrent would not be effective. Of the five regional powers that now have the weapons to paralyse or seriously hinder our trade, four are less dependent upon seaborne trade than is Australia. The sixth power, armed with submarines, would not be dependent upon seaborne trade. A strong

Australian submarine force would not be an effective deterrent to live out of six potential regional enemies.

Our own submarines would have to have the tactical ability to apply the deterrent — there must be enough of them, and they must be available to outclass the defence. Undoubtedly, our OBERONS have the range and weapons to seriously hinder the maritime trade of any regional power — our submarines are a match individually for any regionally owned boats or escorts.

However, if any regional power were to acquire nuclear powered submarines (SSN) from a sponsoring super power, our OBERONS would be disadvantaged. There are reports that France is now considering supplying one regional power with SSNs. For obvious reasons, second-hand SSNs could be sold to regional powers at much shorter notice than we could construct SSNs with which to defend ourselves. Therefore, if Australia were to adopt a submarine deterrent strategy such a strategy would have to be based upon SSNs. These are extremely expensive in themselves and would involve in addition the development of an extremely expensive infrastructure (bases, training equipment, etc). The financial attractions of a submarine deterrent strategy would be eliminated.

Our deterrent would have to be immune from neutralisation by super power action. An Australian submarine deterrent would be useless if a potential regional attacker were able to obtain the necessary additional escorts from a sponsoring superpower. Clearly, this would be possible now and for the remainder of this century at least. Further, there is the possibility of our deterrent being neutralised by a super power applying commercial or diplomatic pressure on behalf of a mendicant regional power — "No

The French nuclear powered ballistic missile type submarine LE REDOUTABLE.



OUR COVER

LHA-1, first of five of the U.S. Navy's new general purpose amphibious assault ships. She is to be commissioned during March, 1975.

These vessels are being constructed by Ingalls Shipbuilding division of Litton Industries in Pascagoula, Mississippi.

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sales of (say) wheat if you use your submarine deterrent against (say) Ruritania".

Deterrents are effective only so long as the potential opponent is not in a position to strike at least an equally telling blow in return — that is, deterrents are effective until they are neutralised. The Western Democracies used their possession of a (superior) nuclear deterrent to run down their defence of trade force. Their grounds for so doing were that a Totalitarian attack upon Western trade would be so serious as to justify a nuclear response. The world's most powerful Totalitarian state has now developed a balancing nuclear warfare capability — the West's nuclear deterrent has been neutralised. The Democracies now find the Russians can paralyse Western trade because the West has insufficient defence of trade forces and their nuclear deterrent has been neutralised.

The principle of deterrent by submarine is not applicable in the defence of Australia — we are more vulnerable to attack by submarine upon our trade than are most regional powers. These powers have the ability to hurt us through trade more than we can hurt them. In these circumstances, Australia would be most unwise to abandon a defence of trade and rely totally upon deterrent by submarine.

Finally, once our defence of trade force had been abandoned, it could not be rebuilt within fifteen years. We would be in dire straits indeed if a regional power neutralised our deterrent.

(Readers may care to read the article in the Australian Financial Review of 2 January, 1975, entitled No Aircraft Carrier Diplomacy. Editor.)

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Nautical Notes from all Compass Points

By "Sonar"

FRANCE

CROTALE MISSILE FOR FRENCH SHIPS

The Crotale Missile, made by Thomson CSF and Matra for short-range land-defence against air attack, is to be installed in French frigates, corvettes and the new nuclear-powered helicopter-carrier now being planned. In the corvettes the system will replace one of the 100mm guns.

Crotale has a range of 8.5km and is guided by radio from the launching ship. It requires its own radar.

IRAN

IRAN TO BUY FRENCH FBPs

The Iranian Navy has ordered six fast patrol boats from Construction Meccanique de Normandie (CMN). The boats will displace 230 tons and will be 47m long. Maximum speed will be 35 knots and operational range 800 miles at 30 knots. Armament will consist of the ship-to-ship missile Exocet and two twin Oerlikon 35mm AA guns.

NETHERLANDS

A Netherlands Government contract, valued at about \$10.5m, has been placed with Westland for six Lynx helicopters to be used by the Royal Netherlands Navy for SAR, communications and training operations. Initial deliveries are due in 1976. The order includes spares and support equipment.

SOUTH AFRICA

NAVAL MODERNISATION PROGRAMME

On Friday, 7 February, 1975, Mr Pieter Botha, South African Minister

for Defence, announced that his country is to build up her fleet with fast missile carrying warships.

The new vessels are to be built at Durban and will be the beginning of an entire naval modernisation programme. Designed for the defence of South Africa's vast coastline, they are scheduled to be completed within two to three years.

Reports indicate that the new ships will be highly manoeuvrable, capable of deployment against surface vessels, will be fitted with the most modern guided missile systems and will be capable of operating at high speeds.

In collaboration with the French, the South Africans have also produced a surface-to-surface missile called Crotale — and intensive research in rocketry is being undertaken at a secret base in the Transvaal province.

UNITED KINGDOM

£25,000 CONTRACT TO EQUIP NEW HELICOPTER CARRIER, HMS INVINCIBLE

The EMI group has won a contract worth over £25,000 to design and supply a fully automatic fire detection system for the Royal Navy's new concept in helicopter carriers, the 16,000 tonne anti-submarine cruiser HMS INVINCIBLE. Based on sensitive smoke detectors, the 50-zone early warning alarm system will safeguard important areas throughout the warship which is due to enter service in the late 1970s, equipped with Sea King helicopters and perhaps Harrier V/STOL aircraft.

The contract was placed with the Minerva Marine Division of AFA-Minerva (EMI) Ltd. of Twickenham, Middlesex, by Vickers Limited. Shipbuilding Group which is building HMS INVINCIBLE at its Barrow-in-Furness yard. The Minerva Marine system was specified for the through-deck cruiser by the Ministry of Defence which has standardised on this type of fire detection equipment for the majority of the Royal Navy's ships.

Altogether, over 180 AFA-Minerva type 36 smoke detectors, located in special deck-head mountings, will be installed throughout HMS INVINCIBLE. Areas to be protected include all engine rooms, machinery spaces, naval stores, workshops, ammunition magazines and their peripheral compartments, and weapon handling areas.

The network of detectors will be divided into zones allocated to specific parts of the ship and linked to a comprehensive control console situated in the vessel's main damage control room. In the event of a fire emergency, the console will indicate in which zone detectors have operated, enabling damage control personnel to quickly identify the area affected.

Up to 60 zones of detectors can be monitored by the control equipment which has facilities for testing each individual smoke detector circuit.

BHC WINS SKIRT DESIGN CONTRACT

British Hovercraft Corporation has been awarded a subcontract from Textron's Bell Aerospace Company of New Orleans, Louisiana to support the design of the vitally important bow skirts for their 2000-ton Surface Effect Ship (2KSES).

Bell's contract from the United States Navy is to proceed with the design and development of major systems for the 2KSES and is valued at \$36 million.

PRINCE CHARLES TACKLES COMMANDO ASSAULT COURSE

Prince Charles, who is a serving Lieutenant with the Royal Navy, making a tree-to-tree rope walk at the Royal Marine training centre, Lympstone, Devon, southern England, where he tackled the tough assault course which forms part of the Royal Marines basic training.

The course also includes scaling climbing nets and vertical walls, rope swings and slides, a mile and a half (2.4km) cross country endurance run and a rigorous obstacle section which includes crawling through a partly submerged pipe.

Prince Charles, who recently passed-out as a helicopter pilot, is expected to join the commando ship HMS Hermea in March.

NUCLEAR-POWERED SUBMARINE LAUNCHED

HMS SUPERB, the ninth nuclear-powered Fleet submarine to be built for the Royal Navy, was launched at Barrow-in-Furness on Saturday, 30

November by Mrs David Williams, wife of Admiral David Williams, Chief of Naval Personnel and Second Sea Lord.

SUPERB, which is being built by Vickers Shipbuilding Group, is the third of the latest Swiftsure class, Vickers built her predecessors, Swiftsure and Sovereign, and five of the other six Fleet class submarines.

Superb will have a displacement of 4400 tons on the surface, with a length of 272 feet and a beam of 32.3 feet. Her maximum continuous underwater speed will be in excess of 20 knots, and she will have a totally-submerged endurance of several weeks.

NAVAL ENVIRONMENTAL MEDICAL RESEARCH AIDED BY SE LABS MULTI-CHANNEL EQUIPMENT

At the Royal Navy's Institute of Naval Medicine at Alverstoke near Gosport, a complete multi-channel monitoring and data acquisition system has been installed in the new environmental unit by SE Labs. EMI's instrumentation and measurement company.

The equipment, comprising an SE 5000A 14-channel FM data recording system, EMI 120 oscilloscope, SM 4000 EMMA system for ECG/EEG measurement, and an SEM 120, 8 channel oscilloscope with control unit, is being used to record biophysical measurements obtained by research into the effect on the human body of problems associated with closed environments.

The unit is an important new medical research facility, the focal point being an experimental chamber unique as a permanent installation. The chamber, having a volume of 12,000 cubic feet, can support 12 men in continuous isolation for long periods. It is fully equipped with sleeping facilities, a kitchen and toilet area with two showers. The central floor area can be divided into both working and recreational areas.

Access to the chamber is through an air lock. There are air-tight observation windows to allow the Royal Navy's medical team to observe subjects engaged in experiments.

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The unit makes possible the detailed and accurate measurement of the effect on the human body of various long term environmental situations. Factors affecting life in submarines on long exercises, for example, can be reproduced, measured and studied. Many other situations affecting servicemen and their jobs can be simulated.

The SE Labs 5000A recorder situated in the control room is used to make permanent records of biophysical measurements from research investigations and allows the research team to instantly recall a particular function for detailed analysis. The SE Labs EMMA system, which is sited within the chamber, enables several subjects to be monitored at the same time.

Although the Environmental Medicine unit was designed to meet the Royal Navy's own immediate research needs, its wide range of new facilities could well produce medical research results of international interest. These results would certainly be of use to the other Armed Services, Government, the offshore industry and industry generally.

UNITED STATES

'THE FASTEST GUN IN THE WEST' — AND A SMART SHELL

Amidst all these trials of new missiles, General Dynamics of America have recently carried out trials of the Phalanx gun system, which the US Navy is to adopt as a method of defence against incoming missiles.

The trial firing was made from a ship simulator on shore which reproduced the motion of a ship at sea. The target was towed by a USN aircraft — not quite the same conditions as a missile attack. The next phase is for the prototype system to go to sea on board the USS KING and the full weapon system is expected to come into use in 1976.

Phalanx consists of a six-barrel 20mm Gatling gun with its own pulse-doppler, search-and-track radar on the same mounting. The whole system stands about 15ft high, weighs 11,000lb and occupies 58sq ft of deck space.

The radar locks-on to an incoming target and the gun, which is slaved to it, follows the target automatically and opens fire when the range reaches a pre-determined point. An electronic spotting device measures the angular error of shells which miss and automatically corrects the gun's aim.

The Gatling gun has a rate of fire of 3000 rounds per minute and uses a projectile with high penetrating power and hence greater lethality.

The US Naval Weapons Laboratory recently tested a new shell which finds its target by means of the reflected energy of a laser beam directed from another ship or aircraft. A laser receiver in the shell picks up the energy reflected from the target and uses it to steer the projectile.

The shell is being developed by the USN as a joint-service missile for use by both army and naval guns.

USSR

SSN-8 MISSILES

Two new long range submarine-launched SSN-8 missiles were recently fired by the USSR over a range of 4000 miles, with their single warheads impacting in the Pacific about 500 miles north of Midway Island. Reporting this on October 3, Pentagon sources said the firings were believed to have been made from a new Delta-class submarine and that the range was more than twice that of the longest-ranged US submarine-launched missiles. The Soviet now has five of the new Delta submarines operating, with another five in the final fitting stage. Only the two missile firings were observed before TASS announced the conclusion of the tests.

CONTRIBUTIONS INVITED

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- Falsely represent that goods or services are of a particular standard, quality or grade, or that goods are of a particular style or model.
- Falsely represent that goods are new.
- Represent that goods or services have sponsorship, approval, performance characteristics, accessories, uses or benefits they do not have.
- Represent that he or it has a sponsorship, approval or affiliation he or it does not have.
- Make false or misleading statements concerning the existence of, or amounts of, price reductions.
- Make false or misleading statements concerning the need for any goods, services, replacements or repairs.
- Make false or misleading statements concerning the existence or effect of any warranty or guarantee.

PENALTY

For an individual: 31 — \$10,000 or 6 months imprisonment

For a corporation — \$50,000

It is not possible for this company to ensure that advertisements which are published in this magazine comply with the Act and the responsibility must therefore be on the person, company or advertising agency submitting the advertisements for publication.

IN CASE OF DOUBT CONSULT YOUR LAWYER

THE GROWING SOVIET FLEET

A Soviet F class large attack-type fleet submarine and KRUPNY class guided missile armed destroyer.

By Rear Admiral R. W. Cousins, USN, Commander-in-Chief, US Atlantic Fleet.

Highlights of the major changes in Soviet naval strength which have occurred during the past few years reflect the shifting balance of power in the Atlantic. The maritime capabilities of the Soviet Union, which grow day by day, present a strong, clear challenge to nations of the NATO alliance. — Soviets have spent the past 10 years building a "blue water" navy, capable of challenging the United States for sea supremacy.

- The national emphasis and the resources they have been willing to put into the effort have produced phenomenal success.

- As a first order of business, the Soviet Union has created a naval deterrent to counter-balance the United States ballistic missile submarine.

- The USSR now has 33 "Yankee class" nuclear powered ballistic

missile submarines in the water — most of them in their Northern Fleet, where they have direct access to the Atlantic, and are moving on into production of the larger, more capable "Delta class" submarine. Their production rate is six to eight "Deltas" per year.

- The Soviets, if they maintain their current rate of production, will by the end of this decade have

enough "Yankees" and "Deltas" to give them the full number of launchers and missiles allowed by the interim SALT agreement — 62 nuclear powered ballistic missile submarines and 950 missile tubes.

- It now appears that they could have as many as 30 "Deltas" in the water before the United States has its first "Trident" submarine in the water in 1978. The Soviet Union is building submarines at the rate of 10 per year.

Additional facts concerning the Soviet concentration on submarine warfare include:

- (1) Production of the nuclear powered attack submarine which can fire a tactical missile with either a conventional or nuclear warhead from a surfaced or submerged mode.

(2) The construction of diesel submarines has not been terminated. A new, particularly quiet diesel boat was added to their fleet last year.

(3) Both the "Yankee" and "Delta" model ballistic missile submarines are fitted out with torpedo tubes.

(4) While retirement of a few of their old diesel model submarines continues, it is estimated that they could deploy more than 100 submarines in the Atlantic at the outset of any conflict or confrontation.

Enlargement of Surface Navy

The Soviet's modernisation of their surface navy continues at a steady rate.

Construction of their "Kiev class" aircraft carrier continues. A second carrier is under construction.

Four new missile firing cruisers and destroyers became operational last year.

With respect to the Soviet Navy's logistic support capability, they have supplemented their use of the merchant marine by building under-way replenishment ships, giving their navy a capability for sustained operations farther and farther from home bases. The number of Soviet units at sea, throughout the 52 million square miles of the Atlantic Command increase, week by week, month by month. In the Atlantic, the numbers have increased by 50 percent in recent years. At the same time they are maintaining as many as a dozen warships in the Indian Ocean, a naval presence off the hump of Africa, and in the Caribbean. Their auxiliaries, and their merchantmen sail every ocean. Their fishing fleets and their research ships operate throughout the Atlantic.

Their "Yankees" are on station off the East and West coasts of our

The nuclear submarine USS ASPRO shown underway in the Gulf of Mexico.

country. The Soviets have built a navy of far greater strength than any nation might need for purely defensive purposes.

US/NATO Response

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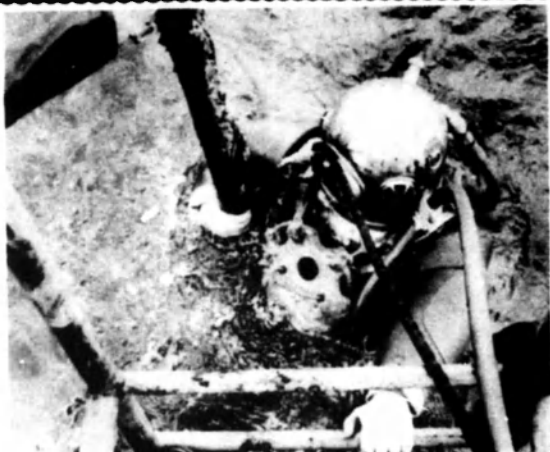
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has been a modernisation program involving the withdrawal from service, at an accelerated rate, of our older, obsolescent ships in order to free up the funds to build more modern, more capable sea combatants of our own.

There is little reason to anticipate any dramatic reversal of current US or NATO budget trends. We see a different trend on the Soviet side. The last decade has witnessed the emergence of the Soviet navy as a world-wide force — a force with a constantly increasing capability to go where it wants to go, to stay there and to serve state policy with increasing effectiveness.

We have watched this force change from one with a purely defensive role to one with far-ranging offensive capabilities.

World Environment

The Soviets have the ability to bring pressure to bear on our oil

lines, at points thousands of miles from the US or Europe.

The Arab oil embargo of 1973 has reinforced our understanding that the United States and NATO interests are expanding geographically.

The world is entering a disquieting new era in its economic history — moving out of an era when energy was easy to find, and easy to exploit.

Beyond that, the world economy is witnessing a permanent shift in relationships between the suppliers of raw materials and the consumers of those materials — largely the industrialised nations. The uneven concentration of mineral resources around the world is a critical fact of geography.

South Africa and Rhodesia have 96 per cent of the world's known chromium reserves.

Almost 60 per cent of the world's known tin reserves are to be found in Thailand, Malaysia and Indonesia.

In the case of copper, Chile, Peru, Zambia and Zaire have formed a cartel-like organisation.

It is increasingly apparent that very few, if any, industrial nations will be truly self-sufficient in the future. The Soviet Union is more self-sufficient than others.

We are seeing a movement toward an increasingly interdependent world in which increasingly great volumes of oil, wheat, and minerals are going to be moved between the countries of the world — and all of these will move, in increasing quantities, in ships, on the high seas.

Ocean Diplomacy

We see developing a new era of ocean politics, a new era of ocean diplomacy, at the same time the Soviets are becoming increasingly capable of exercising power at sea, and deploying new increments of Soviet influence, over the sea lines of communication, and in the peripheral areas of our world.



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The record voyage of the
clipper ship Patriarch from
Gravesend to Sydney in 69 days

Patriarch weighed anchor at Gravesend at 9.30 am on 2nd December, 1869, and probably cleared the Thames Estuary that evening. She arrived off the entrance to Sydney Harbour on the evening of 9th February, and picked up the pilot at 6.30 the following morning, Thursday 10th February, 1870. Patriarch's noon positions from Friday 6th December are plotted on this map.



Financial Times Clipper Race

On 31 August, 1975, modern ocean racing yachts will set out on the Financial Times Clipper Race from London to Sydney and back. Over the two legs of this 30,000 mile course they will be competing not only against each other, but also attempting to beat the record set up by the clipper ship PATRIARCH nearly 100 years ago. PATRIARCH made the outward passage round the Cape of Good Hope in 69 days, and returned by way of Cape Horn in 69 days.

General Conditions and Special Regulations

The final revised version of the General Conditions and Special Regulations for the Financial Times Clipper Race are now being published. In addition to the General Conditions and Special Regulations,

the Race Committee will be issuing advisory notes for the guidance of competitors.

The Special Regulations call for powerful, high-frequency radio equipment with which the yachts will normally be able to communi-

cate over very long distances during most of the race. Power supplies for their radio gear have also been specified and two completely independent systems are required, either of which must be capable of driving the transmitter directly on full power.

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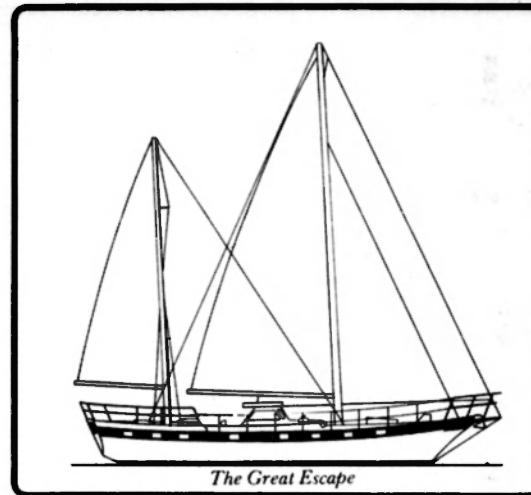
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Emergency equipment will be comprehensive and some of the gear will be identical with that carried by big ships. Liferafts have to conform with SOLAS International Convention on Safety of Life at Sea regulations. Liferaft radio sets are required, of the type which can be effective over very long distances, and which are normally operated by cranking handles.

Each crew member is required to carry a personal light or flare, and the organisers recommend the xenon type — a powerful electronic flare which in ideal conditions can be seen at ranges of up to ten miles.

These requirements reveal the meticulous planning and attention to detail which the Financial Times

Clipper Race Committee has put into these regulations. The Committee gratefully acknowledges assistance from many quarters, in particular from those who have already sailed and raced through the Southern Ocean.

"The Great Escape"

At the beginning of the year, London was visited by a Dutch entrant in the Financial Times Clipper Race. The Great Escape is an appropriate name for the sturdy steel-welded vessel which rates at 55ft and which will be skippered by Engineer Henk Huisman. Henk Huisman, is the owner of Watersports Twellegea, a Dutch sailing school which also specialises in yacht charters. Huisman intends to take a

complement of 12, and has already established the backbone of this crew through a tough training programme. Two years ago he took a sister ship through a force 12 gale in the North Sea. He has already nominated another skipper for the second leg. The Great Escape will not, however, be an all-male affair since three women have already signed on the crew list.

First Prize Commissioned

The first prize for the Financial Times Clipper Race is to be an 1/8" to a foot (1.96) scale model of the Clipper Ship *Patriarch*, which holds the record for the fastest ever passages between London and Sydney and back again. The model is being built by Bassett-Lowke of Northampton, one of the few remaining firms of specialist model builders. They have built models for the leading maritime museums of the world and their work probably surpasses in quality and accuracy the beautiful models produced by the old-time ship-wrights and sailors. Bassett-Lowke has achieved this by applying the finest traditions of craftsmanship to modern technological innovations. The model of *Patriarch* will measure 38 inches overall and will be sealed in a mahogany and glass case. It will be presented to the race winner — the yacht with the fastest aggregate time over both legs, and will be of exceptional value both as a personal memento and as an historical document.

Patriarch was built in 1869 for the White Star Line of Aberdeen which has long since disappeared together with all original records and plans of the ship. For over two years there has been intensive research into the ship and its record-breaking maiden voyage to Sydney. With the

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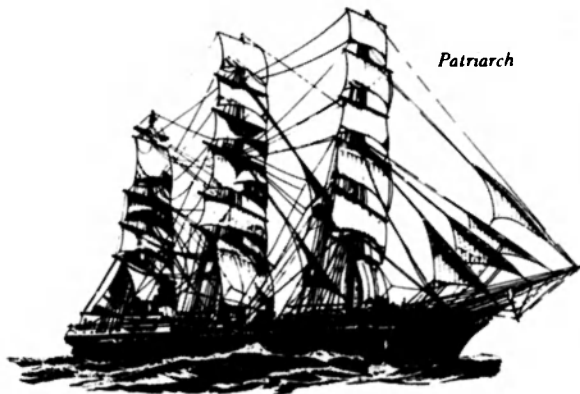
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Patnarch

Australian Navy crew on his 84 foot ketch, provisionally named *Anacoda II*. This means that Australia now has a representative national entry, and a worthy rival to *Graat Britain II* which Chay Blyth has lent for a British joint-Service entry.

New French Entry

The latest entry to reach the race organisers comes from the Cercle Sportif de l'Institut National des Invalides in Cherbourg. Michel-Pierre Doucin will skipper a white Bermudan ketch with a crew of six. The boat was launched last year and is named *Vallene*. It is built of steel, designed by Jean Knocker of France and is expected to rate at 45 feet.

Race Headquarters

The race committee has decided that a full-time race headquarters should be established in St Katherine's Dock from 11 August. It will provide full facilities for press, officials and technical supervisors. There will also be an operational headquarters at Rushcutters Bay, Sydney during the yachts' stay in Australia.

Australian Service Entry

News has reached London that Josko Grubic now intends to carry an

aid of several museums. Lloyd's archives, naval historians and shipping companies enough pictures and information have been collected to make possible an accurate reconstruction of this almost forgotten clipper. A passenger's account of the record breaking maiden voyage to Australia has also come to light. It was published in a

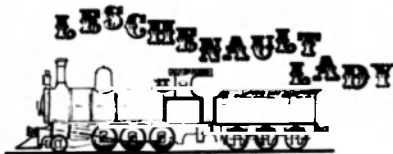
Sydney newspaper under the heading "From Gravesend to Sydney" and gives a vivid and knowledgeable account of the ship's progress together with daily positions. (See map).

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Naval Reserve Cadet News

CANADA

A Tip of The Hat To:

Participants in the Tri-Service
Cadet Centennial Tattoo.

Young men and women from Winnipeg, Portage la Prairie and Selkirk presented two and half hours of non-stop music, marching, precision drills, displays and pageantry. And the watching crowds loved it!

A special feature was the excellence of NWLC Centennial's marching band. Another highlight was the performance of the RCSCC Daerwood band.

The RCSCC John Travers Cornwall VC band, with massed pipes, brass, reed and percussion, did a grand job on the traditional "Amazing Grace". The NLCC J. R. K. Millen band thrilled the veterans in the audience by playing "Colonel Bogey" on the glockenspiels. RCSCC Qu'Appelle and RCSCC Crusader also earned their share of the applause.

VICTORIA

Signal to the Victorian Division
Naval Reserve Cadets from the
Senior Officer, Commander F. G.
Evans, MBE, VRO, RANR

Some time ago I asked to be relieved as Senior Officer Naval Reserve Cadets, Victoria, at the end of 1974. This time has now arrived.

When I became associated with the sea cadet movement some 26 years ago, it comprised 12 units and 300 cadets in New South Wales and Victoria. Recently it stood at 45 units and 2000 cadets throughout Australia.

It has been my good fortune to be able to play some part in the national growth of the sea cadet organisation, and of the Navy League without which the Australian Sea Cadet Corps and Naval Reserve Cadets would not have existed. Quite frankly, it has been hard work and not all problems have been resolved even at this time.



Commander F. G. Evans, the
former Senior Officer, Victorian
Division, Naval Reserve Cadets.

Throughout those years I have been sustained by the enthusiasm of the Cadets, the co-operation and loyalty of Unit Commanding Officers, Officers and Instructors; and a fine Staff — some members of whom have been with me for nearly a quarter of a century. I have been encouraged by my many friends in the Royal Australian Navy, and by goodwill in all sections of the community. In this support I am very grateful.

If I have a message for members of the Naval Reserve Cadets it is this: Most of us have ideals and principles; they will be challenged from time to time. When this happens each individual must decide in his own mind if his ideals and his principles are sound. If to his own satisfaction they are, then never cease to fight for them — never give up no matter the cost to you personally. This is the only way to achieve peace of mind and satisfaction of one's conscience.

I send you my best wishes for the future.

31 December, 1974

Transfer of the Navy League Colour to TS LATROBE

To seamen, flags play a vital part in their daily life. Their place in identification and visual signalling can be traced far back into history especially to the early Mediterranean seafarers to whom flags also had great symbolic significance on special occasions, when the flag was called a Colour.

Such an occasion, which they too would have recognised, occurred on Saturday, 12 October, 1974, when Commodore B. S. Murray, RAN Naval Officer in Charge of Victoria, transferred the Navy League Colour to TS LATROBE from TS VOYAGER of Williamstown. For his impressive ceremony, TS LATROBE had been assessed "The Best Unit in Victoria" during the year 1974, thus earning the right to succeed TS VOYAGER as the custodian of the Colour for one year.

TS LATROBE is situated in the Latrobe Valley near Morwell and the flag had been brought from Williamstown by a party of cadets attached to TS VOYAGER in transport arranged by HMAS LONSDALE. Commodore and Mrs Murray made the 100 mile trip especially for the occasion as did Commander F. G. Evans, MBE, VRD, RANVR, and Lieutenant Commander A. H. Burrows, VRD, RANR, Federal and Victorian Presidents respectively of the Navy League.

Many local guests included the Mayor of Morwell and Army Officers of the Company of the Royal Australian Engineers in whose depot building TS LATROBE operates most amicably.

All guests were welcomed by the Commanding Officer, Lieutenant B. F. Gregory, RANR, and Mrs Gregory, whose Ladies Committee was particularly active and very effective in providing lunch for those, especially TS VOYAGER cadets, who arrived in time for such hospitality.

Commodore and Mrs Murray were of course the last to arrive at about 1430 hours after the direct drive

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The Auxiliary cutter WINSTON CHURCHILL on charter to the Navy League of Victoria. Photograph shows the vessel in Corio Bay with Naval Reserve Cadets from TS VOYAGER and TS BARWON embarked (Photograph The Geelong Advertiser).

from Melbourne, and a brief unscheduled diversion around the Power Station Cooling Towers which most Melbourne visitors experienced either arriving or leaving!

After reviewing the cadets of both TS LATROBE and TS VOYAGER, drawn up in the drill hall, and congratulating the former, the Commodore presented a most appropriate address after the Colour was transferred to the immediate care of Chief Petty Officer J. Muir. Amongst other sound advice, he referred to the occasions when flags have been used in battle to provide a rallying point where those dispersed, perhaps in adversity, may re-group and renew their strength and resources. Such an occasion might be likened to the present one, if instead of battle one thinks of constant striving to be the best unit. At least one guest recalled how poets as well as sailors and soldiers had recognised this influence of flags as a source of inspiration.

After the Ceremony all cadets marched past the Commodore.

The only regrettable feature of the day was the weather, which was so adverse as to require the whole pro-

ceedings to be conducted inside the drill hall instead of outside on the parade ground, where its larger space for the march past would have been welcome.

At about 1530 hours, formalities were relaxed and afternoon tea was enjoyed by all, again thanks to TS LATROBE's Unit Committee.

TS LATROBE is an especially interesting Unit being so far from the sea on Victoria's brown coal field, and hence electric power producing area. However, steam power stations must have water — not only for their boilers, but for cooling purposes. This often necessitates a dam and area of water suitable for sailing and small boat work. Beside such an area of water is TS LATROBE which was formed in 1963 as a Unit of the Australian Sea Cadet Corps sponsored by the Navy

League of Australia. With other Units of the Australian Sea Cadet Corps, TS LATROBE was incorporated into the Naval Reserve Cadets of the Royal Australian Navy. However, the Navy League and local Unit Committees continue to assist the functioning of all these Units. It is to the latter that most of the credit for a very successful Colour Transfer Day belongs.

Presentation of Lonsdale Trophy to TS BARWON of Victorian Division Naval Reserve Cadets

Each year the Unit judged the most improved is awarded the Lonsdale Trophy which was originally presented to the Victorian Division a few short years ago by HMAS Lonsdale.

TS Barwon, situated on Corio Bay, West Beach, Geelong, was the winning Unit for 1974.

In a short and impressive ceremony on Sunday, 15th September, 1974, on board TS Barwon, the Commanding Officer of HMAS Lonsdale, Commander M. de V. Salmon, RAN, presented the Trophy to the Commanding Officer of TS Barwon, Lieutenant (Cadets) R. J. Whittington.

There were many guests including local dignitaries, parents and friends, and a small contingent from TS Latrobe, who relinquished the trophy. They had a return journey of some 300 miles from their homes in and around Yallourn in Gippsland and there attendance was warmly welcomed and appreciated by all.

Also attending this ceremony were the Senior Officers of the Division, Commander F. G. Evans, MBE, VRD, RANR, and the Deputy Senior Officer Lieutenant Commander A. H. Burrows, VRD, RANR.

A very enjoyable afternoon. Tea was prepared and served by the Unit Committee to close the formalities and complete the gathering in a relaxed and friendly atmosphere.

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AROUND THE TASMANIAN DIVISION

Compiled by A. J. Lee

A new Commanding Officer has been appointed for TS **Macquarie**. He is Mr Charles E. Trafford, an ex-submariner and now a Police Officer at Strahan. Mr Trafford was appointed as a Lieutenant in the Naval Reserve Cadets to date. 5 May 1974.

Mr Ray Davis and Mr Rex Wells have been appointed Sub-Lieutenants to assist him.

One of Lieutenant Trafford's first acts was the sale of the Unit's 54ft ketch **Reginald M** to Victorian buyers. The money will be used to buy smaller class sailing dinghies. The unit has also purchased a 35 seater bus for use as transport to bring their cadets from Queenstown to Strahan, a distance of 26 miles and provide a considerable budget saving in hired transport.

The bus will be overhauled by the Mt Lyell Company.

TS **Macquarie** expect to hold the full ceremonial commissioning of the Unit on Saturday, 22 February 1975.

In December 1974, the retirement was announced of Lieutenant Commander G. T. Boxball from the

Corps. He was Deputy Senior Officer and Training Officer for the Tasmanian Division. He commenced as CO of TS **Leven** in the early 1960s, and served in that capacity until his present posting in 1972. A successor has not yet been appointed.

During the year the following promotions were posted.

The Commanding Officer of TS **Derwent**, Lieutenant D. J. Heath was advanced to Lieutenant-Commander. He is the first ex Sea Cadet in Tasmania to achieve this rank. He joined **Derwent** as a cadet at its inaugural parade in 1951. He has been with the Unit except for a brief period for National Service and a time with the Tasmanian Division Headquarters.

Senior Instructors, Max Webb of **Derwent** and Andrew Forsyth of **Tamar** were promoted to Sub-Lieutenant to date, 1 March, 1974.

Ten cadets under Lieutenant Coleman spent five days afloat onboard **HMAS Stalwart** working out of the port of Hobart. A further ten under Lieutenant Lee were aboard **HMAS Hobart** for three days and voyaged from Devonport to Hobart.

Four Tasmanian cadets under Senior Instructor MacKenzie attended a ten day cooking course on board **HMAS Melbourne** alongside at Sydney. This was part of the preparation for galley staff for the Tasmanian Division.

A series of races were held during the year between **Emu**, **Leven**, **Mersey** and **York** (more commonly known as "Yukk") in which no crew could compete twice. The series was won by TS **EMU**. **Emu** also rounded off the events by winning a rifle competition between themselves, **Mersey** and **Leven**.

The Navalmen's Association of Ulverstone-Devonport have donated to **Leven** \$600 worth of equipment including a 14ft boat trailer, three walkie-talkie type radios and radiators. The Association has also undertaken to pay for the repairs to **Mersey's** 16ft 6in motor skiff which needs rebuilding.

Leven has also just purchased an Enterprise yacht and trailer for \$400.

Ulverstone **LIONS** will pay \$300 towards this and the yacht will be renamed **SEALION** in their honor.

Each Unit in the Division is at present attempting to set up a radio link with each other using crystal controlled army type 62 transmitters on 1.725 MKz. Final permission from the PMG is expected soon.

On 20 January, eighty cadets and thirty-eight Officers and Instructors of the Division entered camp at Fort Direction for ten days Annual Continuous Training. A total of five skiffs, two whalers and two motor boats were assembled from the **Derwent**, **Emu**, **Leven** and **Mersey** Units.

The camp was commanded by the Divisional Senior Officer, Lieutenant Commander A. E. Gates. Fewer cadets than normal attended because of the tendency to obtain employment during the very long school holiday.

The accent of training was on boatwork, .22 rangework, drill and radio communications. The radio work was done by Instructor D. Wilson of TS **EMU** who set up his amateur station at the camp. His callsign was **VK7DZW** operating on 144 MKz at Fort Direction. Local communication was by walkie-talkie on 27.24 MKz and Army 25 sets on 59 MKz.

A survival trek across Bruny Island had to be called off owing to the work boats being committed to work on the Tasman Bridge Disaster. This also effected the camp as a short trip to the camp became a 100 mile round trip from **HMAS Huon** to Fort Direction.

Cadet L/S Jones of TS EMU operates VK 7DZW under the watchful eye of Instructor D. Wilson.



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On Sunday 26th, Divisions and Band marched past the Naval Officer-in-Charge Tasmania, Commander Morrell. On the Australia Day holiday, the camp provided two whalers complete with crews and marines in period costumes for the re-enactment of Governor Phillips landing at the Sandy Bay regatta. This was watched by the Governor of Tasmania, Sir Stanley Burbury who also inspected the 24 man guard of honour paraded for him by the camp. Two unarmed platoons and a drum and bugle band also formed part of the guard.

The following competitions were won during the camp.

Best Division — Maintop: Lieutenant Andrews. Runner-up — Foretop: Lieutenant Lee.

A. J. Williams sailing Memorial Trophy — 1st TS Macquarie, Lieutenant Trafford; 2nd TS Derwent, Lieutenant Commander Heath; 3rd TS Emu, Lieutenant Strudwick.

The Senior Officers Shooting Trophy — TS Tamar, Lieutenant Cleaver.

Naval Reserve Cadets of Australia — Expedition to New Zealand, 1975

By Cadet Leading Seaman Q. M. G.
Story of TS MELBOURNE

In early 1974, the New Zealand Navy League approached the Navy League of Australia concerning an exchange of Naval Reserve Cadets. The idea was that a number of New Zealand Cadets should spend some time in Australia in exchange for a number of Australian Cadets who should spend an equal amount of time in New Zealand. The idea was accepted and immediately plans were formulated.

The selection of the cadets involved two main sections. It was decided to exchange three carlets, each unit choosing two cadets best thought to represent the country. These cadets then went to HMAS Lonsdale to go before the Board of selection. The Board consisted of three Officers of Divisional Staff, NRC, Vic. The interviews were informal but probing and after some deliberation three were selected, the cadets being L/S QMG Lachlan Story,

L/S Philip Rowbottom and A/S MTF John Thurtell.

We had never met each other before, except for brief moments and we were all wondering what the others were like. By the end of our three weeks trip, we were all extremely good friends. As the day for departure drew near we were kept very busy preparing uniforms etc, acquiring gear from HMAS Lonsdale, and making final arrangements with LCDR A. H. Burrows, President, Navy League — Victoria.

On 2 January, we all arrived at Tullamarine Airport where we boarded a Boeing 747B, the trip taking three hours, landing at Christchurch. None of us had been to New Zealand before and were wondering what it would be like.

After going through Customs we were met by Chief Petty Officer Sacell RNZN, who was responsible for our travelling arrangements, he took us to Lyttleton where we were met by a launch which took us to the Cadet Training establishment at Ripapa Island.

Ripapa Island was an island fortress built in 1816, as a guard against the threat of a French invasion, the name of the Fortress being Fort Jervis. Four big Naval rifles were mounted underground, completely hidden from the sea except when raised for the actual firing.

At Ripapa Island we were kept busy sailing, shooting, hiking, swimming, diving and various other activities. There were sailing and pulling regattas as well as day sailing and pleasure trips. Inside the actual fortress was a rifle range which we used on occasions for shooting and rifle handling instructions. We each, at separate times, took part in hiking and tramping trips and together took part in a big search and rescue exercise. Due to these exercises we got to know the hills surrounding Lyttleton quite well. All in all, we learnt much and had an excellent time during our stay at Ripapa Island.

We had a day's leave in Christchurch with the rest of the Islands cadets. They were only too happy to show us the sights of the city, such as the Queen Elizabeth II park where the Christchurch games are being held.

After leaving Ripapa Island we went by bus south to Dunedin. From this time on till the end of our stay

we were in the charge of the New Zealand Navy League, and they certainly looked after us in fine style.

While we were there Chief PTI Johnston took us into Central Otago, right up into the hills. We stayed in Queenstown for the night and came back the next day. In Queenstown we took a ferry trip right into the hills along one massive crater lake. We saw such things as "The Remarkables", a range of mountains which are definitely remarkable. They rise straight up from the water to snow capped peaks. The entire area had been formed by glaciers.

Once back at Dunedin, we individually saw the city and surrounding areas. We did a little sailing and a lot of sight seeing. We saw the big albatross colony, the museum, the harbour and the ships. I was taken on a one day drive to see things tourist don't get to see. Such things as a private stud farm and the V8 stock cars.

From Dunedin we returned north to Christchurch for one night. The next morning while John Thurtell and Philip Rowbottom went sailing, I went to see the final of the men's International Tennis Singles at Queen Elizabeth II Park.

That was some match. Early that afternoon we went inland to stay at a farm for two days. Despite the smallness and hilliness of the farms they are basically the same as Australian farms. We were shown through a long and narrow mountain pass "Four wheel drive only" this was really something. We saw much game in the mountains including deer.

From the farm we went back to Christchurch to catch another 747B home. While we were in the terminal building there was a fire alarm and we were evacuated.

All in all it was a fantastic trip for all of us. The New Zealanders could not have been better to us. We learnt a lot and exchanged many ideas with the New Zealand Cadet Corps. It was the highlight of our Cadet career. Due to the success of this venture I feel it should be repeated. Activities such as this are going on all the time in the Naval Reserve Cadets, and it is a very worthwhile organisation.

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Uniforms are supplied free of charge.

Cadets are required to produce a certificate from their doctor to confirm they are capable of carrying out

the normal duties and activities of the Cadet Corps. If injured while on duty, Cadets are considered for payment of compensation.

Parades are held on Saturday afternoon 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 Cadets 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 Senior Officer in your State, using the form provided below.

SENIOR OFFICERS, NAVAL RESERVE CADETS:
NEW SOUTH WALES: Staff Office Cadets, HMAS Watson,
Watsons Bay, NSW, 2030.

QUEENSLAND: Box 6, Post Office, Stafford, 4053.

WESTERN AUSTRALIA: C/- 182 Coode Street, Como,
6152.

SOUTH AUSTRALIA: C/- Box 1529M, GPO, Adelaide,
5001.

VICTORIA: C/- Box 227, Post Office, Hawthorn, 3122.

TASMANIA: C/- 3 Winmarleigh Street, Taroona, 7006.

AUSTRALIAN CAPITAL TERRITORY: Industry House,
National Circuit, Barton, 2600.

TO: The Senior Officer,
Naval Reserve Cadets,
I am interested in joining the Naval Reserve Cadets and would be pleased to receive further information.

NAME
STREET SUBURB
STATE OR TERRITORY POSTCODE
PHONE No AGE

(Please Print Clearly)

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

Parliament and The Defence Forces

*The Honourable Lance Barnard,
Australia's Minister for Defence.*



Due to the increasing and critical attention being given to defence matters by responsible sections of the news media in recent months, it would not be surprising if the Australian community had a sense of uneasiness about the state of the Armed Services. The calibre of many of the persons commenting on defence issues certainly justifies attention to the subject.

In the main, the concern being expressed does not relate to the present state of the Services, but rather to their future capacity to provide Australia with a credible Defence Force. The effectiveness of the Services at any given time depends largely on decisions made years beforehand, and it is toward the current decision-making area that criticism appears to be directed.

Responsibility for national defence lies first and foremost with the Federal Parliament. In normal practice, major defence decisions are made and put into effect by the Government of the day, which is subsequently accorded credit or blame for whatever measures it takes, or fails to take as the case may be. At the moment however the Senate is not without influence on Government actions, and to some extent this spreads the responsibility for defence over the whole Parliament — in practice as well as in theory.

The ability of a Government to make realistic defence decisions —

from determining its priority in the overall Government programme to approving or disapproving major equipment proposals — depends very much on the understanding members have of the various issues involved, the Ministry of course having particular responsibilities in this regard.

The Government's principal adviser on defence matters is the Department of Defence, and as the defence organisation is currently being re-structured it is perhaps timely to refer to the links between the Armed Forces and the Government.

Prior to December 1972 "defence" was well represented in the Ministry, no less than five Ministers (for Defence, Navy, Army, Air and Supply) having direct responsibilities for matters connected with national security. In addition to these five Ministers, in the last McMahon government seven others had held the Defence, Service, or Supply portfolios (the Prime Minister himself was a former Navy

(By Geoffrey Evans,
President of The Navy
League of Australia)

Minister). In short, nearly half the Ministry of 27 members had defence administrative experience and were familiar with defence issues.

This situation changed abruptly when the Labor Party assumed office, and one Minister was given responsibility for the five departments in the defence group (four — Navy, Army, Air and Supply subsequently ceased to exist as separate Departments of State — a reversion so far as the Navy is concerned to its situation between 1901 and 1915, and 1921-1939 when it was a part, as it is once again, of the Defence Department). Currently the Defence Minister has an assistant who has important ministerial responsibilities of his own in another area of Government.

It would be difficult to dispute that at the present time, if only for numerical reasons, the defence "voice" in the Government and therefore in the Parliament, has been greatly weakened.

Apart from the fewer direct links between the Armed Forces and the

Government and some loss of influence as a result, the administrative burden imposed on a single "full-time" Minister must surely create other problems when the complexity of modern defence forces is considered, together with the immense costs involved.

The Secretary of the Defence Department (Sir Arthur Tange) in his Report on the Re-organisation of the Defence Group of Departments (which was accepted by the present Government as the blueprint for the new defence structure) refers to the magnitude of the Defence Minister's task and pre-supposes the provision of other ministerial assistance. It is not however clear what the responsibilities of the "Minister(s) Assisting" would be or where he (or they) would fit into the new organisation. However in a defence structure of which the principal feature is a concentration of managerial authority in two persons — the Defence Secretary and the Chief of Defence Force Staff — who are responsible to the Defence Minister, it would appear that they would have to be "placed" between the Minister and his two principal advisers (the Secretary and CDFS) which would not seem helpful to anyone.

The "diarchy" form of defence management (as opposed to the existing "Board" system) has itself been the subject of some critical comment and if, as the Secretary suggests, the burden is too much for one Minister, the same comment might apply equally to the Secretary himself, who is to be given very much greater responsibility over the whole defence area than any other Public Servant hitherto.

Bearing these factors in mind, not least the desirability of increasing Government involvement in defence administration in a practical way, it is possible that our defence interests would be best served by a Defence Council with authority similar to that currently invested in the separate Service Boards.

Defence Councils are by no means a new innovation and exist in a number of countries with integrated Armed Services, including Britain whose form of Government and Service structures are very similar to our own. An Australian Defence Council might be comprised as follows:—

Minister for Defence
Minister with Personnel responsibilities
Minister with Logistics responsibilities

Chief of Defence Force Staff
Chief of Defence Dept
Secretary of Defence Dept
Chief of Naval Staff
Chief of Air Staff
Chief of Army Staff
and possibly, Chief Scientific Adviser.
There have been suggestions that the proposed new defence organisation will be unduly influenced by its civilian element: Whether this is true or not, the Defence Council suggested would clearly place management responsibility where it should be — on the representatives of the Government, on the principal professional officers, and on the head of the back-up organisation.

The Parliament will soon be called upon to determine these very important matters, and it would appear to be in its own interests to give the subject the closest study.

"Skill in naval affairs, as in other crafts, is the result of scientific training. It is impossible to acquire this skill unless the matter be treated as of the first importance and all other pursuits are considered to be secondary to it."

Thucydides c 404 BC

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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".

DIVISIONS

New South Wales — Box 1719, GPO, Sydney, 2001.
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Tasmania — 3 Winmarleigh Street, Taroona, 7006.
South Australia — Box 1529M, GPO, Adelaide, 5001.
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Australian Capital Territory — 12 Darmody Street, Weetangera, ACT 2614

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SUBMARINE ESCAPE VEHICLE PLANNED FOR SWEDISH NAVY

The Royal Swedish Navy rescue organisation intends to replace its existing submarine rescue balls with a submarine rescue vehicle (URF). This URF is to be based at the RSwN Diving Centre (MDC) at Sjodal, south of Stockholm, and in the event of a submarine accident it will be transported by trailer to the nearest suitable harbour to the incident and, from there, will be towed to the position where its services are required.

The specification of the URF, to meet the requirements of the RSwN, has been drawn up by Kockums Mek Verkstads, well known Swedish submarine designers and builders, in conjunction with the noted French sub-ocean specialists, Comex of Marseilles. The principal particulars of the URF are tabulated for the sake of clarity.

Operational method

On receipt of a 'Subsunk' alarm the URF would be immediately despatched, on its trailer, to the nearest harbour to the accident having suitable launching slipway or lift-off facilities. A surface towing vessel would be simultaneously ordered to the same port.

Meanwhile, at the MDC, two divers will be pressurised to the appropriate depth and then transported in a special personnel transport (PTC) to join the URF which will then be launched.

The URF will be towed to the vicinity of the accident, on the surface or, in bad weather, in the submerged condition, receiving power en route by way of an umbilical cord incorporated in the towing hawser. On arrival, divers from the towing vessel will disengage the towing hawser leaving the URF free to commence rescue operations.

Using its passive sonar the URF will home on the automatic pinger with which all Swedish submarines are to be fitted for such an eventuality. From a range of about 100m active sonar will be used, providing a picture of the seabed ahead of the URF and enabling its operators to avoid any obstacles.

Visual contact will be made at a range of 2-10m and, by means of the manipulator with which the URF is equipped, a steelwire rope is connected to the rescue hatch of the casualty. The URF will then winch

itself down to mate with the submarine enabling the hatch to be opened and the casualty's crew transferred.

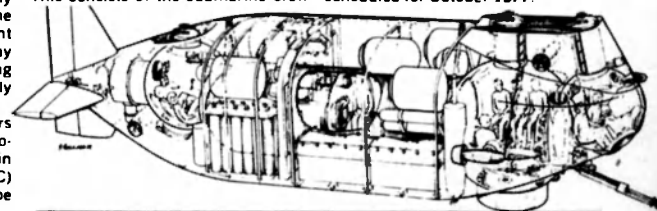
The URF embarked divers may have to assist in the mating operation should any deck gear or wreckage cover the rescue seat.

In the event of the rescue seat being badly damaged, making a proper docking impossible, a reserve procedure will be followed. This consists of the submarine crew

making a free ascent to the URF floating a few metres above them with its rescue compartment pressurised to the prevailing depth. Pressurisation will be carried out by the surface vessel with the URF either surfaced or just submerged. Prior to the free ascent of the submarine crew, the rescue vessel will be positioned by wire ropes secured by the URF's divers.

Once the rescue has been completed the surface vessel's divers will reconnect the towing cable umbilical and tow the URF, again surfaced or submerged according to weather conditions, back to the start point for disembarkation of the survivors. The URF's own divers may be decompressed in the rescue vehicle or be returned to base in the PTC for continuing decompression.

The order for the URF and accompanying PTC, valued at SwCr 12.6m (Aug '73 level), was placed with Kockums with delivery scheduled for October 1977.



Principal particulars and performance data

Length	13-50m (44ft 3in)
Breadth	ca 4-30m (14ft 1in)
Height	ca 3-90m (12ft 9in)
Displacement	ca 2-90m (9ft 6in)
Draught, surface	ca 0-80m (2ft 7in)
Freeboard, f.w'd entrance hatches	ca 3-0 knots
Speed, max ahead submerged	ca 1-7 knots
max astern submerged	ca 0-6 knots
max lateral submerged	ca 0-6 knots
max vertical submerged	10-0 knots
max towing, surface and submerged	460m (1,500ft)
Diving depth, max	300m (1,000ft)
max for divers activities	300m (1,000ft)
max for standard rescue procedure	90m (300ft)
max for reserve rescue procedure	10hr
Endurance, max mission time for URF in 40hr	10hr
assuming following mission profile:	10hr
Towing	10hr
Search and rescue	10hr
Towing	10hr
Safety margin	10hr
at 2 knots ahead speed, with sea-water at 15°C and max economy of aux power consumption the battery will be fully discharged after	10hr
Complement, operators' compartment	2 operators
auxiliary compartment	1 ac
divers' compartment	2 divers
rescue compartment	23 survivors
Personnel transport capsule (PTC)	30 total
max internal pressure	capacity 2 persons
endurance	31 bar (455psi)
Trailer with URF, length (on cab)	16-30m (54ft 1in)
width	4-30m (14ft 1in)
height	4-70m (15ft 5in)
max permissible speed	60km/hr (37mph)

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NEW DEFENCE OFFICE IN MELBOURNE

The building, St James Plaza, 350 St Kilda Road — nearly opposite the Shrine of Remembrance — will accommodate 2500 members of the Defence Department including Service personnel.

The occupants of the new building will be drawn mainly from Albert Park Barracks, South Melbourne, which will enable that complex to be eventually returned to the Albert Park Trust, and the area to revert to parkland.

Occupiers of the new building will include the newly-formed Defence Regional Office, with personnel made up of the integrated Service departments. Other occupants will be the Army Logistics Command, part of RAAF Support Command, and the Headquarters of the Naval Officer-in-Charge, Victoria.

The building consists of two separate areas, one a 26-storey tower, the other a 5-storey block. It is set in an open plaza with trees and modern sculpture. The building is air-conditioned, carpeted, and includes three levels of car park. The building should be fully occupied by September, 1975.

SEA KING FLIGHT FORMED

The first Australian flight of Westland Sea King helicopters was formed last October at a ceremony at the Royal Naval Air Station, Culdrose, Cornwall.

The flight has been formed to train and familiarise RAN personnel with the Sea Kings which will replace the Wessex anti-submarine helicopters now in service with the Fleet Air Arm. Until now RAN personnel have trained with Royal Navy Sea King squadrons.

The Sea King Mark 50s ordered for the RAN are being built to meet Australian requirements and are

more versatile than those supplied to the Royal Navy, the Indian Navy, the West German Federal Navy and the Norwegian Air Force.

Besides their main anti-submarine role, the RAN's Sea Kings will be used for search and rescue operations and casualty evacuation.

The helicopters carry two pilots, an observer and an aircrewman. They are powered by twin Rolls-Royce engines and are fitted with advanced flight control, navigation, sonar, and radar equipment. The flight, with 52 RAN personnel, has now taken delivery of two of the 10 helicopters ordered.

TURANA DEVELOPMENT

A further series of development flights of the new RAN pilotless target aircraft Turana was successfully completed at Jervis Bay late in 1974.

Turana, designed by the Government Aircraft Factories (GAF) in Melbourne, is being built for the RAN by GAF in collaboration with other Government establishments and private industry. A number of overseas countries have expressed interest in the target aircraft.

The aircraft tested were fitted with a number of recent modifications designed to improve the performance and reliability of the system together with specially developed low-altitude flight equipment.

The target flew under close control at altitudes down to 15 metres and at speeds of up to 585 km/h, simulating the attack of a sea-skimming anti-ship missile.

Turana was engaged by the guns of HMAS Swan using non-explosive shells. The miss-distance measuring equipment carried in the drone



This Westland Sea King anti-submarine helicopter was the first of those ordered for the Royal Australian Navy to fly at Yeovil, England. The Sea Kings will replace the Wessex helicopters which entered service with the RAN in 1962.

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recorded a number of near-misses.
Had the shells carried the normal
proximity fuse, the drones would
probably have been destroyed.

COMPUTERS FOR DEFENCE

The Department of Manufacturing
Industry had awarded a contract to
Sperry Rand Australia Ltd, for the
Supply to the Department of
Defence of a Univac 1110 computing
system costing approximately \$4m.

It is expected that the intro-
duction to service of the Univac
equipment in mid-1975 will mark a
significant change in the character
of the large defence data processing
systems to take advantage of
modern techniques and equipment
including large scale disk storage
devices.

EXTENSION OF SERVICE FOR ADMIRAL SMITH

The service of Admiral Sir Victor
Smith, KBE, CB, DSC, Chairman,
Chiefs of Staff Committee, has been
extended by approximately 6
months to 23 November, 1975. He
will then have served 5 years in the
appointment.



NEW FIRE CONTROL SYSTEM FOR RAN SUBMARINES

A contract worth \$87,000 had been
placed with the Librascope Division
of the Singer Corporation for a
contract definition study for a new
computer-based fire control and
combat data processing system for
RAN submarines.

The new system is intended to
replace the existing equipment and
should improve the effectiveness of
the submarines considerably.

Computer-based fire control
systems have been or are being
developed for submarines of most
Western navies, including the Royal
Navy and the United States Navy.

The selection of Singer Libra-
scope, of Glendale, California, USA,
was made after a thorough technical
evaluation of responses to tenders
from five companies in Europe and
the United States. Singer Librascope
is currently the contractor for all
USN submarine fire control systems.

While there is no production
commitment at present, it is anti-
cipated that Australian industry will
take part in any future programme
and will provide technical support
for the equipment after its
introduction into service.

M2362/8 A LA MODE STYLE

New style sailor hat for the Navy?
Not likely, but Able Seaman Stores
Naval Stephen Gallagher, has fun
trying on a warrior's head-dress in
Port Moresby. Stephen, shopping for
artifacts, met a friendly highlander
from the Goilala District who gave
him some helpful advice. The
elaborate ceremonial head-dress
features Bird of Paradise and eagle
feathers. The round objects are cup-
cups made from sea shell, inlaid with
tortoise-shell. Stephen was
impressed with the head-dress, but it
was not for sale. Stephen is serving
at the Papua-New Guinea Defence
Force headquarters at Boroka, near
Port Moresby.

SALE OF HMA SHIPS SYDNEY AND QUEENBOROUGH

The Department of Manufacturing
Industry have called tenders for the
purchase and removal of the ex Navy
transport SYDNEY and the destroyer
QUEENBOROUGH. Tenders close at
2.00 pm on Tuesday, 18 February,
1975.

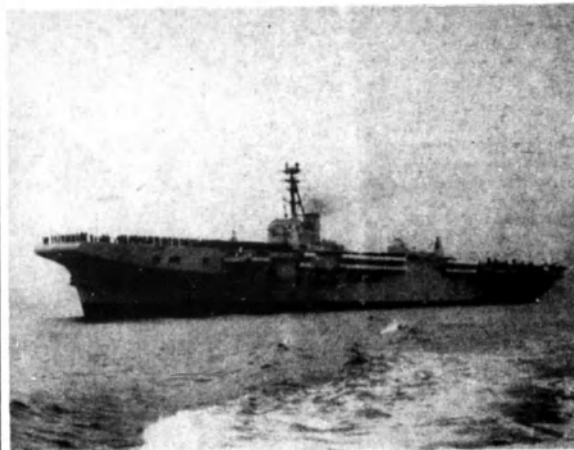


*Admiral Sir Victor Smith, KBE,
CB, DSC, Chairman, Chiefs of
Staff Committee.*

The Minister for Defence, Mr Lance
Barnard, in announcing the
extension, said that he was pleased
that an officer of the stature and
experience of Admiral Smith had
agreed to continue serving. This
would be particularly valuable
during an important stage of
Defence reorganisation.

A COMMAND SHIP AN RAN REQUIREMENT

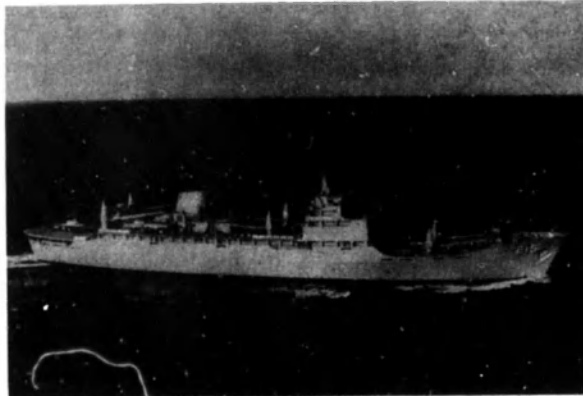
Notes by Alex Gamkrelidze



The former HMAS SYDNEY, transporting troops and equipment from Vietnam. SYDNEY steamed more than 146,500 miles on her Vietnam voyages.

The present Government's policy to remove all Australian Servicemen from overseas bases brings to light an urgent requirement for flexible naval forces patrolling our coastline.

HMAS STALWART (D125) at sea — present configuration.



Since the retirement of HMAS Sydney, no multi-role ship exists in the RAN.

A replacement for Sydney should have flexibility of roles and should encompass:

- (A) Surveillance
- (B) Civil Aid

- (C) Training
- (D) Overseas Equipment Transfer
- (E) Amphibious Capacity

(A) Surveillance

For example — Flagship of small naval task force (perhaps including 2 type 12 Destroyer Escorts) patrolling Indian Ocean, both deep ocean and coastline. Provide surveillance on Foreign naval forces, fishing resources protection, off-shore rig protection.

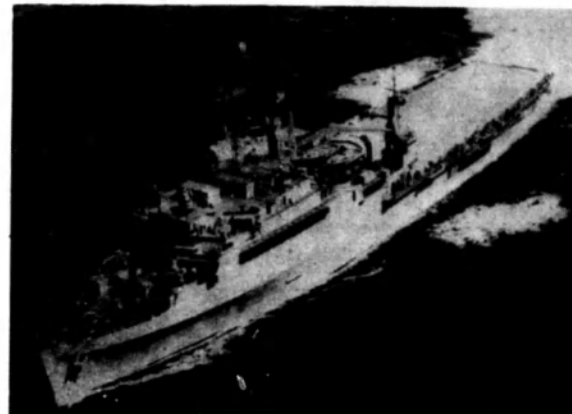
The Command Ship should have capabilities of:

- * Helicopter Capacity (eg. 3 Sea Kings and 2 Iroquois)
- * Troop Capacity (100 troops with landable vehicles and support).
- * Task Force Command Post (long range communication facilities).
- * Replenishment for Destroyer Escorts of a task group.

(B) Civil Aid

Flagship for civil disaster eventualities. Rapid overseas commitment of civil disaster task force providing:

- * Helicopter for evacuation and reconstruction.
- * On board hospital facilities.
- * Landable vehicles and personnel for reconstruction.



The Amphibious Transport Dock, USS JUNEAU (LPD 10).

built LPD (landing platform deck) also known as Amphibious Transport Dock of Austin or Raleigh Class (see photograph).

One of these type ships could be purchased from the US Navy and with minimum modernisation, could hanger 2-3 Sea Kings or 4-5 Iroquois Helicopters.

Troop and amphibious capacity already exist in these ships.

SHORT TERM SOLUTION

HMAS Stalwart (see photograph and drawing), could be modernised to take 2-3 Sea Kings or Iroquois Helicopters and provide for two landing craft. Existing space allows for hospital and troop accommodation in lieu of sailors as in present role.

(C) Training

Ship to be capable of long range cruises for officers and sailors and including facilities for helicopter pilot training at sea.

(D) Equipment and Personnel Transfer

Ship to be able to undertake sea transport of service equipment, for example: New aircraft purchases overseas, transfer of men and equipment to overseas commitments, such as United Nations Peace Keeping Duties.

(E) Amphibious Capacity

Ability to land a self-contained small troop task force with vehicles, helicopters, medium guns and stores, for the dislodgement of

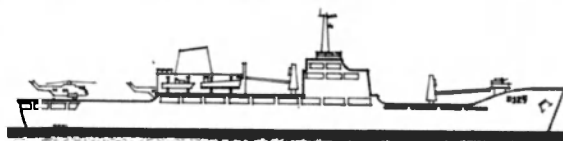
foreign guerilla activity on Australia's Northern Coastline or as part of UN or SEATO commitment.

SHIP (ACQUIREMENT)

Existing ships suitable for the above requirement would be the US

(Readers are invited to comment on this article and submit their own ideas, plans, photographs and drawings (black ink) regarding our need for a Command Ship. Suitable stories will be included in the next edition — in full or abstract — Editor.)

HMAS Stalwart. Author's drawing showing his concept of a modernised profile, enlarged helicopter deck and landing craft.



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MACHINERY MONITORING SYSTEMS FOR BELGIAN NAVY

Four new escort vessels under construction for the Belgian Navy are to have Decca ISIS 300 and ISIS 100 engineroom monitoring and recording systems. The main system in each case will be an ISIS 300 monitoring 160 channels, with an ISIS 100 as auxiliary, monitoring 180 channels.

With the Royal Navy and Royal Netherlands Navy having ordered ISIS 300s already, this makes the third navy to choose Decca ISIS equipment and several other navies have it under active consideration.

The use of more advanced and highly-rated machinery today, coupled with the need for remote control under wartime operational conditions and economic use of manpower, calls for a comprehensive but compact surveillance system of the highest integrity. Further, the continued use of surveillance arrangements based on massed gauges and hardwired alarms is incompatible with a further escalation of machinery complexity, the limiting factors being the rate at which operators can assimilate such information and the difficulty in verifying the integrity status of piecemeal instrumentation.

The Decca ISIS 300 solution is a high-speed, solid-state scanning system giving a coherent alarm

display, group alarm indication and alarm sequence recording, together with centralised digital display and data recording facilities. High system integrity and automatic self-checking facilities are an essential feature. The Decca ISIS 300 (joined by the 200 and 100 in June last year) was designed specifically for marine machinery surveillance and to the highest commercial standards. It has the great advantages to the naval user of being thoroughly proved (there are 120 systems at sea, with over 50 on order) so avoiding both heavy development expenditure and the protracted lead times associated with equipment specially developed for naval use.

Regarding orders for the RN, unpublished to date, a 100 channel ISIS 300 system was installed in a naval shore test facility for submarine prototype machinery in May 1970. Evaluation work was carried out by MoD(N) and the performance of the system has been very satis-

factory. Early in this period the equipment 'graduated' from an evaluation system occupying valuable space to an important operational tool. During 1972, two 240 channel systems were installed to extend surveillance, and it is intended to embody this facility in seagoing installations.

Simultaneous with this exercise a 100 channel system was installed in HMS Hecate, a diesel-electric survey ship, in order to gain experience of seagoing ship operation. Again this evaluation proved very successful and the equipment became an important part of machinery surveillance in a short time.

Two 240 channel Decca ISIS 300 systems have been specified for main and auxiliary machinery surveillance in the Command Cruiser CAH, and a third of these has already been delivered to the shore trials machinery installation concerned. Decca ISIS 300 is also specified for the Type 22 Frigate and has been accepted for use in nuclear submarines.

The Royal Netherlands Navy has ordered five systems and these are at present being fitted in guided missile frigates and support vessels.

The ISIS 100 is a less sophisticated system employing switched inputs only. It recently followed the ISIS 300 in passing the shock test specified for equipment for naval vessels.

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(Surface/Underwater Ship Intercept Equipment)

To fire or not to fire — that is the question.

With the ever increasing sophistication of modern weapons, the time available to the commander to decide what action to take to protect his command against a threat is rapidly decreasing, whilst the probable result of a wrong decision becomes more catastrophic.

As recent events have shown, reaction time against the unknown threat is at a premium, and seconds become the currency for survival.

It must be borne in mind however that:

"Science and technology cannot of themselves, solve the multitude of military problems whose roots are beyond physical laws and the engineering arts".

Gen James Ferguson,
One time Chief Air Force
System Command,
USAF.

Thus possession of the currency mentioned above implies the possession of equipment representing state of the art technology, equipment which, within seconds or better still milli or micro seconds, answers the questions of 'What it is', 'Where it is' and hence the question 'To fire or not to fire'.

In an attempt to provide equipment falling into this category, The MEL Equipment Co Ltd — Crawley, Sussex, with the naval scene in mind, launched their SUSIE range of equipments (Surface-Underwater Ship Intercept Equipment).

Within the range, each equipment is a complete digital passive radar intercept system.

Behind each equipment is the philosophy that for a single operator to be capable of handling the dense radar spectrum in a typical naval environment, the equipment does the work, the operator assesses results.

The SUSIE range of equipments cover the requirements of most types of warships, differing only in the numbers and types of signal parameters measured and the degree of automation involved.

Common to the whole range is the instantaneous presentation to the operator of unambiguous, correlated frequency-bearing information on a clear tactical display. All signals received are presented simultaneously.

Covering the range 1-18 GHz (D to J bands) and with frequency band extension capability, equipments in the SUSIE range can be provided measuring frequency band, frequency, bearing, pulse, width, PRI, scan period, signal jitter and signal lock-on.

Instantaneous alpha-numeric read-out of any or all of these parameters is available for operator selected signals.

Warning, blanking and automatic tracking stores are standard, and signal identification facilities can be associated with the larger systems. Various types of aerial assembly are available including assemblies designed to integrate mechanically with various tracking-search radars, thus sharing the much sought after top mast position.

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No 2

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AUSTRALIA'S MARITIME SERVICES

by GRAHAM HARRIS

— A Need for Forward Planning



HMAS MELBOURNE, flagship of the Royal Australian Navy. Her operational life cannot be extended beyond 1980.

A little over 12 months ago the Navy League of Australia published a review of the Royal Australian Navy in the light of possible threats that could arise within the succeeding decade.

At that time the point was made that it was an error to look at just the great powers to assess likely developments.

It was suggested that it was more valuable to look at the nations in the Indian Ocean-Western Pacific area, which is of course the area of Australia's real strategic interest. The great powers may well, in situations which they consider to be of advantage to them, become suppliers of equipment and expertise, but they

are not likely to become involved directly in a local, conventional struggle.

The "lesser" nations do not suffer from the same inhibitions and those nations indigenous to the area are really where Australia should be looking to ascertain whether there is any likelihood of a threat developing.

Threat, it is worth remembering, can involve actions ranging from harassment of shipping, to raids on isolated parts of the continent, to blockade to a full scale invasion of

this country. The variations within the extremes are many indeed.

In the last review of Australia's maritime defences it was stressed that none of the nations referred to represented a present threat. Nor was it suggested that any of the nations in the area would necessarily become a threat, or seek to apply military pressure upon Australia. But it was said then, and ought to be repeated, that in the present era of instability, when one nation's attitude to another can change very rapidly, it would be foolish to disregard the fact that a number of countries in the region have substantial armed forces and that they are continuing to expand them.

Examples of rapid change in attitude of one nation to another

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An artist's impression of the proposed Patrol Frigate to be built for the RAN.

can be seen in the Japanese approach to the Arabs vis-a-vis Israel when the oil crisis hit home and in the policies of the Thai and Philippine Governments to United States bases in their respective countries.

It is not the purpose of this paper to suggest that events over the last year or so have produced an immediate threat to Australia. Nor is it suggested that it is now possible to identify some future threat, low level or otherwise. But it is clear that in recent times developments in both the economic and political spheres have increased instability and tension in the region of strategic interest to Australia. While it cannot be said that there is a present identifiable threat to Australia it should not be assumed, in the light of present circumstances, that there will not be some kind of threat within 5 years, 10 years or some longer period.

Just some of the events of recent times show that there is little reason to adopt a simple ostrich-like no-threat policy.

1. The oil crisis which affected many of the developing nations as hard as it did those of the industrialised world, requiring them to pay far more for their fuel, fertilisers etc and which in some cases severely limited the amount they could obtain.
2. The Suez Canal will open in June, 1975, thereby enabling the Russians to more readily deploy ships and submarines into the Indian Ocean. This will inevitably produce further

groups within the Portuguese colony and between Indonesia and Australia.

5. The sudden and complete collapse of South Vietnam, the not so sudden demise of the Lon Nol government in Cambodia and the probable advent of a Pathet Lao government in Laos with results, particularly in the attitudes of neighbouring countries, yet to be ascertained. It is worth noting just how swift was the change which overwhelmed Indo-China.

The foregoing list is not meant to be a catalogue of woes but is merely intended to illustrate that this is an age, and an area, of instability. Events in distant places can have unpredictable results. A left wing coup in Portugal can give rise to an independence movement in Timor which will concern those in government in Indonesia. The conflict in the Middle East can produce the oil crisis and create difficulties for India and Japan.

Within the Indian Ocean-Western Pacific region those nations with significant armed forces have continued to expand or re-equip them.

Japan is pursuing her current five year plan which includes two guided missile destroyers, three destroyers, six frigates, submarines conventionally powered but some with the Albacore hull and numbers of smaller vessels.

China is continuing her programme which involves the production of more modern surface

naval competition in the area between outside powers. Not only has the United States been deploying task forces into this ocean but so also have the French. In 1974 for the first time the French sent a carrier to the Indian Ocean.

2. The continuing tension in the Middle East and the real risk of another outbreak of a shooting war particularly on the Syrian front.
4. The problems surrounding the impending independence of Portuguese East Timor provide scope for a real conflict of interest (if nothing worse) between the Indonesian government and various political



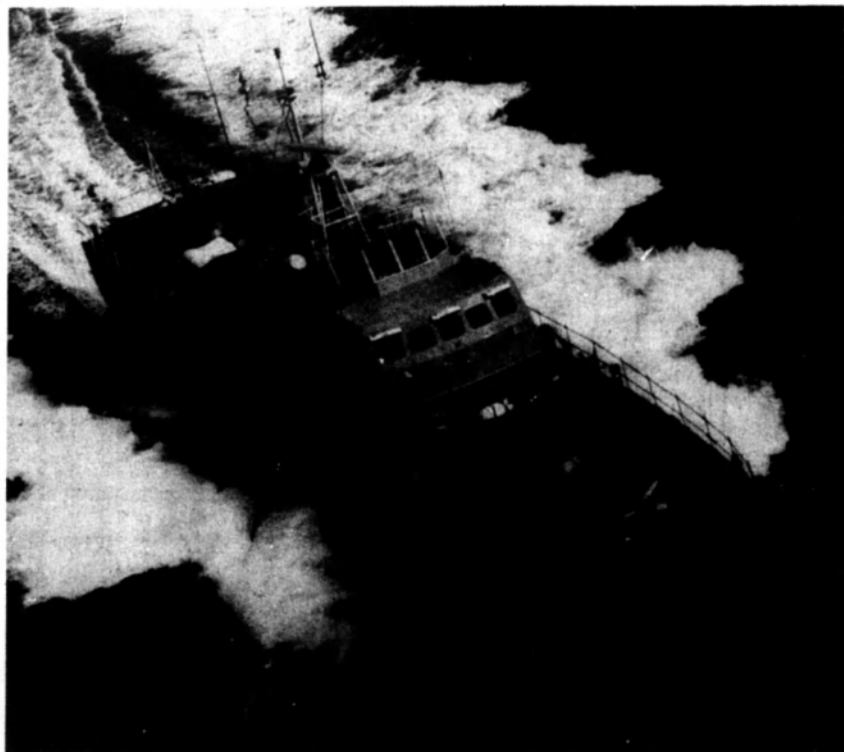
The Daring class destroyers VENDETTA and VAMPIRE were modernised in recent years but should reach the end of their economic life in the early 1980's.

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units and a continuing flow of submarines.

The Indian building plan is impressive in its scope. It includes seven to ten frigates with the British Leander and French A69 classes among them. The Indians may now have six Foxtrof submarines. This is, of course, in addition to the existing order of battle which includes a carrier, two cruisers, and some 16 destroyers and frigates. India has, of course, joined the ranks of the nations which have exploded a nuclear device.

For some ten years the Indonesian navy was allowed to run down with few replacements. It is now intended to re-equip the navy and replace many of its aging vessels. There have been recent reports that the Indonesians are going to order four modern destroyer escorts.

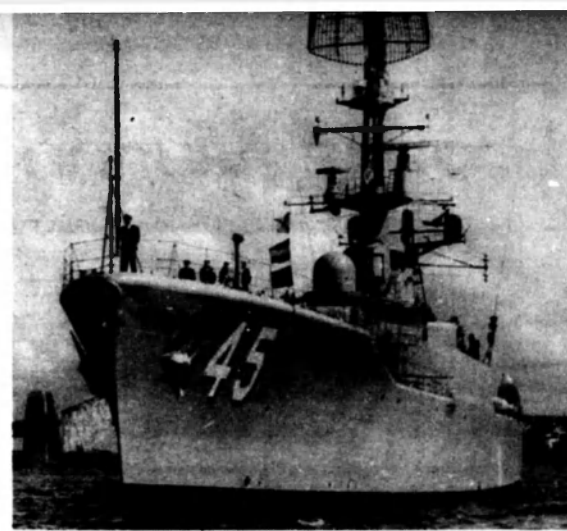
It is in the context of the region of which Australia is a part that her defence situation and her defence forces must be judged. It is a background of change and instability where it would be unwise to try to forecast the trend of events more than three or five years ahead. It is a region where all the significant nations are expanding or re-equipping their armed forces.

What then is the position of Australia's maritime forces. In the review of Australia's maritime defence, referred to at the beginning of this paper, they were set out as follows:

"1 aircraft carrier (Skyhawk attack bomber aircraft, Tracker A/S aircraft and A/S helicopters), 3 guided missile destroyers, 2 gun-platform destroyers (plus 1 demilitarised as a training ship), 6 destroyer escorts, 4 submarines (plus 2 on order), 1 fleet oiler, 1 destroyer tender, 6 mine-countermeasures craft, 8 small landing craft, 15 small patrol boats (less 2 to be given to Indonesia), 23 long range maritime patrol (LRMP) aircraft, 24 F111 aircraft."

This list, drawn up more than a year ago, could be repeated as the present order of battle. (Cyclone Tracy has reduced our patrol boat force by one).

There are at present no combat ships on order for the Royal Australian Navy (RAN) or LRMP aircraft for the Royal Australian Air Force (RAAF). Although there has been talk of the American Patrol



HMAS YARRA, a River class frigate similar in design to the British Type 12 class.

Frigates the fact is that no orders have been placed!

Options are held in respect of two ships and they may be exercised in 1978. If the options are exercised the RAN can expect to receive the two Patrol Frigates in about 1981 by which time four of the Type 12 frigates and all three Daring class destroyers will be 20 to 25 years old. So far no orders have been placed for LRMP aircraft to succeed the aging Neptunes.

Vice-Admiral Sir Richard Peek has both in "The Navy" magazine and in the press set out in some detail what will be the result for the RAN if no replacement programme is implemented in the near future. He has clearly demonstrated that in the 1980s the RAN, without replacement, will consist very largely of aging ships.

Having regard to the long lead times required in the production of modern warships, to provide replacements for the ships which will reach the end of their useful lives in the period 1980-1985, decisions must be taken in the next 12 months.

To not implement such a programme simply means to take a gamble that all will be well and that no threat will materialise between now and the early 1980's. The two Patrol Frigates, assuming the options are taken up, cannot of

themselves be considered an adequate replacement programme.

It can be reasonably argued that Australia is in a period of great economic difficulty. This is no doubt true. But to order ships (and LRMP aircraft) for delivery in the period 1980-1985 would involve very little expenditure for several years.

It is, perhaps, worth observing that if no orders are placed before 1980 (except for the Patrol Frigates) then the RAN is unlikely to receive any deliveries before 1986 or 1987. This means that if replacement warships were needed in a hurry they would have to be bought "off the shelf" from overseas — almost certainly second-hand and unlikely to meet Australian requirements without modification.

Good planning should ensure that new ships and aircraft come forward in time to replace those reaching the end of their useful lives. Failure to do so necessarily results in a decline in the strength of the maritime forces. The Navy League has previously called for a plan to enable the timely replacement of HMAS Melbourne, the mothballed HMAS Sydney, and the destroyer force. Such a programme, together with the purchase of LRMP aircraft, is essential if Australia is to avoid a gap in her maritime defences in the 1980s.



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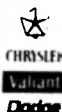


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VISIT TO AUSTRALIA BY UNITED STATES NAVY LEAGUE PRESIDENT



The President of the Navy League of the United States, Ernest Carrere, Jr., and his wife, paid a short visit to Australia at the end of March.

Dr and Mrs Carrere arrived in Sydney from America and New Zealand on Saturday, 22 March, and were met by the NSW Navy League President, Lieutenant Commander Ted Bryden-Brown, who arranged a dinner, and in conjunction with HMAS Penguin, a harbour cruise and visit to the Taronga Zoological Park during the brief period the visitors were in Sydney.

On Monday, 24 March, the President and Mrs Carrere flew to Canberra where they were met by the Federal President, Commander Geoff Evans, and the Flag Lieutenant to the Chief of Naval Staff, Lieutenant Geoff Smith. After calling on the United States Charge d'Affaires, the visitors, together with the Minister for Defence and Mrs Lance Barnard, lunched with the Federal President. In the afternoon they visited Tidbinbilla Reserve.

On Monday evening Dr and Mrs Carrere dined with Vice-Admiral H. D. Stevenson and Mrs Stevenson, Sir Richard and Lady Peek, Rear-Admiral A. M. Synnot and Mrs Synnot, Rear-Admiral A. G. McFarlane and Mrs McFarlane, Rear-Admiral G. J. Willis and Mrs Willis,

the Federal President, and Mrs Max Reed.

On Tuesday Dr Carrere and the Federal President called on the Secretary of the Defence Department, Sir Arthur Tange; the Chairman, Chiefs of Staff Committee, Admiral Sir Victor Smith; and the Chief of Naval Staff, Vice-Admiral H. D. Stevenson. A lunch in honour of the distinguished visitors was given by Vice-Admiral and Mrs Stevenson.

Due to industrial action by air hostesses, the remaining Canberra arrangements had to be cancelled to allow the visitors and the Federal President time to drive to Melbourne, where they arrived at 2.00 am on Wednesday.

Later in the same day Dr and Mrs Carrere visited HMAS Cerberus, and after having been shown the Establishment lunched with Captain John McInerney and Mrs McInerney. They were escorted to Cerberus by the Victorian Navy League President, Lieutenant Commander Alan Burrows, and Mrs Burrows.

In the evening the Carreres attended a reception given by the Victorian Division of the Navy League at Greenwich House.

Ernest Carrere Jr., President of the United States Navy League, recently visited Australia.

On Thursday Dr Carrere lunched with the Naval Officer-in-Charge Victoria, Commodore B. S. Murray, and Federal and State office-bearers of the Navy League, and after visiting places of interest around Melbourne, spent the evening at the home of the Federal President.

Dr and Mrs Carrere left Melbourne on Good Friday for Fiji, Canada and home, and were farewelled by the Federal and Victorian Presidents of the League.

The United States Navy League has some 45,000 members and is regarded as a "strong voice" for the United States Navy. It also has a sea cadet organisation of 6000 members, and it is hoped that an exchange between American and Australian cadets can be arranged in the not-too-distant future.

Commander Evans believes the visit of the US Navy League President was of value to both Navy Leagues, and in view of the importance of our association with the United States, feels that every effort must be made for our organisations to keep in touch with each other.

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- Falsely represent that goods are new.
- Represent that goods or services have sponsorship, approval, performance characteristics, accessories, uses or benefits they do not have.
- Represent that he or it has a sponsorship, approval or affiliation he or it does not have.
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New Patrol Boats for . . . THE ROYAL AUSTRALIAN NAVY

On Wednesday, May 7, 1975, newspaper advertisements invited applications from shipbuilders or their agents wishing to register their interest in tendering for the supply of patrol craft for the Royal Australian Navy.

The advertisements read "The new class of craft is expected to have capabilities similar to the ATTACK class but with improvements in some areas. Copies of the Registration Package may be obtained by applying in writing by May 22, 1975, to . . . The Department of Defence (Navy Office), Canberra . . ."

Australia's then Defence Minister, the Honourable Lance Barnard, MP, issued a statement on May 6, 1975 that — the new class of patrol craft would complement and in due course replace the existing ATTACK class; and would have similar capabilities to the ATTACK class with improvements in sea keeping ability, range and speed, radar for navigation and surveillance, and self-sufficiency for independent operation appropriate to conditions off the Australian coast.

Shipbuilders interested in tendering would be required to respond with an existing patrol craft design. Modifications to suit Australian requirements would be agreed during a project definition phase prior to the letting of a construction contract about November/December, 1976. Construction would be in Australia or, alternatively, with lead craft built overseas and the remainder in Australia.

No indication has yet been given by the Minister of the number of craft to be built for the RAN. The generality of the press release and newspaper advertisements would indicate that the Australian Government is at this time completely open-minded regarding

A brief look at What's available "Off the Shelf"

its patrol boat requirements and is keen solely to ascertain what is currently available throughout the world "off the shelf".

The purpose of this hasty editorial is to acquaint readers with some of the types of patrol boats currently available and which undoubtedly will be assessed by the RAN when selecting new units.

Opportunity was taken following the newspaper advertisements to contact shipbuilders throughout the world, known to be currently producing patrol boats. "The Navy" contacted 21 shipbuilders, of which 10 had responded at time of going to press. It is apparent that this lack of response was brought about largely by the short time limit given overseas shipbuilders to forward information, viz, seven days.

Before summarising the details hastily collated from material supplied, it would be wise to examine the specifications the RAN should look for when selecting a suitable patrol boat design and also briefly assess the ATTACK class of Patrol Boat currently in service —

The ATTACK (ACUTE) class of patrol boats in service with the Royal Australian Navy are basically of good design and well constructed —

Displacement: 146 tons full load.

Dimensions: 107.5 overall x 20 x 7.3ft.

Guns: one, 40mm; two medium machine guns.

Engines: Paxman 16 YJCM diesels: 3500hp; two shafts: 21-24 knots.

Complement: 19 (3 officers, 16 sailors).

Twenty boats built — five for Papua New Guinea and two have been transferred to Indonesia.

The RAN now have 13 boats and it has been calculated that by 1982/84 they will reach the end of their operational life.

The main criticism of the ATTACK class boats has been of their top speed — a little low and there is no doubt that their performance in weather conditions over force 5 is inadequate, in short — the ship will survive longer than the crew in heavy weather.

It would appear desirable that this new class of Australian patrol boats should be:

(a) Of greater size but of no greater draught than the ATTACK boats, as their ability to move in comparatively shallow water is a great asset, particularly for interceptive work.

(b) Higher speed has obvious penalties in weight, space and fuel consumption, but a sustained speed of 25 knots would be satisfactory. High speed is desirable to avoid counter attack, either by missiles or aircraft.

(c) Much greater offensive capacity is necessary and obviously surface-to-surface guided missiles would be preferred with a somewhat larger gain than the present 40mm gun. For operations in rough seas or at speed — the missile has the advantage over the shell in that it is controllable after launching, so that the attitude of the boat at the time of firing is not critical.

(d) Some degree of standardisation is advisable in machinery, both in radar, generating capacity and, of course, main engines. Therefore the use of Paxman diesel engines may have some advantage both in the provision of spare parts and in the training of technical staff in operating and maintenance procedures.

(e) Patrol boats should be able to be maintained at forward bases as

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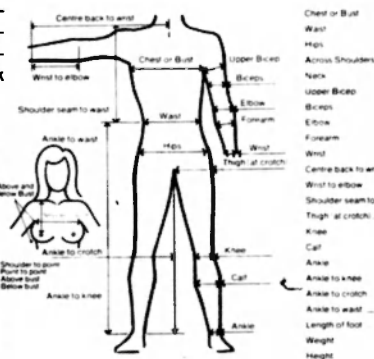
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Bust and Forearm at fullest part of muscle but
not over. Measure chest at fullest part of chest and
under arms. Measure waist at narrowest part of waist.
Measure hips at widest part of hips and seat.
Measure length of leg from hip to heel.
Measure length of arm from shoulder to wrist.
Measure length of torso from neck to waist.
Measure length of leg from hip to heel.
Measure length of arm from shoulder to wrist.
Measure length of torso from neck to waist.

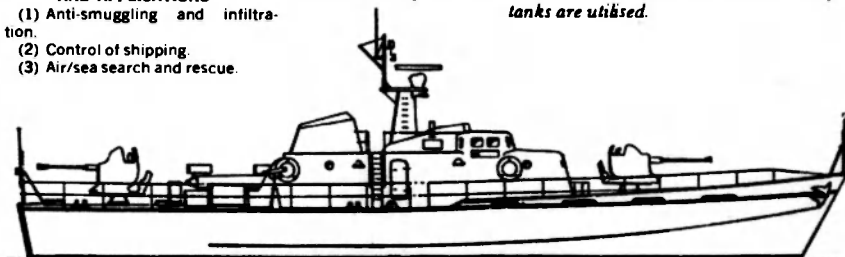
much as possible and with ability to
be hauled out on existing or enlarged
slipways at, say, Cairns and Darwin is
an obvious advantage for vessels
which operate in shallow and poorly
charted waters and where there is
always a risk of damaging a
propeller or hull fittings. An obvious
gain would be a vessel that
could be beached by its crew to
permit minor repairs to hull and
screws.

(f) Habitability is certainly
important, both as an aid to crew
efficiency and morale, so a standard
not below that of the ATTACK class
boats is necessary.

(g) Superstructure should be kept
small — a wheelhouse, flying bridge
and ammunition storage. Thereby
leaving the decks clear to give a wide
field of fire to the armament
mounted on the fore and/or aft
decks. It also reduces the silhouette,
making the craft less conspicuous.

POSSIBLE ROLES AND APPLICATIONS

- (1) Anti-smuggling and infiltra-
tion.
- (2) Control of shipping.
- (3) Air/sea search and rescue.



(4) Police duties — guarding and
patrolling the Australian coastline
and territorial water (fisheries patrol
and surveillance).

- (5) Harbour defence.
- (6) Small naval escort.
- (7) Mine laying/sweeping
capability.

(8) Counter an attack by similar
craft of another nation.

(9) Attack role against an enemy's
shore installations (ie, a small
commando raid).

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Pakistan, four to Libya, four to New
Zealand, two to Nigeria and an
additional two are under construc-
tion for Nigeria.

SPECIFICATION

Construction

All-welded mild steel hull with
aluminium alloy superstructure.

Propulsion

Twin marine diesel engines driving
twin screws through reverse-reduc-
tion gearboxes.

Performance

Up to 26.5 knots depending on
engines specified.

Engines: Twin Paxman 12 YJCM
diesels; max bhp 1800; max speed
23.5 (knots); max continuous speed
(knots) 21.5. Twin Paxman 16 YJCM
diesels; max bhp 2400; max speed
(knots) 26.5; max continuous speed
(knots) 24.0.

Note: All speeds given at half-load
displacement in UK conditions.

Range

With standard fuel load at 12
knots, 2300 nautical miles.

With reserve tanks at 12 knots,
3500 nautical miles.

Stabilisers

Fin-type (operational extra).

Accommodation

Arranged for a total complement
of 21.

Commanding officer in separate
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Two officers.
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Ventilation

Mechanical supply and natural exhaust of fresh air to all accommodation, operational spaces and toilets. Mechanical supply and exhaust to galley and engine room. Air-conditioning available if required.

Standard armament

Forward — 40mm gun.
Aft — 40mm gun.
Two 2in rocket flare launchers.
Total magazine capacity (40mm) — 960 rounds.

BROOKE MARINE'S 37.5 METRE FAST PATROL BOAT

Four of these vessels have been built and another four are under construction for the Sultanate of Oman; one has been delivered to the British Ministry of Defence (Air); one for an East African country and another three are now being built for an East African country.

SPECIFICATION

Construction

All-welded mild steel hull with aluminium alloy superstructure.

Propulsion

Twin marine diesel engines driving twin screws, through reverse-reduction gearboxes.

Performance

Up to a maximum of 67 km/h (36 knots) may be obtained, depending on engines selected and on overall displacement.

Range

With standard fuel load at 24 km/h (13 knots) 6100 km (3300 nautical miles).

Stabilisers

Fin-type (optional extra).

Accommodation

Arranged for a total complement of 25 depending on role. Commanding officer in separate cabin.
2 officers.
2 or 4 petty officers
18 ratings

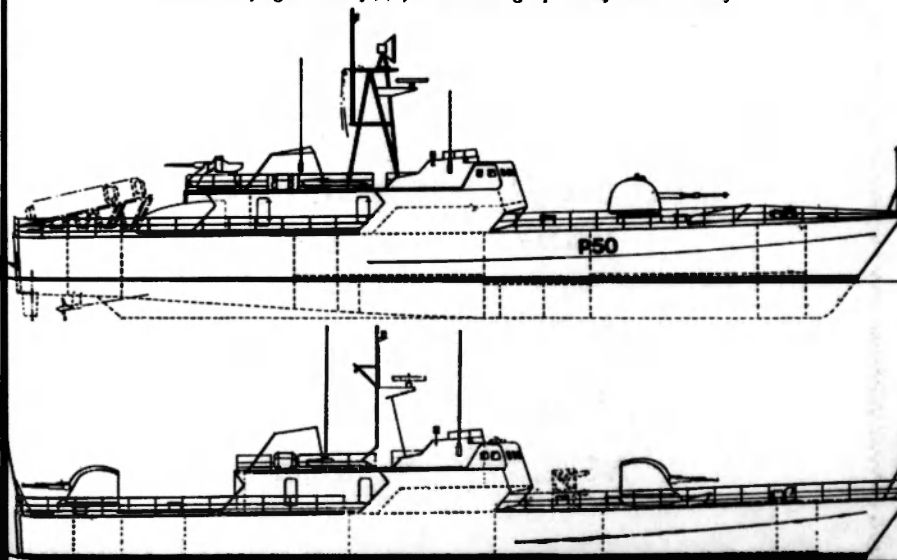
Ventilation

All living and operational spaces air-conditioned.
Mechanical supply and exhaust of fresh air to all other necessary spaces.



The Brooke Marine 37.5 metre fast patrol boat, the first of four constructed for an East African country.

The Strike and Defence-Escort versions of the 50 metre fast patrol craft by Brooke Marine. This craft has been designed and developed to meet the requirements of navies for general long range patrol operations, for offensive strike action and for defence escort duties. The ship is offered in two versions: (i) a high speed missile carrying strike craft; (ii) a medium high speed defence escort craft.



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Standard armament

Forward — 40mm gun.
Aft — 40mm gun.
Two 2in rocket flare launchers.
Total magazine capacity (40mm) — 960 rounds.
Alternative armament (including weapon control and radar systems) may be installed to suit purchasers' particular requirements.

BROOKE MARINE'S

50 METRE

FAST PATROL CRAFT

A PROJECTED DESIGN IN NEGOTIATION WITH THREE OVERSEAS NAVIES

SPECIFICATION

Principal dimensions (strike and defence and escort craft)

Length overall: 50.65m (166ft 0in)
Length on waterline: 47.55m (156ft 0in).

Beam, maximum: 8.23m (27ft 0in).
Depth, moulded: 4.57m (15ft 0in).
Draught, mean: 2.05m (6ft 9in).
Displacement, standard: 275 tons, approximately.

Armament (strike craft)

Guns — forward: 76mm Oto Melara; aft: 30mm twin A32 Naval mounting.

Missiles: ship designed to accept 4 Exocet missiles.
Tracking radar: Selenia Orion RTN 10X.

Surveillance radar: Decca TM1229.
Fire control: Direction and control of main gun from radar by dedicated computers. Provision to receive the direction and control system of the Exocet missiles.

Armament — (defence escort craft)

Guns — forward: Bofors 57mm automatic types; aft: Bofors 57mm automatic type.

Tracking radar: Selenia Orion RTN 10X.

Surveillance radar: Decca TM1229.
Fire control: Direction and control of both guns from radar by dedicated computers.

Performance (strike craft)

Speed (standard displacement): 41 knots maximum; 37 knots continuous; 25 knots cruising (3 diesels only); 15 knots cruising (centre diesel only); 12 knots economical cruising.

Range, at continuous speed: 500 nautical miles; at cruising speed (12 knots): 2160 nautical miles.

Performance (defence escort craft)

Speed (standard displacement): 33 knots maximum; 30 knots continuous; 22.5 knots cruising (wing engines); 15 knots cruising (centre engine); 12 knots economical cruising.

Machinery (strike craft)

The main propulsion comprises: each wing shaft — one marine gas turbine combined with one marine diesel engine driving a fixed pitch propeller through a reverse/reduction gearbox.

Centre shaft — one marine diesel engine driving a controllable pitch propeller through a reduction gearbox.

Maximum rating: 19,660 hp
Continuous rating: 16,500 hp

Machinery (defence escort craft)

The main propulsion comprises: each wing shaft — one marine diesel engine driving a fixed pitch propeller through a reverse/reduction gearbox.

Centre shaft — one marine diesel engine driving a controllable pitch propeller through a reduction gearbox.

Maximum rating: 11,160 hp.

Continuous rating: 9100 hp.

Hull form

Round bilge with raked stem, flush deck and radiused transom stern.

Construction

All welded steel hull with sea water resistant aluminium alloy superstructure.

Accommodation

Commanding officer: day/sleeping cabin and toilet.

Two officers: double cabin, toilet and wardroom.

Six senior ratings: one cabin of three 2-tier berths and toilet.

Twenty-four junior ratings: one mess deck with 3-tier berths and recreational space, and separate washroom and heads.

"GUARDIAN" 20 METRE PATROL BOAT

Navy, Coastguard and Marine Police

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The GUARDIAN 20 metre (65ft) patrol boat built by Aquarius Boat Co Ltd and marketed by Marine and Coastal Limited, London. This vessel has recently been delivered to Barbados.



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Training

Independent command. Several 20 metre craft may operate for the cost of a large boat, with the advantages to be gained from numbers, dispersal and several small independent commands.

CHARACTERISTICS

The 20 metre "Guardian" Patrol Boat is fast and seaworthy, easy to maintain and provides a stable platform for a short range weapon system. Its shallow draft and good

sea-keeping quality enable it to operate inshore or out at sea and it can ride out heavy weather.

The layout has also been designed to give good accommodation for the crew so that the boat can be used for detached patrols.

Surface Defence

It can carry a SHORT "Blowpipe" opticap missile system, which has a range of 3000 metres and a warhead equivalent to a 76mm shell — enough to damage a heavier ship or

put out of action a smaller ship. The missile is guided in flight.

Air Defence

The same "Blowpipe" missile is effective against all low-flying aircraft in air defence, supplemented by the 20mm cannon.

BASIC CHARACTERISTICS

Dimensions

Length, Hull, 65ft 6in; 20m.
Length, WL, 55ft 6in; 16.90m.
Beam, 17ft 6in; 5.3m.
Draft, 5ft; 1.52m.

	Engine Make	General Motors GM 12V 71 T1	MTU MTU MB 8V 331 TC 80	MTU MTU MB 12V 331 TC 81
Machinery Alternatives	Max SHP (each)	650	875	1350
	Continuous SHP (each)	595	735	1125
Speeds	Displacement (Medium Load)	30 tons	31 tons	32 ½ tons
	(At medium load displacement)			
	Maximum speed	23 knots	27 knots	33 knots
	Full speed (continuous)	21 knots	24 knots	30 knots
	Cruising speed (continuous)	18 knots	18 knots	18 knots
Endurance	Patrol speed	15 knots	12 knots (one engine)	12 knots (one engine)
	At full speed	500 miles	500 miles	350 miles
	At cruising speed (continuous)	650 miles	650 miles	650 miles
	At patrol speed	750 miles	1000 miles	1000 miles
	Fuel Capacity	1500 Imp galls	1500 Imp galls	1500 Imp galls

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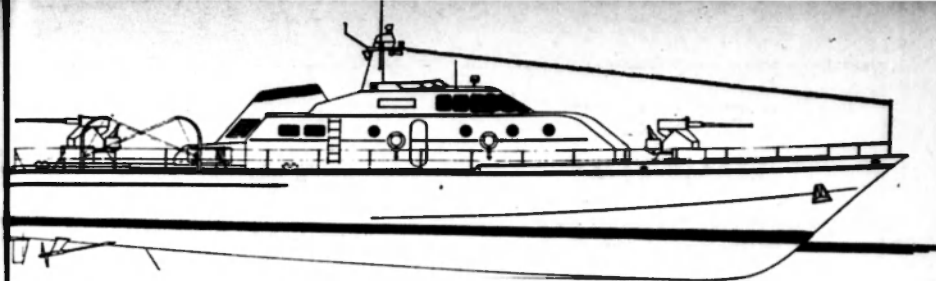
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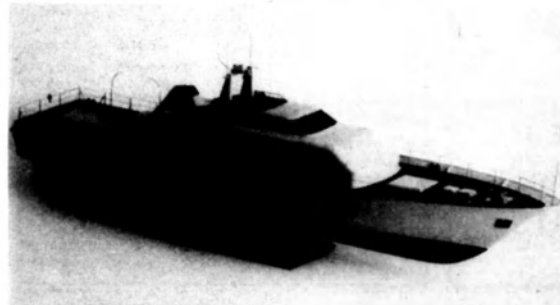
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*The 34 metre twin screw diesel patrol boat built by Cammenga
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Alternative engines may be fitted
according to displacement and per-
formance required by the customer.
Typical examples of engine installa-
tions and approximate speeds
obtainable in tropical conditions are
given below.

Marine Diesel Engines

2 x 1950hp — 24 knots maximum,
21 knots maximum continuous; 2 x
4500hp — 34 knots maximum; 30
knots maximum continuous; 3 x
4500hp — 44 knots maximum; 37
knots maximum continuous.

Specification for 25.0 Metre Twin Screw Diesel Patrol Boat

CAMMENG JACHTBOUW BV, AMSTERDAM, HOLLAND

Specification for 34.0 Metre Twin Screw Diesel Patrol Boat

Length overall
34.0 metres.
Length at deck
33.8 metres.
Length, waterline
30.0 metres.
Beam
7.35 metres.
Depth, moulded
4.1 metres
Draft, overall
1.7 metres.

Displacement, light
105 tons.
Displacement, normal
125 tons.
Displacement, load
135 tons.
Fuel capacity
20 tons.

Machinery
2 x MTU 12 V 652 TB 71. Overload
rating, each 1950hp (metric) at

1460rpm. Continuous Rating, each
1650hp (metric) at 1380rpm. Rating
DIN 6270.

Gearboxes
2 x ZF, 1200 HS 20

Performance
In extreme tropical conditions at
half load displacement: 24 knots
maximum and 21 knots continuous.

Range
In excess of 2500 nautical miles at
12 knots.

ALTERNATIVE PROPULSION

Alt 1 — Machinery
1 x MTU 16 V 538 TB 92: 4000hp
each at 1900rpm (max); 3350hp
each at 1790rpm (cont); Rating DIN
6270

Performance
Extreme tropical conditions, half
load displacement: 31 knots
maximum and 27 knots continuous.

Alt 2 — Machinery
2 x MTU 20 V 538 TB 91: 4500hp
each at 1900rpm (max); 3750hp
each at 1790rpm (cont); Rating DIN
6270

Performance
Extreme tropical conditions, half
load displacement: 34 knots
maximum, 30 knots continuous.

Length overall
82ft 0in; 25.0 metres.
Length at Deck
80ft 6in; 24.5 metres.
Length, waterline
70ft 6in; 21.5 metres.
Beam
20ft 4in; 6.20 metres.
Beam chine
17ft 5in; 5.31 metres.
Depth, moulded
10ft 1in; 3.08 metres.
Draft, hull
3ft 6in; 1.07 metres.

Draft overall
6ft 3in; 1.90 metres.
Displacement, light
59.5 tons.
Displacement, normal
73.0 tons.

Displacement load
81.0 tons

Thames tonnage
130.0 tons

Fuel capacity
3,650 Imperial gallons (16,200
litres).

Machinery
2 x Caterpillar D 349 V 16: 1220
bhp each at 2000rpm (intermittent);
970bhp each at 1800rpm
(continuous); Rating DIN 6270.

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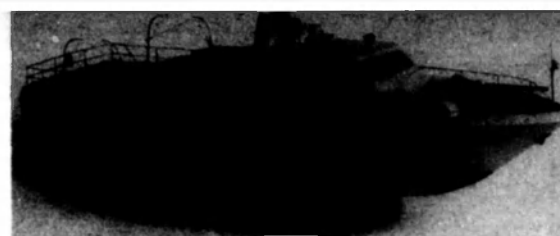
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Built by Cammenga Jachtbouw B.V. this 25 metres fast patrol boat, depending on diesel engines fitted, is capable of speeds of 45 knots.

Gewboxes

2 x ZF — 800 HS 20 or REINTJES
SWA 800.

Performance

Extreme tropical conditions, half
load; displacement: 24 knots
maximum, 21 knots continuous.

Range

In excess of 1000 nautical miles at
cruising speed in full load condition.

ALTERNATIVE PROPULSION

Machinery

2 x MTU 16 V 538 TB 92; 4000hp
each at 1900rpm (max); 3350hp
each at 1790rpm (cont); Rating DIN
6270

Performance

Extreme tropical conditions, half
load displacement: approximately
42 knots maximum and
approximately 37 knots continuous.

Alternative engines may be fitted
according to displacement and
performance required by the
customer. Typical examples of
engine installations and
approximate speeds obtainable in
tropical conditions are given below.

Marine Diesel Engines

2 x 1350hp: 25 knots maximum,
22 knots maximum continuous; 2 x
4000hp: 45 knots maximum; 40
knots maximum continuous.

If speeds in excess of the above
target are needed, the vessels can be
fitted-out with gas turbines as main
machinery which, combined with
sophisticated weapon systems, will
make the FPBs formidable small
warships.

**AILSA Shipbuilding Co
Limited, Scotland**
**AZTECA CLASS PATROL
VESSEL**

Length overall
34.34 metres.

Length on load waterline
30.94 metres.

Breadth moulded
8.65 metres.

Depth moulded amidships
4.14 metres.

Draught aft (maximum)
2.19 metres

Maximum sprint ratings in trials
condition

24 knots.

Maximum continuous speed
21 1/2 knots.

Economic cruising speed
18 knots.

Endurance at maximum continuous
speed

750 nautical miles.

Endurance at Cruising speed
1000 nautical miles.

Fuel oil capacity
21 tons.

Fresh water capacity
4.5 tons.

Accommodation for

One senior officer; Commanding
officer (with spare berth); Four
officers; Four petty officers; Four-
teen ratings.

Main engines Paxman Ventura 12
YJCM Diesel, each developing
1800bhp and driving a fixed pitch
propeller through a reverse/
reduction gearbox.

Self contained air-conditioning
units are provided throughout the
accommodation.

The vessel can be fitted with a
40mm gun forward and a twin
20mm gun aft and two rocket flare
launchers are provided.

VOSPER

**THORNycroft GROUP
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ENGLAND**

**142ft Fast Patrol Boat —
TENACITY Now in Service
with The Royal Navy**

Principal dimensions

Length overall

144ft 6in.

Length on dock

142ft 0in.

Length on waterline

130ft 0in.

Beam moulded

26ft 6 1/2 in.

Depth moulded

13ft 5in.

Draught (approximate)

7ft 9in.

Top speed

40 knots.

Displacement (approximate)

220 tons.

Construction

The hull is of prefabricated
construction in all-welded mild steel,
with aluminium alloy super-
structure. The hull is sub-divided
into watertight compartments by
steel bulkheads; the internal
partition bulkheads are of "Plasti-
cell", faced with laminated plastic.
Thermal insulation is fitted to the
ship's sides and on the underside of



An AZTECA class patrol boat built by Ailsa Shipbuilding Co Limited, Troon, Scotland, for the Mexican Navy.

the weather decks in the superstructure and throughout the accommodation spaces. Acoustic insulation is fitted to the engine room bulkheads.

Machinery

The 142ft fast patrol boats can be powered by two separate machinery arrangements.

The diesel version has four Napier Deltic or Maybach diesels, giving a maximum speed of about 40 knots.

The CODOG version has three Rolls Royce Proteus gas turbines also giving a maximum speed of about 40 knots, with Paxman or Maybach 6-cylinder diesels on the wing shafts for manoeuvring or cruising at speeds up to 15 knots.

The engine control room contains all the controls for the main engines and electrical generating plant. Full alarm and protection equipment for all machinery is fitted together with

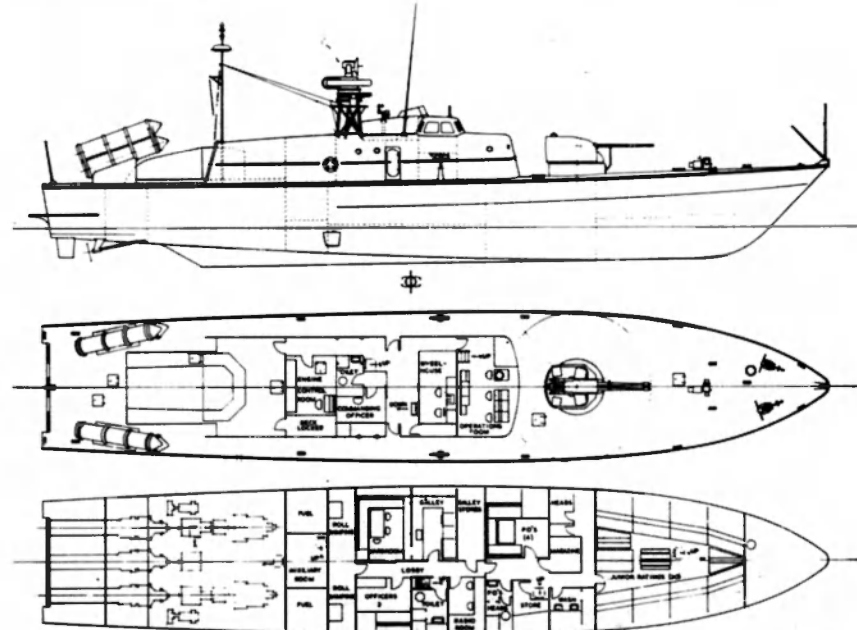


Vosper Thornycroft private venture fast patrol boat Tenacity. This 142 foot, 40 knot, gas turbine-diesel fast patrol boat, armed with an advanced weapons system of powerful modern guns and guided missiles, represents a new generation of fast patrol boats capable of engaging major warships and modern aircraft.

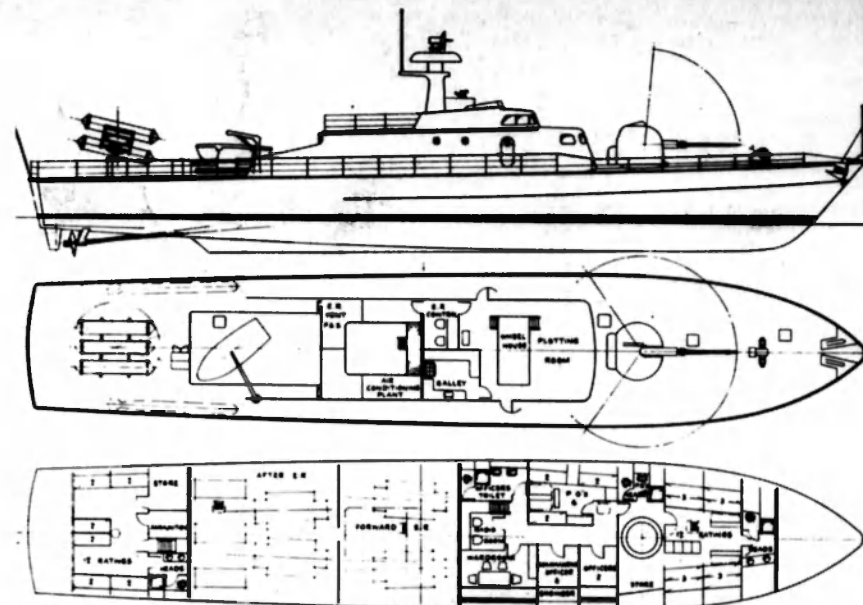
complete instrumentation.

The main switchboard is situated in the same compartment, so that one man can maintain complete

surveillance of all machinery. Engine order and revolution telegraphs are fitted between the wheelhouse and the control room.



Triple screw 142ft fast patrol boat powered by three Rolls Royce Proteus gas turbines and cruising diesels on the wing shafts. The forward gun is an Oerlikon twin 35mm controlled by Contraves Sea Hunter Mk 4, which also controls the four Contraves Sea Killer missiles in two fixed mountings on the aft deck.



Quadruple screw 142ft fast patrol boat powered by four diesel engines. The forward gun is an Oto Melara 76mm controlled by Contraves Sea Hunter Mk 4, complete with stabilised optical sight, which also controls the five Sea Killer missiles in a rotatable mounting on the aft deck. Two torpedoes or other weapons can also be fitted.

Vosper Thornycroft Fast Patrol Boat Design for Venezuela

Venezuela's new squadron of six 37 metre fast patrol boats is nearing completion at the Portsmouth shipyards of the designers and builders, Vosper Thornycroft Limited. Two of the boats have already sailed for Venezuela and the remaining four are at various stages of fitting out and trials.

The FPBs were designed by Vosper Thornycroft to meet the specific requirements of the Venezuelan Navy. The contract for their design and construction was placed in April, 1972, and valued at over £6 million.

The 37 metre boats have steel hulls driven by two diesel engines at speeds of up to 30 knots. Three of the six carry a gun armament consisting of a 76mm Oto Melara gun mounting with associated

Nuova San Giorgio NA 10 fire control system and smaller weapons, while the remaining three are to carry a twin Otomat anti-ship missile system and 40mm gun.

The 76mm Oto Melara gun is a fully automatic weapon capable of rates of fire from single shots up to 85 rounds a minute. It is a very accurate, well tried gun, comparatively light in weight and very suitable for the larger types of fast patrol boat. It has a range of over 16,000 metres. Where used in conjunction with ELSAG fire control equipment, as in these boats, it is effective against missiles, aircraft or ships and can also be used for bombardment.

When the mounting is ready to fire and switched to remote control the first 80 rounds can be fired with the gun completely unmanned, after which it is only necessary to reload the revolving magazine. The complement of each boat is Captain,

three officers, four petty officers and ten ratings, with spare accommodation for two more.

The hull design is a development of earlier Vosper Thornycroft steel FPB forms, having modified round-bilge sections, a spray-deflecting knuckle in the topsides forward, and a spray strake between this and the waterline. The afterbody has a firm rounded bilge and deadrise reducing to about 3 degrees, straight buttock lines and a substantial skeg.

The aim has been a good reserve of buoyancy forward, deflection of spray and solid water, and good running characteristics at speed and in following seas. These characteristics have been confirmed on trials.

The hull structure is of welded steel, on the longitudinal system with deep framing and longitudinal girders and stringers. The hull is

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One of three Venezuelan 37 metre fast patrol boats built by Vosper Thornycroft, fitted with a twin Otomat anti-ship missile system and a 40mm gun.

subdivided into seven watertight compartments by bulkheads formed by riveting aluminium alloy diaphragm plates to the appropriate steel web frames. The weather deck is of galvanized steel and the superstructure of aluminium alloy partly welded and partly riveted.

Main propulsion engines are twin MTU Type MD 16V 538TB90 diesels,

having a sprint rating of 3540bhp each at 1900-1950 rev/min and a maximum continuous rating of 2950bhp each at 1790 rev/min, both ratings being at 20°C ambient air and sea water temperatures. The engines are 16-cylinder, vee-form, turbo-charged, uni directional charge air-cooled, four-stroke units, with air starting.

They are flexibly mounted and flexibly coupled to rigidly mounted MTU reverse/reduction gearboxes incorporating the main thrust bearings and having a reduction ratio of 2.25:1. The gearboxes are arranged to provide outward turning propellers when going ahead. Engines and gearboxes are provided with a comprehensive monitoring and alarm system.

Principal dimensions

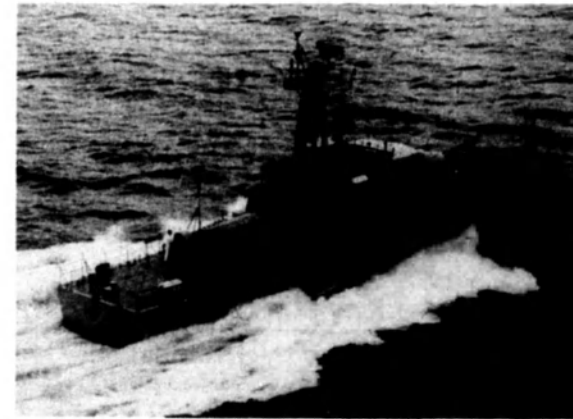
Length overall, 36.88m (121ft);
Length, waterline 33.53m (110ft);
Beam, moulded, 7.16m (23.4ft);
Depth, moulded 3.81m (12.5ft);
Draught, aft, 1.73 (5.7ft)

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LOA 19.6 metres; Beam 4.9 metres; Draft 1.45 metres; Displacement 32,000kg; 24 knots with twin 650hp diesel; 28 knots with twin 900hp diesel; Endurance 500 nautical miles at cruise speed; Armament two 20mm cannons; Complement 3 officers, 8 men; Hard chine from GRP hull, GRP deck and aluminium superstructure.

This GRP 19.6 metre Fast Coastguard Patrol Boat has already been



Three of Venezuela's six 37 metre fast patrol boats are fitted with a 76mm Oto Melara gun.

OUR COVER

HMS TENACITY (P276), a fast Attack Patrol craft, was built by Vosper Thornycroft Limited and commissioned into the Royal Navy on 17th February 1973

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Accommodation can be tailored as required but for off-shore patrols of from four to nine days a typical complement would be three officers, two NCOs and six junior ratings. The crew's quarters are fully air-conditioned.

A full radio and navigation fit can be achieved selected for specific or general purpose roles and the deck is reinforced for armament mounting, typically a 20mm quick-firing cannon mounted forward or aft (or both) and light machine guns on the bridge wings.



TRACKER coastguard patrol vessel built by Fairey Marine Limited, England.



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MINES A Threat Today

by A. W. GRAZEBROOK
Federal Vice-President
the Navy League

Minehunter HMAS SNIPE at anchor in Jervis Bay.

The devastating effectiveness of the mine was first demonstrated by the Japanese seventy years ago in the Russo-Japanese War. Seven decades later, only two years ago, United States mines stopped completely all North Vietnam's maritime trade. Just this could happen to Australia's maritime trade — not in fifteen years but now — and we would be hard put to identify who had laid the mines.

Since World War II, mines have been used in both the offensive (throttling an enemy's trade in coastal waters and port approaches) and defensive (inhibiting an enemy's amphibious attack) roles.

The North Koreans used them in both roles against the United Nations in the early nineteen fifties. The mines were laid by small craft. A number of United Nations mine-sweepers were destroyed and several larger craft damaged, and the threat of mines forced suspension of maritime activity on several occasions.

Mines have been used on a number of occasions in a defensive role in the Suez area during the three major conflicts there since 1948. Clear-

ance of the Suez Canal and its approaches of mines has been one of the factors delaying the re-opening of the Canal.

In the Bangla Desh War, of 1971, both Indians and Pakistanis used mines. The Pakistanis attempted to bottle up the Indian carrier Task Force in Vishakapatnam. The Operation was a failure — the Pakistani submarine PNS Ghazi was destroyed in the approaches to Vishakapatnam. The Indians used mines to prevent the escape of the Pakistani troops in what became Bangla Desh.

In 1972, US aircraft laid mines in the approaches to Haiphong and other North Vietnamese ports. All North Vietnam's external maritime trade ceased, as did much of her coastal trade, until the US Navy cleared the mines from North Vietnamese waters. This apart from demonstrating the effectiveness of the mine, this action finally laid to rest the theory that an attack upon trade will result in escalation to nuclear war.

Probably the most worrying aspect of the mine is the ease with, and low cost at, which it can be laid. Mines are cheap and relatively unsophisticated — they can be and have been used by Indian Ocean regional powers. They can be laid from merchant ships adapted for the purpose — the adaption takes only a

few weeks. They can be laid by purpose built warships, by aircraft or by submarines. Today, there are few purpose built minelayers in the world — the job can be easily done by other means.

Contact mines — the type used seventy years ago — are still in use today. However, other types of mines available today offer a far wider range of capabilities. Types of mines in use today can be divided into two broad types — moored mines and influence mines. A feature of both types is that they are effective only in relatively shallow waters.

Moored mines are exploded by a vessel striking the mine itself or one of its antennae. These mines are relatively easy to clear with the conventional oropesa sweep towed by a minesweeper or helicopter.

While the dangers of the moored mine should not be underestimated, the mine clearance problems caused by the ground (or influence) mines are much greater.

There are three basic types of influence mine:

Acoustic Mines — exploded by the noise of a ship's propeller or machinery.

Magnetic Mines — exploded by a change in the magnetic field resulting from the passage overhead of a

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Stern view of HMAS SNIPER. Even though she has been converted for minehunting she carries some gear associated with minesweepers, notably the divers which can be seen hanging over the stern, and the drums wound with sweep wire. This enables the hunter to work with a minesweeper.

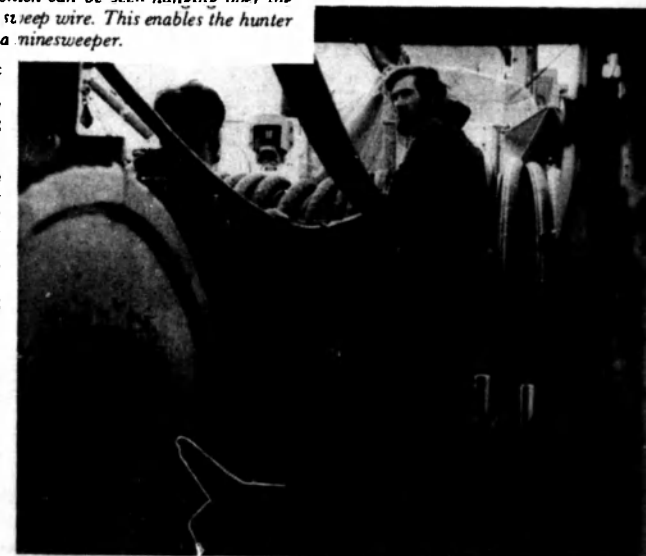
ship constructed from magnetic materials.

Pressure Mines — exploded by changing water pressure resulting from the passage overhead of a ship.

The advent of new types of ground mine — that is, mines laid on the bottom of the sea — has necessitated the development of mine countermeasures (MCM) techniques as a science embracing all MCM activities including the original Oropesa sweeping.

The principle methods of dealing with a magnetic mine are removing the magnetic field of the potential target ship (degaussing, as was done during World War II) and neutralising the mine itself. Until recently, magnetic mines were neutralised by a minesweeper (preferably constructed of wood or other non-magnetic material) laboriously towing electrodes attached to cables over the area to be cleared. A pulsating current, at varying powers

Sailors handling the sweep wire.



to simulate various sizes of ship, created a magnetic field similar to that of a ship and exploded the mine — hopefully, far enough away to avoid damage to the MCM vessel.

Recently, the United States has developed a method of using helicopters for clearing magnetic mines — not the least advantage being that there is no danger of an exploding mine damaging the helicopter.

Pressure mines have proven very difficult for the defence to neutralise. The simulation approach — exploding the mine by simulating the pressures of a passing ship — is impracticable. The only known practicable way of dealing with the pressure mine is to locate by sonar each mine and destroy them individually.

Acoustic mines can be neutralised by simulating the noise of a passing ship.

To complicate further a situation in which the defence must be able to cope with a number of different problems, ground mines can be "multi-influence" mines. That is to say, a ground mine can be exploded both magnetically and acoustically. There can be multi-count mines — they do not explode the first time

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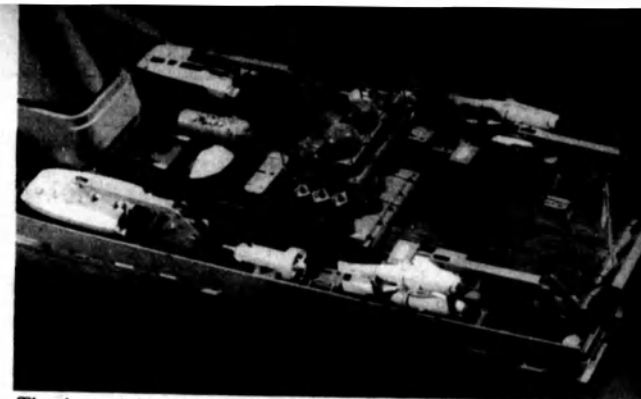
they are activated, but only on the second or more times a ship activates them.

Whilst mines can be laid easily, cheaply and by relatively unsophisticated navies, MCM has become complex and expensive. Limited funds for MCM must be used to ensure the ability to deal with all types of mines.

The large number of mine-sweepers constructed by the Democracies, as a result of the painful lessons of the Korean War, are now approaching the end of their useful lives. At the same time, the Totalitarian countries have shown an awareness of the potential of the mine, and the United States demonstrated only two years ago the prohibitive effect mines can have upon maritime trade.

The coincidence of these three events has led the Democracies to consider carefully the next generation of MCM craft and the methods they will use to neutralise mines.

So far as craft are concerned, two possibilities have been considered — surface craft and helicopters. The



The shape of things on the way; a model of the Vosper Thornycroft 47 metre minehunter, showing the wide variety of gear carried; more versatile and more expensive. The two Sperry Cats are stowed with their own davits just abaft the funnel; abreast the Gemini dinghy is a decompression chamber and abaft this is the stowage for mine-disposal weapons (over the winch). Seamen will be glad to see that there is still some clear deck-space.

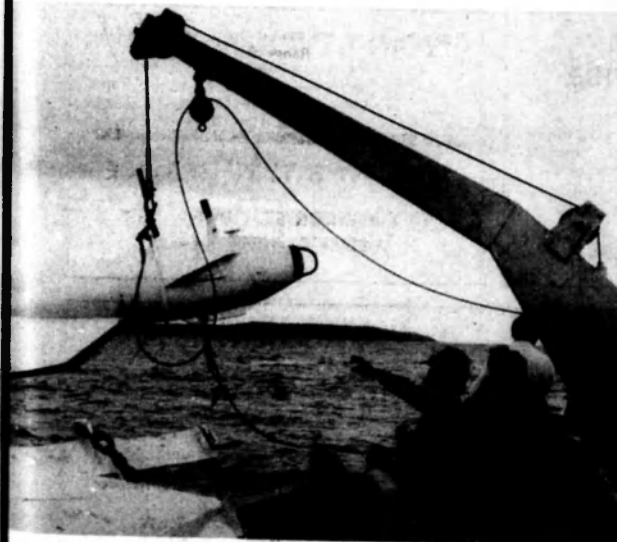
USN has apparently chosen the helicopter (AMCM) as a solution to the problem. Her force of surface MCM

craft has been allowed to decline in numbers, although it is noteworthy that both MCM and AMCM were needed to clear the mines the US had laid in North Vietnamese waters.

This operation — known as End Sweep — was made easier by the US having laid the mines in the knowledge that they themselves could be required to clear them. The mines laid were of a type — magnetic and/or acoustic — that can be cleared by helicopters. The surface MCM craft were needed to clear mines of the same types in deeper waters.

The United States MCM Force assigned to Operation End Sweep comprised about thirty AMCM helicopters, and ten ocean mine-sweepers. The task took six months to accomplish. Two LPDs (landing ships dock with helicopter pad) and one LPH (helicopter carrier) were required to support the helicopters. One elderly LST, modified for maintenance duties, was all that was required to support the mine-sweepers.

The Europeans seem to have opted for the surface MCM craft. They were the first to develop the use of the "sonar" method of mine clearance. This system, known as Minehunting, is practicable for clearing all known types of ground mine. It was first tried out at sea more than a



An Oropesa float being lowered over the side. This float supports the diverter (kite or otter) at the end of the sweep wire.

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The operations room of a minehunter at work. A high definition sonar (not visible) gives a television-like picture of mines found on the bottom, and enables the ship to direct a diver to the correct area.

decade ago in the specially converted minesweeper HMS Shoultan.

To utilise the potential offered by this system, the British and other Western Democracies have converted a number of minesweepers to the minehunting role.

As a result of further development work on the minehunting activity, the French now have operational at sea (in FS Circe and her sisters) a considerable improvement on the British method of launching a rubber dinghy with a sonar reflector beneath. The British direct the dinghy by radio to the target. The mine is then buoyed and divers dispose of it by explosive charges. The new French system removes the need for men in the actual disposal operation.

Australia's position in all this is one of woeful inadequacy, in terms of numbers sufficient to deal with today's threat related to the number of points at which the mine threat can be implemented, coupled with maintaining the skills we have until technical developments and operational experience in Europe and North America clarify which MCM methods would be most satisfactory for Australia in the future.

We now have four MCM vessels. Two of these, HMA Ships Snipe and Curlew, are fully fitted with the British type minehunting capability. The other two, Ibis and Teal, retain

their original minesweeping equipment — to clear moored, magnetic and acoustic mines. Normally, three ships are operational whilst the fourth refits.

The Government has just made

the decision to scrap two further minesweepers. It has been estimated by Vice-Admiral Sir Richard Peek ("The Navy", November-December-January, 1974-75) that the four remaining craft will need replacement by 1977.

Clearly, a decision is necessary as to the type of MCM craft the RAN needs to replace her elderly existing vessels. The RAN will have to choose between the North American (AMCM) approach and the European development of the surface based (SMCM) system.

The AMCM cannot yet cope with all types of mines, is cheaper and can move to mined areas very quickly, but requires much greater support effort "in the field". The new European glass reinforced plastic hulls require minimal maintenance, can cope with more types of mine, and require less "field" support than AMCM. However, each unit is more expensive in initial outlay. It is unlikely there will be sufficient funds for the RAN to adopt both systems.

Whichever system the Navy chooses one thing is clear — the mine is a threat to Australia, not only in after fifteen years but today



A diver operating from a Gemini dinghy, prepares to dive on a mine.

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book review

THE LONG WAY

By Bernard Moitessier

Translated by William Rodamor
252 Pages including Glossary,
Appendix and Eight Pages of Photo-
graphs

Published by Adlard Coles Ltd,
London, 1974

Review by "Ikara"

Our copy supplied by Hicks Smith &
Sons Pty Ltd, 301 Kent Street,
Sydney

Oh no! Not another book about a lone long-distance yachtsman! This sounds unfair and it is by no means meant to denigrate the skill or courage of the author, but it must be admitted that there is no shortage of books on the subject. Readers will remember that I reviewed Val Howells' book "Sailing Into Solitude", about the first single-handed trans-Atlantic race, in these pages not so long ago.

In August, 1968, Bernard Moitessier was one of the competitors in the Round-the-World race for singlehanded yachts, organised by the "Sunday Times". Moitessier was "incensed" at the newspaper's decision to organise this race after they had heard that he and one Bill King were both preparing boats for such a trip anyway. To compete, all you had to do was leave from any English port between 1st June and 31st October and return to it after rounding the Cape of Good Hope, Cape Leeuwin and Cape Horn. Moitessier decided to enter, hoping to win a prize, noting that "the rules did not specify that we had to say thank you." Rather churlish! Why was he so incensed? Did he expect his way to be crowded by hosts of solitary yachtsmen (all writing books, no doubt)? He never really explains, although we learn more about him as the book progresses.

just decided to go to Tahiti. Again, this part of the voyage is glossed over and it seems no time before he has reached Tahiti and joined other yachtsmen there to become a sort of a nautical hippie — protesting against man's rape of his environment. He did at least advise those at home of his decision, but it would have been interesting to see his wife's reaction on receiving the message:

"The Horn was rounded February 5, and today is March 18. I am continuing non-stop, towards the Pacific Islands because I am happy at sea, and perhaps also to save my soul."

What is particularly interesting about the book is the appendix. The yachtsman will find his notes on sails used, masts, rigging, self-steering gear, gales, freak waves, celestial navigation, equipment, clothing, food, maintenance and a variety of other subjects most informative. Almost the best part of the whole book, in fact.

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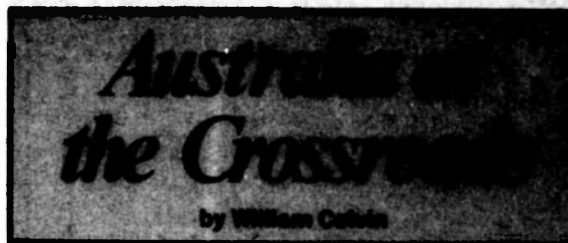
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Introduction

Australia is the world's largest island and, indeed, may be regarded as a continental island. It measures 2500 miles from west to east and 2300 miles from south to north. Its area is about the same as that of the United States, some 3,000,000 square miles, with a 12,200-mile coastline. Most Australians, about three-quarters of the total 12,000,000, live on the eastern, south-eastern, and south western seaboard, within 100 miles of the coast. The seven coastal capital cities hold 56% of the population — Sydney and Melbourne engrossing 40%. The remaining quarter of the population is distributed irregularly throughout the rest of the country. Most of the central portion is arid and with a very small population.

Australia is immensely rich in natural resources, especially minerals and its capacity to grow food and fibres. It is not only predominantly self-sufficient in food but also one of the world's leading exporters of grains, meats and fruits. The country is also self-sufficient in most minerals of economic importance. Recent discoveries have shown Australia to be one of the world's major sources of iron ore, and now, after fruitless searches for several decades, oil has also been discovered in payable quantity.

Australia has made a real effort to modernise its economy and has channelled its important resources and skilled manpower into the most productive sectors of the economy. Until very recently, it has attracted large amounts of private foreign capital because of its more advanced technology, large untapped natural resources and a government that encouraged private enterprise. Hitherto largely dependent for

foreign exchange on exports of wool, wheat and other agricultural products to the United Kingdom and Europe, Australia now has greatly expanded its trade in minerals, manufactured goods, and other industrial products. Its traditional dependence on Britain as the source of capital and markets has lessened in recent years, and the United States and Japan now play key roles in its economy. Especially Japan has replaced Britain as Australia's best export customer.

Because Australia is an island, and heavily dependent on foreign trade for its well-being, all but a tiny fraction of that trade is by sea. The country, therefore, is rather sensitive to the expansion of hostile sea powers in the adjacent waters and the safety of its lines of communication in those areas.

The Australian population is almost exclusively European, its growth rate is 2% per year, about half being immigrants. Sparsity of population is probably the only limiting factor on its role as a potential great power. With a population of only 12,000,000 living in an area of 3,000,000 square miles, Australia clearly cannot expect to be independent in national security. If the continent were adequately populated and its natural resources fully developed, Australia would not today be a small country requiring the protection of some other major powers.

Australia is an accident of geography and European colonialism. Australians are so often puzzled by debate as to whether they are "in" or "out" of Asia, "part of" or "near" the region. Australia is remote from the nearest major friendly power, and successive governments since the colonial period have been sensitive to the strategic situation around them. Its



Australia's Minister for Defence, the Honourable Lance Barnard, MP.

vital interests are inescapably associated with Asia, yet it is not only primarily a European society but also basically committed to the preservation of a homogeneous European population. This may be considered as a paradox to Australia.

Historical Background

In the years between 1787 and 1918, Australia was almost entirely dependent on Great Britain for its defence. It had few foreign policy interests other than maintaining close economic and political ties with the mother country. Great Britain, after the First World War and during the 1930's, Japanese expansionist activities in North-east Asia were noted with concern, but as long as the British Navy dominated the South China Sea and the British base on Singapore was strongly defended, Australians still felt no fear for their own security.

Australia might have succumbed to a Japanese attack in 1942 had it not been turned into a base for the build-up of American forces in the Pacific region. The fall of Singapore in February, 1942, shattered Australia's confidence in British protection and prompted a re-evaluation of its foreign and defence policies. The Second World War thus had a profound influence on the thinking

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of Australian leaders and caused them to seek protection from other quarters in the postwar period. This role naturally fell to the United States.

Because of its position in the southern hemisphere and its size of continental proportion, Australia would have had more reasons to adopt a non-alignment policy after the Second World War than any other nation. However, Japanese penetration to its doorstep in 1942 reminded the country that a "fortress Australia" policy, based only on its own small population and limited military capability, could not provide an adequate protection against any powerful and determined enemy.

During the early postwar years, as worry about a resurgence of Japanese power continued, Australia sought a defence arrangement with the United States. The ANZUS treaty, signed in 1951, was the price it asked for its consent to a Japanese peace treaty. At about the same time, Australia began to show concern over the threat of a united and hostile China under communist dictatorship. Thus, when the United States proposed in 1945 that the interested countries form a South-east Asia Treaty Organisation (SEATO) to prevent the spread of communist power in the area, Australia was among the first to respond affirmatively.

Generally speaking, Australian strategic concept in the 1950's and 1960's had two central propositions: (1) The extension of hostile influence and control over wide areas of South-east Asia, particularly by militant communists, would create a situation that would undermine the security of the countries in the region and pose a threat to Australian strategic interests. (2) A South-east Asian region comprised of free and independent states working effectively in a secure environment on economic, political and social advancement is essential to prevent the spread of hostile power, and to promote international order and progress.

According to this point of view, it was evident that Australia's first line of defence had to be beyond its immediate environs. The main purpose of the so called forward strategy was to protect its outer defence perimeter in co-operation

with its allies. Australians first placed their hopes on SEATO; although geographically speaking their country did not form a part of this region, they eagerly signed the Manila Pact. However, the achievements of SEATO failed to satisfy their earnest hopes, and so they suggested that SEATO should take NATO as a model, create a standing military force and establishing a permanent high command. But the United States opposed these concepts from the very inception of that organisation.

Nevertheless, Australia was not daunted by the reluctance of its allies. As an evidence of its interest in contributing to the collective security of the Asian/Pacific region, the country sent troops to Korea in 1950 and to Vietnam in 1965, besides having helped in a Commonwealth effort in the 1950's to put down the communist insurgency in Malaysia. In short, even though Australia was relatively removed from the principal threat to its security in the decades of the 1950's and 1960's, it maintained a forward defence posture in the Asian rimland because it considered that a South-east Asia dominated by communists would eventually endanger its own security.

Theoretically, Australian foreign relations in this period resembled an equilateral triangle. It had three sides and each represented almost the same importance. In other words, Australia had to cultivate and maintain good relations simultaneously with the United Kingdom, the United States, and the non-communist Asian countries. According to its judgement, success in all three directions would be an essential condition for long-range security.

Recent Changes

The Australian Conservative Government was often accused of having no foreign policy, because it seldom made a definitive statement of overall policy, preferring to take a fairly pragmatic line as affairs developed. The Australian public, however, generally approved the Conservative policy line until the early 1970's. The situation then changed radically and unpredictably, and the Conservative Government found itself confronted with many difficult problems.

The need to maintain the traditional relations with Britain has been never in doubt. But to Australia, recent changes affecting its relation with that country had a quite traumatic effect. To an old member of the British Commonwealth located on the periphery of South-east Asia and long used to the cover given by the British presence in and around the area, these changes have been both sudden and far-reaching.

Australia had stationed forces in Malaysia and Singapore since 1950's. This forward defence posture also had to be discarded as incompatible with the new developments. In view of the declarations of the South-east Asian States themselves in support of neutralisation, it would be very difficult to quarrel with the idea that the Five-Power Defence Agreements are essentially short-term in nature and that Australia has the right to acknowledge this by gradual withdrawal.

After the announcement of the Nixon Doctrine, the United States not only disengaged from Vietnam but has also taken up a new position in Asia. In Australia, the prospect of an American withdrawal from Asia, particularly from South-east Asia, has raised questions more fundamental than those concerned with redefining strategic objectives. The Conservative Government's defence and foreign policies appeared to be in disarray, and Australian policies have been almost entirely based on the concept of the United States as Australia's protector for many years. Without the United States as an active ally, Australia would be uncertain in its political future. It has faced a crisis, not merely of national policy, but of national identity.

In a nutshell, the recent changes in international relations posed a strong threat to the Conservative Government. The major advantage which the Liberal-Country Party coalition had over the Labor Party for 20 years was its good relations with Washington. However, Mr Whitlam, the leader of the Labor Party, has been consistently more correct about the tendency of American policy than Mr Gorton, the then Prime Minister. The result was the election of a Labor Government after 23 years of Liberal-Country Party rule.

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The fundamental rationale underlying the national policy of the Labor Government has been that Australia has been served increasingly poorly in recent years by adherence to cold war postures. The Whitlam Government, therefore, has placed major emphasis on terminating activities which appeared to be intensifying confrontation and intervention rather than bringing about stable order and co-operative relations in the Asian/Pacific region.

There has been an unmistakable disquiet with its alliances, but the Labor Government has not been prepared to make radical changes, although it is very clear that the country would be thrown back on its own resources more than at any time in the past. Mr Lance Barnard, the Labor Minister of Defence, once said: "Most certainly, military and technical aid must be extended and expanded to our friends in Asia, in association with a greatly expanded civil aid programme, but we insist that Australia's defence and its commitments are best assured by the concentration of the bulk of its defence forces on the Australian mainland."

Isolationism remains an undercurrent in Australian politics. There are Australians, including some in high places, who would like to pull back to "Fortress Australia", abandon aid to Asia, build a nuclear deterrent, and put up "Keep Out" signboards around its shores. However, most Australians still accept that their country cannot contract out its Asian environment, and that the security of Australia would be best ensured by the development of political stability and economic prosperity in its neighbourhood.

SEATO and ANZUS

SEATO has been a target of the Labor Party's criticism for a long time. It is viewed principally as a military organisation and was described as "moribund" and "irrelevant" by Mr Whitlam during his election campaign. However, the Labor Government has not yet moved to withdraw Australia from the organisation because it could be done only at the cost of considerable displeasure in Washington. What seems more likely that it will stress the social and economic aspects of the treaty and gradually

decrease its participation of military activities.

Australia's two principal formal alliances are SEATO and ANZUS. As SEATO's life expectancy is clearly limited, what about the future of ANZUS? Although it was created originally to assuage Australian and New Zealand fears of a resurgent Japan, ANZUS has established a much broader, and seemingly more secure, assurance of American assistance against aggression. The importance of ANZUS is growing markedly as the British phase out their forces in Malaysia-Singapore, and as Australia's destiny becomes more dependent on American policy in the Western Pacific. A withdrawal of American power from South-east Asia, while it would be deeply regretted, would not be catastrophic. Australia could accept a decline in its SEATO relationship with the United States because it has ANZUS to fall back on.

However, recent developments have demonstrated two important facts: (1) Until recently, the Australian Government and public opinion have placed unrealistically high expectations on the American alliance, as if the alliance were a substitute for the effort of formulating their own foreign policy. (2) Since the announcement of the Nixon Doctrine, it has been obvious that the United States is going to be less ready to enter into military involvement abroad than in the past 20 years.

Nevertheless, ANZUS is still the primary alliance in Australian eyes. The Labor Government has stated that it seeks "close and continuous co-operation with the people of the United States and New Zealand to make the ANZUS treaty an instrument for justice, peace and political, social and economic advancement in the Pacific area." This indicates that the Whitlam Government has chosen to retain the alliance with the United States through the ANZUS Pact as the basis of Australian security. Certainly this alliance continues to come under attack from the left and doubts are also cast on its value from the right. However, there is such broad consensus of Australian public opinion in favour of maintaining the ANZUS alliance that any abrogation on Australia's part seems most unlikely.

This is not to say that neither the nature of Australian-American relations nor the value of the treaty will change in the foreseeable future. There is inevitably uncertainty in any assessment of American intentions a considerable period ahead. On the other hand, some changes in Australian attitudes regarding international affairs have not found favour in Washington, but unless some radically new departures from existing foreign policy are made, the prospects are that Australia will continue to enjoy close and friendly relations with the United States.

Future Threats

There is no apparent prospect that any country would launch an invasion toward the Australian mainland for many years to come. Few countries would have an incentive to do so, and probably only two of them, the United States and the Soviet Union, would have the capability. Australia is a long way from the major powers in the world, and a good deal of water has to be crossed to get there. This is why Mr Barnard has every reason to say: "In the foreseeable future it is impossible to conceive of any significant external threat to Australia."

However, the relations with four countries could give cause for Australian concern during the next 10 or 20 years. They are Japan, Indonesia, Communist China and the Soviet Union. Although it is widely agreed that there is no immediate threat to Australia's security, the situation on the remote future remains unpredictable.

To Australians, Japan is always a great enigma as well as a potential threat. Despite Japan's crushing defeat in 1945, the nation has rebounded to a position of economic pre-eminence in the Asia-Pacific region, and third only to America and Russia in the world. Japan also has become Australia's leading trade customer, chiefly in raw materials for its massive secondary industry.

Japan's potential military power should not be underestimated. It already has the eighth largest defence budget in the world. It is once again becoming a naval power of some consequence. Moreover, it could become an operational nuclear power in a relatively short

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time. So it is not surprising that some Australians are fearful of the growth of Japanese economic and military powers. They believe Japan is engaged in economic imperialism now, and that military imperialism will follow inevitably.

However, at present and for the foreseeable future, Japan and Australia are, and will be, far too interdependent economically to become military competitors or enemies. On the other hand, these two countries have reasons to consider at least joint protection of the shipping routes between them, or even some co-operation in defence production.

For Australia, a real security threat emerged from the growing ambitions of Sukarno's Indonesia in the late 1950's and early 1960's. The Indonesian Communist Party came close to gaining control of that country. In this area, the 400 miles separating these two nations indeed appears to be a very short distance. Following the Indonesian Army's rise to power in 1966, confrontation against Malaysia was officially ended. Australia thereafter established friendly relations with the new Suharto Government and provided it with substantial economic assistance.

The Whitlam Government has chosen to lay special emphasis on Australia's role as a regional partner. This policy has induced the development of active co-operation with Indonesia in terms of the supply of military equipment, the exchange of information, the provision of reciprocal military training facilities, and the conduct of joint naval exercises. While many of these activities actually had begun before Mr Whitlam came to office, his clear policy of treating Indonesia as Australia's most important neighbour and regional partner, together with Indonesia's wishes for closer relations with Australia, are likely to lead to an increase in the co-operation between these two nations.

Nevertheless, the potential threat remains. Though Indonesia has only a very small industrial capacity, its population is almost 10 times greater than that of Australia. Under a different government and with some outside help, Indonesia could develop an aggressive foreign policy at any time in the future.

Australians have been usually sensitive to the ambition and influence of Communist China. By 1971, however, the United States, which once regarded Communist China as a major threat, had begun to look for ways of coming to terms with it. Afterwards, as one of its first changes in foreign policy, Australia's Labor Government established its diplomatic relations with the Peiping regime in 1973. However, this did not diminish the threat of Communist China in any way.

Until Communist China has a larger navy than at present, it is unlikely to pose any direct threat to the Australian mainland. But the situation could change during the next one or two decades. At least in the near future, Australia's deep concern still will be the situation of South-east Asia. The more the Russians develop their influence there, the more are the Communist Chinese likely to react. The competition between these two red giants could be as dangerous as the co-operation between them.

Prior to the Second World War, Australia was not regarded with any great interest by the Soviet Union. The advances of military technology since 1945 have changed this situation dramatically, because missiles fired from a submarine in the Indian Ocean are now capable of reaching Soviet areas that once were thought to be invulnerable. Hence, the Indian Ocean's waters are today of great importance to the Soviet Union, and so too are the countries bordering them.

The rise of the Soviet sea power and the deployment of its naval units to the Indian Ocean has introduced a new element into Australia's strategic calculations. In the vacuum created by the withdrawal of British power from the Indian Ocean, Russia has become the chief external power in the area. In short, the Soviet Union, with its rapidly growing political, economic and military interests east of Suez, has changed Australia's strategic situation, if as yet only slightly.

The increasing threat in the Indian Ocean, however, has not meant that Australians feel it is as important as the northern waters or the South-west Pacific. Yet in some ways the Indian Ocean deserves more attention than the Pacific. The US Seventh Fleet patrols the latter, but there are very few friendly naval forces in the former. Nearly half of Australian overseas trade traverses the Indian Ocean. The immense mineral resources in Western Australia, together with the rapid industrialisation of that State, have given the western coast a strategic significance it never had before.

At the Crossroads
Australia's approach to international and security problems traditionally has been characterised by reliance upon large and powerful friends and a willingness, within this relationship, to prove itself a loyal and faithful ally. Now a new situation is emerging and the traditional concept is seen as illusory. No nation can, any longer, depend on SEATO, nor even on ANZUS, and much less on UNO.

Put in the simplest terms, Australia is at a crossroads. The changes in international environment are not welcome and pose difficult problems for Australians. The substitution of self-reliance for reliance cannot be easy. But the country must adjust itself to external changes, even though the multipolar system in international politics can prove difficult for all the smaller countries. So far as Australia is concerned, the key issue will be how it should align itself in the triangular contest between the United States, the Soviet Union and Communist China.



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