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By A. W. Grazebrook, Federal Vice-President, The Navy League of Australia.

At a time when Australia's own higher national strategy is under review, it is of interest to students of maritime defence affairs to examine the significance of, and potential errors in, a review of national strategy. Too often, in the past, democracies have used strategic reviews as excuses, as distinct from reasons, for reductions in defence. Some fundamental inconsistencies in recent Australian Government statements and actions, on defence, indicate that the Government may be making the same error.

Von Clausewitz defined strategy as "the employment of the battle as the means towards the attainment of the object of the war". In more recent times, national strategy has come to mean "the linking together of a series of economic, diplomatic and military acts to achieve major national objectives in the best interests of the national population". It is vital to realise that all three types of act are inextricably interwoven. In the case of the military act, the availability of the means to act, or to prevent a military act by another nation, is the vital point.

Recent long and short term cuts in Australia's defences are indicative of a failure to recognise that defence is inescapably a part of Australia's national strategy.

In these circumstances, it is of interest to examine some of the strategic errors of the past and the lessons Australia can learn from them, with particular reference to their effect upon maritime matters.

Strategic errors range from a failure by a nation to appreciate the effects of its own strategy upon another nation and the resulting reaction (eg a resources diplomacy has an effect upon other nations), through the wrong application of technical and tactical intelligence about another country's armed forces, through wrongly assessing another nation's potential for military growth or action, through failure to establish or maintain the necessary armed forces or supporting administrative or logistic structure, through failure to optimise a defence industrial base, to simple wishful thinking (such as that of the Belgians in 1940).

Perhaps the worst strategic errors have arisen from failing to perceive changes or potential changes in the strategic or tactical methods of other nations or groups of people.

As part of her national strategy, Australia is embarking upon a resources diplomacy. Whilst some sort of limitation upon the use of irreplaceable raw materials may well be wise, it is essential to recognise that other nations, who may depend upon supplies of raw materials from Australia, may not accept limitations and take action. We must be prepared for such action. Not only history, but also events today in the Middle East, demonstrate that the primary producing nation who dabbles in resources diplomacy must be able to defend himself. Japan had no option but to go to war in 1941 as a result of other countries' resources diplomacy (the cutting off of oil supplies).

Britain and France went to war in 1939 over resources vital to their
An artist's impression of the US Patrol Frigate which was suggested as a possible alternative for Australia's DDL Programme.

Major industrial nations are dependent absolutely upon raw materials and their safe transport (in most cases necessarily by sea) to the point of use, to ensure prosperity. These raw materials can be threatened in Australia's case without a total conventional or nuclear war, and either at the point of shipment or en route from Australia to their destination. Necessarily, such a threat must come by maritime means — by submarine, mine, or sabotage attack.

The supply of raw materials can also be threatened by the producer-nation (conserving raw materials for his own use or demanding exorbitant prices), or by a third party wishing to injure either the supplier or the user of raw materials. It is manifestly unsound to argue, as has been done by the present Government as grounds for reducing Australia's defences, that major industrial nations would not allow interference by third parties in supplies of raw materials from Australia, when Australia herself is about to practice just such interference (in the form of a resources diplomacy). Indeed, a resources diplomacy makes the Government's argument one for strengthening defence.

Wrong application of technical intelligence is another potential source of strategic errors. Whilst it may be true that some of our neighbours have the warships, but not the logistic support, to operate in Australian waters, it is dangerous to develop our own assessments of threats or defence pressure without recognising that such logistic support can be developed from scratch in a matter of months.

The Shah of Iran, who had coupled resources diplomacy with the development of an ability to defend his nation against all comers, has increased greatly the prosperity of his nation. His example is one from the study of which Australia would benefit greatly.

Economic survival (oil through the Suez Canal). Mr Wilson's British Government and General de Gaulle's France were supplying arms and encouragement to Nigeria and Biafra respectively (Nigerian crude oil) in the 1960s. Today, Russia and the United States are supplying arms and encouragement to Middle Eastern nations (again oil). In each case, the local population of the area of conflict suffered severely.

Wrong application of technical intelligence is another potential source of strategic errors.
the ability to operate at sea for extended periods by chartering a tanker (now INS DEEPAN) and making minor modifications (pumps, derricks etc) over a month or so. Britain supplemented her own fleet's endurance in a similar way in the early 1960s. Our neighbours could do the same.

At first glance, it is difficult to see how administrative or organisational decisions can fail strategic errors. However, a glance at the history of the 1939-45 maritime war quickly provides an example. In 1918, unlike other major powers, Britain decided to establish an independent air force. This, coupled with a lack of strong political administration, resulted in the over application of resources to the development of a strategic bombing capability, at the expense of maritime (and other types of) airpower. This major strategic error wasted enormous resources upon a weapons system which failed to achieve its objective in war and left Britain with totally inadequate (technically and (numerically and technically) maritime aircraft in 1939.

Australia is reviewing now its whole defence organisation. Whilst this is undoubtedly desirable in principle, to our defensive conscious person would deny the importance of ensuring an organisation which assesses military strategy accurately, fits in with the other arms of the national strategy, provides optimum use of defence resources, and includes the necessary support echelons. However, care must be taken to ensure that the organisation provides the appropriate balance between personnel with operational experience (the user) and administrators. This balance will not be achieved by the new organisation.

The strategic significance of an industrial base is not in dispute. Indeed our technological manufacuring ability is one of our strengths in our Indian Ocean neighbourhood. The extent to which further defence resources should be allocated to additional development of this industrial base is a matter for line judgment. However, it is clear that we must have a total capability in a particular area. It would be of no help to us, in war, if we could build (say) wings for aircraft, but not their fuselages. From a strictly defence viewpoint, we should not devote defence money to aircraft unless we can build whole aircraft. A similar situation applies to warships or tanks. If the provision of employment is a major factor influencing the deployment of additional defence resources in the industrial base, then the cost should be charged to social security.

In an enormous, sparsely developed country such as Australia, the strategic significance of a logistic system is manifest. The planned change from a forward to a continental defence system will require the devolution of additional defence resources to logistics. Our forces will have to be capable of being moved to, supplied in, or operating in, any part of Australia. This is in sharp contrast with the much simpler problems of operating overseas as an integral part of much larger forces.

Logistics is one area of defence administration which the Government has scheduled for change. It must be ensured that the right balance is achieved between operational needs (eg the location of stores depots in remote areas) and administrative economics and convenience. It must be said that the planned virtual exclusion of naval supply operational experience from the Supply Area of the Defence Department does not augur well for the achievement of this balance.

When he said that "we always seem to try to start fighting the next war where the last one left off", Prince Philip, Duke of Edinburgh, was highlighting a serious strategic error — the failure to appreciate changes in strategic and tactical thinking. For example, France failed to observe that by the 1930s the 1918 dominance of the defensive had given way to mobility. France devoted enormous resources to the construction of the Maginot Line. These resources were wasted in that they failed totally to prevent the defeat and hostile occupation of almost the whole of France.

To develop national strategy, great breadth of outlook and concept is essential — frequently greater than is available in one man or particularly one specialist expert. For example, a nation cannot assume that, because no nation used gas in World War II's total warfare, it will not be used in a limited war in 1980. Nor can the converse be assumed. Similarly, Australia must not assume that, because action against merchant vessels is regarded as a high degree of escalation in the Viet Nam war in the 1960s, it will be similarly applied in different circumstances by different nations. Such pressure was applied in many parts of the world for centuries, often without war being declared.

Military pressure against Australia has immense strategic attractions to Australia's neighbours. Once their national strategy indicates the desirability of applying such pressure. The inherent disadvantage of a defensive posture for a huge sparsely populated island continent, the fact that maritime pressure involves physical danger to a minimum number of civilians, the ability to ignore a high degree of maritime pressure, the large diversion of defence resources that maritime pressures would require of Australia and, most important, the fact that a number of our neighbours have now the necessary naval hardware, all make maritime pressure against Australia attractive.

Another example of faulty strategic thinking is Australia Government's persistent reference to "threat" or "no threat" situations in terms of there being no possible danger except massive armed invasion of Australia. There are many other, more serious, real possibilities that these other threats, or forms of maritime pressure, will become a reality in 1975-85. The naval hardware to apply such pressure is in the hands of our neighbours now. But we have failed to recognize this, and develop defence resources to combat it, would be a serious strategic error. Our maritime trade is particularly vulnerable to such pressure, as we are still heavily dependent on imports of primary products and imports of specialised equipment, raw materials, and sophisticated manufactured goods.

Finally, and perhaps of most danger to a democracy such as Australia, there is the danger of strategic error by default — by Governmental failure to face up to facts, by ignoring unwelcome developments in the vain hope that they will go away, by naively believing that nations will not attack nations of similar political or religious ideology. Some section of the community fail, or are unwilling, to recognise that armed conflicts develop because it is in the interests of one party or the other to attack. There is no better way of ensuring that one's neighbours remain friends than to make sure that it will cost them more than they will gain to attack you.
PELZEEY MONITORING EQUIPMENT

The Royal Australian Navy has contracted for supply of a Plessey Radio P/Ps 1100A multibeam antenna array and ancillary equipment.

The system, which is used in both a civilian and military context, possesses very considerable advantages over conventional methods particularly with respect to performance and the ground area required for operation.

DUKE OF GLOUCESTER'S CUP

The River-class destroyer escort, HMAS STUART, has been awarded the Duke of Gloucester's Cup for the ship with the best all-round performance in the Royal Australian Navy in 1973.

STUART, (see photograph) this year took part in the RIMPAC international exercise near Hawaii and the ANZUK exercise in the South China Sea.

The Duke of Gloucester's Cup is awarded to the ship which has been foremost in general efficiency, cleanliness, seamanship and technical training during the year.

The winner is entitled to paint a 24-inch star on the outboard sides of her bridge.

CANADIAN NATIONAL DEFENCE COLLEGE

Staff and members of the Canadian National Defence College visited Australia from 6th to 10th February as part of a field study tour to Asia and Africa.

The group also included officers of the British and United States Diplomatic Service and Service officers from Australia, Britain and the United States.

DESTRUCTORS FOR THE RAN

Decisions to maintain the destroyer capability of the RAN, and to keep abreast of rapidly advancing technology, were announced during December, 1973, by the Deputy Prime Minister and Minister for Defence, Mr Lance Barnard.

Mr Barnard said approval had been given for the modernisation and extensive refitting of three of the RAN's River Class destroyer escorts, including gunning, anti-submarine weapons, hull and machinery. A fourth destroyer escort would be modernised so as to give all four ships an additional ten years of operational life after the modernisation had been completed. The updating of the destroyers would bring about significant savings in manpower.

The first modernisation would start at Williamstown in the second half of 1976 and the last would finish late in 1980. Depending on where the modernisations were carried out the total programme could cost up to $61m at 1973 prices.

The Minister said the decision to extensively modernise existing destroyers would not remove the need to proceed with planning to acquire new destroyers for the RAN. The Government had endorsed the need for a new destroyer acquisition programme for the Navy. He also indicated in his statement to Parliament on 22nd August that further investigations were being undertaken into designs to satisfy the requirement. Ships ranging from 800 tonnes to about 4500 tonnes were being considered and some 50 worldwide ship designs were included in the initial assessment.

Mr Barnard said the consideration of alternatives would be based on the latest strategic assessment, and an established design or a close derivative would be preferred in the new investigations. It was expected that the Government would make a provisional decision on a programme to acquire new destroyers next year and the final approval was anticipated by mid-1975.

Ten of these Sea King Mk 50 anti-submarine cargo helicopters are to be bought by the RAN. Westland Helicopters Ltd of Yeovil, UK, will build the aircraft for $2 million each. Each will have a crew of four - two pilots, an observer and an aircrewman. As well as becoming the Navy's anti-submarine helicopter, the Sea King can also be used for replenishing ships at sea or in troop movements.

SEAS KING HELICOPTERS AND SIMULATOR

The RAN is to definitely get the 10 Westland Sea King helicopters on order for the Fleet Air Arm (see photograph).

When the new helicopters enter service in 1975 they would be scheduled to share the planned annual flying programme, but only seven would be in use at any one time.

The group also included officers of the British and United States Diplomatic Service and Service officers from Australia, Britain and the United States.

DEFENCE COMMUNICATIONS EQUIMENT

A Defence Communications Automatic Relay station (known as DEF-COMMARS) was officially handed over to the Defence Department in Canberra on 29th November, 1972.

The new station, installed in the Russell Hill Defence Complex, is managed by the Navy for the Defence Department. It uses computers to link all points in the Australian defence communications network, enabling the three armed services to communicate with their units in a matter of minutes.

Introduction of the new system is the first stage of a long term programme to rationalise Defence communications.

Equipment for the station was supplied and installed by Sperry Univac Computer Systems under a $1.1 million Defence Department contract.

HMAS CAIRNS

The RAN's Patrol Boat Facility at Cairns, North Queensland, was commissioned on 1st February, 1974, as a Patrol Boat Base.
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The Navy's newest ship, the hydrographic survey ship HMAS FLINDERS, has commenced operations from her home port of Cairns, Queensland. The 750 ton FLINDERS has replaced a converted trawler HMAS PALUMA and carries modern equipment for accurate survey tasks.

The base, named HMAS CAIRNS, has an initial complement of four officers and 29 sailors under the command of Commander J. M. Yates. A squadron of three patrol boats, HMAS Ships BAYONET, BARRICADE and BARBETTE, plus the new survey vessel HMAS FLINDERS, will be permanently attached to the base.

HMAS CAIRNS grew from a small naval facility established on 31st January, 1971. The squadron of patrol boats was attached to the facility on September 1st, 1972, and the facility became the refitting centre for the RAN Patrol Boat Squadrons from Darwin and Papua New Guinea in June, 1973.

HELICOPTER FOR SURVEY DUTIES

The RAN has taken delivery of a Bell 206B-1 helicopter manufactured by the Commonwealth Aircraft Corporation, Port Melbourne. The aircraft, the Navy version of the Army light observation helicopter, will replace the RAN's Westland Scout survey helicopter which will soon reach the end of its economic life.

From early 1974 the new helicopter will be carried in the RAN hydrographic survey ship HMAS MORESBY (see photograph) and will initially be used in survey operations off the east coast of Tasmania. This is the first of two Bell 206B-1 helicopters being provided to support HMAS MORESBY.

ROYAL COLLEGE OF DEFENCE STUDIES

Six senior officers from the Australian Services have been selected to attend the 1974 12-month course at the Royal College of Defence Studies in the United Kingdom.

The officers selected are:

Navy: Commodore A. A. Willis, OBE; Captain W. J. Rourke
Army: Brigadier J. R. Salmon, CBE; Brigadier D. D. Weir, CBE
RAAF: Group Captain R. J. McKimm, CBE, AFC; Group Captain H. K. Parker

The purpose of the course is to give selected senior officers of the Commonwealth and allied nations the opportunity to study problems of national and international strategy and security, international relations and those aspects of public policy which are related to defence and security.

Rear-Admiral H. A. Showers, CBE, admires the Queen’s Medal worn by Acting Sub-Lieutenant John Stanbury, 21, of Liverpool, at Jersey Bay recently. John was one of 38 Midshipmen promoted on the Diamond Jubilee promotion parade of the Royal Australian Naval College, HMAS CRESWELL. He won the medal for displaying the "most exemplary bearing, conduct, performance of duty and good influence among his fellows" during training.

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NAVAL COLLEGE CELEBRATION  
The Royal Australian Naval College, HMAS CRESWELL, celebrated its Diamond Jubilee and the promotion of 38 midshipmen at a full ceremonial parade on 6th December.  

It was one of the most colourful occasions in the 60 years since the college opened at Osborne House, Geelong, on 1st March, 1913.  

More than 250 guests from many parts of Australia went to Jervis Bay to see the Governor-General, Sir Paul Hasluck, review the parade (see photograph) and present Acting Sub-Lieutenant’s epaulettes to the Midshipmen.  

They included the Chairman of the Chiefs of Staff Committee, Admiral Sir Victor Smith, the Chief of Naval Staff, Vice Admiral H. D. Stevenson, three other Service members of the Naval Board, and the Chief of the Air Staff, Air Marshal C. F. Read.  

A special guest was a member of the 1913 college entry, Rear-Admiral H. A. Showers, 74, (see photograph) who is a former Captain of the college and the first college graduate to become a member of the Naval Board.  

Relatives and friends of the Midshipmen came from as far away as Perth to see the parade.  

CIVIL RECOGNITION FOR RAN APPRENTICE TRAINING  

RAN apprentices will in future be awarded civil trade certificates on successfully completing their courses.  

Agreement on civil trades recognition for RAN apprentices has been reached by the NSW Apprenticeship Board, the NSW Department of Technical Education and the Department of the Navy.  

In future, fourth year RAN apprentices will sit for final examinations set by the Department of Technical Education. If successful, they will be awarded civil craftsmen’s certificates by the Apprenticeship Board. Depending on their RAN category, navy trainees will be awarded the civil certificate as fitter and turner, shipwright, electrical fitter (power) electrical fitter (electronics), electrical fitter (communications) and fitter.  

NSW apprenticeship qualifications are recognised in all States of Australia. In the past RAN apprentices who qualified as tradesmen were awarded the Naval Trade Certificate. Although RAN training did not formally qualify for civil recognition, navy trained tradesmen were much sought after by industry when they completed their naval service, and this demand is expected to continue. Civil recognition will be an additional attraction to young men thinking of undertaking naval apprenticeships.  

In July 1972 the RAN reduced the length of its apprenticeships from five years to four, following the trend to shorter apprenticeships in industry.  

OUR COVER  

Rear Admiral Rudy Pursana, Commander of the Indonesian Fleet, with Rear Admiral A. M. Symnot, the Flag Officer Commanding the Australian Fleet, during Exercise Southern Cross off the New South Wales south coast. It was the first time that Indonesian warships had taken part in joint exercises in Australian waters.  

Two Indonesian frigates, RI JOS SOEDARSO and RI LAMBUNG MANUKI R, supported by the oiler RI SORONG, took part in the four day exercise.  

Australia’s task group comprised the destroyer tender HMAS STALwart, the destroyer HMAS VAMPIRE, the destroyer escort HMAS SWAN and the submarine HMAS OXLEY of the RAN. Two maritime patrol aircraft from the Edinburgh base in South Australia also took part.
The latest warship design to be announced by Vosper Thornycroft Limited is for a 47-metre minehunter in glass reinforced plastics.

Drawing on past experience as the parent company for the construction of the “Iron” class coastal minesweepers of which over 100 were built for the Royal Navy and overseas services, and a number later converted to the minehunting role, together with the more recent construction of HMS WILTON, the experimental glass reinforced plastics minehunter for the Ministry of Defence, the warship specialists have designed a modern but economical vessel aimed at the large world market for minehunters and minesweepers. This is a rather smaller and simpler ship than the projected Royal Navy mine countermeasures vessels (MCMVs) on which the company is working with the Ministry of Defence.

Glass-reinforced plastics are becoming accepted as the best available class of materials for the construction of minehunters and minesweepers, because they are non-magnetic, highly resistant to shock loads, and give a very high strength for their weight. They also promise to bring about savings in maintenance, when compared with timber and steel, because they are not subject to corrosion or decay. The navies of a number of countries have expressed interest in minehunters or minesweepers in the material.

The ship has been designed, in consultation with the British Ministry of Defence (Navy), primarily as a minehunter, but with provision for operation as a minesweeper, and suitable for routine patrol duties as well. The armament scheme has been chosen mainly to provide self-defence against aircraft, while occupying as little space as possible and having little effect on the ship’s magnetic signature. A BLOWPIKE short-range missile system will be installed forward, and two Hispano Suiza 20mm guns aft. These are manually controlled and virtually aimed. If increased emphasis on the patrol craft role is envisaged, automatic weapons and stabilisation equipment can be fitted.

To equip the new ship for its main role as a minehunter, Vosper Thornycroft have developed a scheme of equipment to cover the four main phases of minehunting operations: navigation and position fixing, plotting, mine detection, and mine disposal. The scheme is selected to give the best available combination of effectiveness and economy, but variations to meet special requirements can of course be made.

The main Decca position fixing system consists of a shipborne interrogator/receiver working with two or more miniature transponder beacons set up on land, or if necessary on buoys. The information from the system, which depends on range only and gives higher accuracy than is possible with bearing data, is fed automatically into a digital calculator which operates a miniature automatic control system as a minesweeper, and suitable for the necessary special equipment can be fitted.

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Details of the Pleuger active rudders used for accurate manoeuvring at slow speeds (6 knots) are shown on this view of the model of the new Vosper Thornycroft 47-metre minehunter.

To keep it under closer control, vehicles can be handled or re-armed on both sides of the sweep deck at the same time.

For wire sweeping of moored mines a hydraulically driven winch and double oropesa sweep are fitted. A beam of the ship is carried well aft to provide a broad working space amidships clear of other deck fittings.

The ship can readily be converted to a minesweeper by removing the mine disposal equipment from the sweep deck to make room for a hydraulically powered magnetic sweep reel. Stowage is also provided on one side of the sweep deck for an Osborn acoustic sweep and 3-ton davit, and on the other side for the Gemini dinghy. The pulse generator for the magnetic sweep can be accommodated in the main machinery space, with its control gear in the adjacent compartment. Removing the motor units from the active rudders would complete the conversion.

In the event of vessels being built to the new Vosper Thornycroft design primarily for use as minesweepers the trunk for the 193M sonar would be moulded into the structure to facilitate later conversion to minehunters if required.

The combination of its GRP construction with the elimination of virtually all ferro-magnetic material from the ship gives the minehunter a very low magnetic signature. With a sophisticated, modern de-Gaussing system, it will be considerably safer from magnetic mines than a conventional coastal minesweeper.

To reduce the noise signature the machinery installation has been designed to minimize air-borne and water-borne noise. Acoustic protection and intake and exhaust silencers are fitted to reduce air-borne noise. To limit water-borne noise main and generating engines are raft-mounted, rotating machinery fitted on flexible mounts with flexible pipe connectors, and exhaust systems are resiliently mounted. The size and displacement of the ship is such as to provide good self-protection against pressure mines.

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

The League supports the Naval Reserve Cadets who are administered by the Royal Australian Navy, which Service provides technical sea training for boys who intend to serve in the Naval or Merchant Services, also to those sea-minded boys, who do not intend to follow a sea career, but who given this knowledge will form a valuable reserve for the Naval Service.

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

The League consists of Fellows and Associates. All British subjects who support the objectives of the League are eligible for membership. Members receive copies of the League's magazine "The Navy".

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The training time for naval officers of the Royal Australian Navy has changed over the years from sea-going to mainly shore side. From practical work and experience to an emphasis on theory and education at a tertiary level. In this sophisticated age it is essential that officers have a good grounding in technical training and tertiary education but at the same time they must not lose the basics of their profession — namely a deep and proper understanding of the sea.

The aim of this paper is to study the basic qualities required by a naval officer and how he should learn them; then to discuss that the best medium in which to train him is under sail.

Before arguing the case it is appropriate and interesting to quote an editorial from the Times Newspaper in 1899 at the time the Royal Navy gave up sail training. It should be noted that the reasons given in those days for retaining sail training are even greater now for re-introducing sail training due to the increased sophistication of our ships.

"The accidental extinction of the old Training Squadron by the side wind of a temporary emergency may be sound policy for the moment nor are we in the least concerned to question the decision of the Admiralty in such a manner. But the real issues involved are far too important to be foreclosed in this way. Professional opinion is, as we know shrewdly divided on the question. The bluejacket in a modern man-of-war is admirably trained in the duties appertaining to his position. But they are largely mechanical duties, making little or no demand on his self-reliance and resource. What he learns is to do as he is told, to do it well, willingly, and maybe intelligently. He has very little concern with the result of what he does, which is for the most part mechanically fore-ordained.

But in the handling of masts and sails a man begins by learning that on his individual efforts and skill depend his own safety, and that of his shipmates. Whatever of fearlessness, of resource, of quick observation of instant helpfulness reside in his nature is evoked by self-interest and quickened by comradeship: and the dullest cannot but realise that on the exercise of qualities such as these depend his success, his happiness, very often his life.

"The same stimulating influence, heightened by an early and urgent sense of responsibility, is brought to bear on the young officer. The moment he takes up his duty every quality he has must be ready for ir. tant service. He knows that men's lives depend on the quickness of his eye and the steadiness of his nerve.

He is dealing with forces, inconsistent and incalculable, which may at any moment entail mishap or even disaster unless his is swift to perceive and prompt to remedy what has gone amiss. He learns too to understand men, because after all it is in emergency and not in routine that human nature comes to the front, and by understanding them in this common comradeship of danger he learns how to rule them.

"In a modern man of war such opportunities as these are far less frequent both for officers and men, even if they exist at all. Whatever officers and men learn there they learn admirably, and, with great zeal, goodwill and good sense that animate the whole Service, they learn much more than might be expected. But the question still remains: do they and can they learn all that the discipline of masts and sails teaches them as a matter of course? If they do, well and good if they do not, can we afford to discard this invaluable disciple from training of our future bluejackets and naval officers?"

The young men joining the Royal Australian Navy between the world wars and for some years after, spent the majority of their formal naval training period at sea firstly in a ship of the Royal Australian Navy then in a Royal Navy training cruiser. Those who joined the Navy at 13 or 14 years spent 3 to 4 years in a college but this was primarily academic and secondary naval training. The sea time totalled about twelve months. Since the early sixties the emphasis has shifted to shore-based training, nowadays including university education, with a short period of sea training lasting ten weeks. In past days midshipmen (as they became on completion of initial sea training) went to sea in ships of the fleet as
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Page Twenty-five
members of a gunroom (junior officers' mess) where their education was a direct enlargement of what they gained carrying out the training ship. Today they are members of a wardroom (officers' mess) in ships varying in size from an aircraft carrier to a patrol boat. Here training is technical with little emphasis on the basics of their trade or on development of the required qualities.

Why do we require sea training for the young officer? Because he is being trained as an officer in a service whose business it is to keep ships at sea for the protection and well being of this country. The sea is a powerful force that can wreck a ship, and that must be coped with and sophisticated they may be. Naval officers must know how to survive the sea and its onslaughts, and likewise all the sophisticated knowledge and abilities given them will be of no avail if these points are not illustrated by the following story of shipwreck in our day. It happened in 1968.

The WAIHINE was a stern door vehicular ferry of 8964 tons displacement, powered by turbo alternators producing 18,000 shaft horsepower on three shafts. The engines were located in rudders, side thrusters fore and aft and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar. She was a most mobile vessel, latest in wardroom and the latest in navigational radar.
Mistships at sea measuring the altitudes of the celestial bodies.

...
The Royal Australian Navy sends young cadets to the sail training ship Gorch Fock for training. Obviously the smaller size vessel would be too small, and also does not provide work alert or good navigation facilities. The ships of the Gorch Fock size are too big, therefore the best size is in the 300 800 four masted schooner with square fore and the best size is in the 300 800 three masted schooner with square fore. Therefore three masted schooner with square fore is the best size. Thus the Royal Australian Navy enters a contract with the German shipyards of the Focke-Wulf Werke AG to build a new training ship. The new ship is to be called the Pamir.

A training ship can be built undersea, and a merchant man of the sea era. Both these ships carried a very important fact that the ship was visited by more than 20,000 people.

The Pamir was owned by a merchant shipping line, she was used as she was designed, to carry bulk cargoes. Public opinion after her loss prevented her sister ship the Passat from sailing again, thereby ending the great tea and wool clipper ship era. Both these ships carried cargo, which is a threat to a ship heeled over underway can shift. The Gorch Fock or any other sail training ship was not designed or built for cargo carrying. She was modified following the Pamir disaster by the addition of greater ballast and more bulkheads. A ship designed for training has no holds, no cargo to shift therefore no changes to her draught and stability. A training ship can be built undercramdressed, but a merchant man of similar displacement whose main aim is to achieve the fastest possible passage can be overcramdressed. Finally she will have an adequate crew to enable sail to be reduced in a hurry. A square rigger or for that matter any sailing vessel is acknowledged to be steadier than an equivalent sized power driven vessel. Naturally a sail training ship would be fitted with an auxiliary engine and the latest navigational aids and such a ship can be regarded as one of the safest ships afloat.

Having argued the case for a sail training ship in the Royal Australian Navy let us now examine the reasons why another navy trains its officers under sail followed by a look at the views on the subject by a well known master mariner (sail) and writer. The Navy chooses the Chilean Navy as the best ship training vessel. The Chilean Navy has been able to achieve the highest standards of navigation and habits. Our training ship, Esmeralda, is looked upon with interest by all the above mentioned and she is widely known throughout the countries she has visited. The sailing ship, the best school. The Chilean Navy's reasons for retaining a sail training vessel are listed by the Chilean Naval Attache to Australia, Captain Jorgeonza, es. Quez. We think that the young officer, before becoming a technician in his profession, must be a seaman and it is considered that a sailing ship is the best school.

When living together is very important in the Navy especially in small ships and submarines. Long periods of navigation help to know the reactions of the young officers will have in front of a career that will demand a lot of sacrifice and being away from their families for a long time. It is considered also a way of measuring the character and to observe if they are really fit for the future demands of life onboard.

The tranquility of this scene, with Sir Winston Churchill in the foreground and Poland's DAR POMORZA (left) and Germany's GORCH FOCH (right) on the eve of the Tall Ships' Race, 1972.
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# ANNEXURE "A" TO INITIAL SEA TRAINING OF OFFICERS IN THE NAVY

## SAIL TRAINING SHIPS OF THE WORLD

**Naval Training Only — Incomplete**

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>SHIP</th>
<th>BUILT</th>
<th>RIG</th>
<th>FULL LOAD DISPLACEMENT (TONS)</th>
<th>DIMENSIONS (FEET)</th>
<th>OFFICERS</th>
<th>SAILORS</th>
<th>CADETS</th>
<th>TOTAL CREW</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARGENTINA</td>
<td>LIBERTAD</td>
<td>1956</td>
<td>Ship</td>
<td>3,765</td>
<td>301 x 47 x 21.8</td>
<td>20</td>
<td>200</td>
<td>150</td>
<td>370</td>
</tr>
<tr>
<td>COLUMBIA</td>
<td>GLORIA</td>
<td>1968</td>
<td>Barque</td>
<td>1,300</td>
<td>212 x 34.8 x 21.7</td>
<td>NK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAST GERMANY</td>
<td>WILHELM PIECK plus 4 smaller yachts</td>
<td>1951</td>
<td>Brigantine</td>
<td>200</td>
<td>NK</td>
<td>NK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GERMANY</td>
<td>GORCH FOCK NOROWIND plus 70 smaller vessels</td>
<td>1958</td>
<td>Barquentine Ketch</td>
<td>1,870</td>
<td>257 x 39 x 12.8</td>
<td>10</td>
<td>56</td>
<td>140</td>
<td>206</td>
</tr>
<tr>
<td>INDONESIA</td>
<td>DEWARUTJI</td>
<td>1953</td>
<td>Barquentine</td>
<td>1,500</td>
<td>191 x 31 x 14</td>
<td>6</td>
<td>26</td>
<td>78</td>
<td>110</td>
</tr>
<tr>
<td>ITALY</td>
<td>AMERIGO VESPUCCI PALINORO STELLA POLARE CORSARO II</td>
<td>1931</td>
<td>Ship</td>
<td>4,146</td>
<td>270 x 51 x 22</td>
<td>20</td>
<td>380</td>
<td>150</td>
<td>550</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1920</td>
<td>Barquentine</td>
<td>1,450</td>
<td>228 x 32 x 18.7</td>
<td>10</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1964-65</td>
<td>Yawl</td>
<td>47</td>
<td>69 x 15.4 x 9.8</td>
<td>10</td>
<td>NK</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1959-60</td>
<td>Yacht</td>
<td>41</td>
<td>68.6 x 15.4 x 9.5</td>
<td>10</td>
<td>NK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETHERLANDS</td>
<td>HENDRICK KARSSEN HOBEIN URANIA</td>
<td>1939</td>
<td>Schooner</td>
<td>185</td>
<td>137 x 20 x 5.5</td>
<td>4</td>
<td>14</td>
<td>30</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>* DAR POMORZA</td>
<td>1938</td>
<td>Schooner</td>
<td>132</td>
<td>92 x 19 x 5.5</td>
<td>2</td>
<td>8</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>POLAND</td>
<td>ISKRA</td>
<td>1917</td>
<td>3 masted Schooner</td>
<td>560</td>
<td>128 x 25 x 10</td>
<td>6</td>
<td>24</td>
<td>40</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1909</td>
<td>Ship</td>
<td>1,560</td>
<td>240 x 41 x 21</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTUGAL</td>
<td>SAGRES</td>
<td>1938</td>
<td>Barquentine</td>
<td>1,869</td>
<td>249 x 39 x 17</td>
<td>133</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROMANIA</td>
<td>MIRCEA</td>
<td>1939</td>
<td>Ship</td>
<td>1,604</td>
<td>239 x 39 x 16.5</td>
<td>8</td>
<td>75</td>
<td>140</td>
<td>223</td>
</tr>
</tbody>
</table>

Note: There are other ships such as Norwegian SORLANDET, UK SIR WINSTON CHURCHILL, which are private or merchant marine vessels.

NK: Not Known.

*: Provides personnel and training for the Navy, but is not on the Navy list.

## ANNEXURE "B" TO INITIAL SEA TRAINING OF OFFICERS IN THE NAVY

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The following publications have been consulted:
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- Hazards of the Sea — Captain J. Noble — Angus and Robertson.

Training under Sail — A. Villiers — (not known).
- Assistance was also received from: Captain Jorge Gozaba — Chilean Naval Attaché, Chilean Embassy, Canberra.
- The Sailing Training Association of Great Britain.

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BRAZIL

Two further "Schulte" class mine sweepers have been ordered by the Brazilian Navy from Abeking & Rasmussen. It is also announced that negotiations have been completed for the purchase of a destroyer, the second in two years, and a further submarine from the United States.

PLESEY TO EQUIP BRAZILIAN WARSHIPS

The Brazilian Navy's newest ship, the missile destroyer "Niteroi", due to be launched at the Woolston Southampton yard of Vosper Thornycroft is to be fitted with Pyosey's latest version of the AWS-2 naval surveillance radar, together with an automatic IFF Mark 10 system. The destroyer is the second in a two-year series of ships ordered by the Brazilian Navy from Vosper Thornycroft, the first being the "Margaree". Two further "Schutze"-class mine sweepers have been ordered by the Brazilian Navy from Abeking & Rasmussen. Negotiations have been completed, and a further second ship is due to be launched at the Woolston Southampton yard of Vosper Thornycroft. The destroyer "Niteroi" has a full load displacement of nearly 4000 tons. Each ship will be equipped with conventional weapons and will carry a Lynx helicopter. The Millstone V-Lynx helicopter is the most advanced helicopter in the world. It is designed to provide all the targets for the computerised action control system. At sea trials, the helicopter-destroyer has completed all Sea trials and been commissioned into the fleet on 3 November last at Lauzon.

CAV PILOT TRAINING

Plesey's latest version of the AWS-2 radar, together with an automatic IFF Mark 10 system, is to be fitted to the destroyer "Niteroi". This latest version of the AWS-2 radar is a fully stabilized antenna of high performance, ensuring consistent and accurate detection of both air and surface targets. The AWS-2 system, which is fully integrated with the radar, is designed to operate under computer control, enabling the identification to be precisely correlated with the primary radar data. A Canadian Forces Tracker aircraft flies past an iceberg during a routine patrol of the northern waters. Maritime Command aircraft regularly patrol Canadian coastal and northern areas on ice reconnaissance, surface and subsurface surveillance flights, as well as fisheries and pollution patrols, and search and rescue duties.

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INDONESIA

PATROL BOAT GIFT

The Minister for Defence, the Honourable Lance Barnard, officially handed over an Australian Navy Patrol Boat to the Indonesian Navy — the first gift under an Australian/Indonesian Defence Cooperation project — on 16 November.

The patrol boat, formerly HMAS Bandolier (see photograph), was renamed RISibarau and commissioned into the Indonesian Navy at a ceremony at HMAS Waterhen.

It was accepted by the Indonesian Ambassador to Australia, Mr Her Tasning, and shortly after the handing over and commissioning an Indonesian Navy crew marched on board to formally take possession.

The first vessel is to be followed up with another Attack class patrol boat next year; two further patrol boats of a similar type, six 51 feet patrol boats and at least four Nomad aircraft.

IRAN

NEW SUPPORT SHIP

The imperial Iranian Navy Support Ship Hengam (see photograph), named by Princess Fathem Pahlavi, sister of the Shah of Iran, was launched at Yarrow’s Scotstoun, Glasgow shipyard on Thursday, 24th September, 1973.

Hengam is the first of a series of two ordered in 1972; she is scheduled for delivery in March 1974 and her sister later that year.

The support ships have been designed as multi-purpose vessels with the capability of undertaking disaster relief operations, and even the shipment of general cargo, in addition to a variety of naval duties. With lengths of 300ft. the vessels will have a displacement of some 2500 tons; they will be powered by twin medium-speed diesel-engine installations turning controllable-pitch propellers.

PAPUA-NEW GUINEA

NEW SHIPS FOR CONSTRUCTION

Following consultations with the PNG Government, the Australian Government has decided to provide two landing craft to the Papua New Guinea Defence Force.

The PNG Government has welcomed the offer of the two vessels which will provide the PNG Defence Force with improved maritime mobility, for which there is an established requirement.

Displacing about 310 tonnes, the landing craft are some 44.5 metres in length and could be used for loading and unloading across beaches, the discharge of reasonably heavy cargo from ships off-shore, and transport on the major rivers of PNG. The normal complement of 16 includes two officers.

The RAN patrol boat HMAS BANDOLIER (formerly number 05) has new markings ready for transfer to the Indonesian Navy. She is the first of two Australian patrol boats to be transferred under a programme to develop Indonesia’s maritime patrol capacity. The BANDOLIER was built in Queensland in 1968 and is to be known as RISibarau.

The disaster relief role, in particular, will be served by a hospital and dormitory complex and a helicopter landing pad.
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ROYAL NAVY HAS
NEW TORPEDO
A new anti-submarine torpedo, code-named "Tigerfish", has entered service with submarines of the Royal Navy. It will provide a highly effective capability against submarines of all types.

The development programme has included hundreds of successful test firings, using experimental, pre-production and finally production models of the new weapon.

Tigerfish is some 21 feet long and 21 inches in diameter, and is propelled by low noise, contra-rotating propellers, designed at the Admiralty Research Laboratory, Teddington. Its electric propulsion system is powered by batteries of advanced design.

During its run to the target, Tigerfish remains connected to the firing submarine by a wire link, which is paid out both from the torpedo and the submarine. This method allows the wire to remain stationary and free from strain.

The wire link enables the course of the torpedo, its depth and an appropriate mode of acoustic homing to be selected or changed as necessary while the torpedo is on its way. When its sonar equipment has made acoustic contact with the target, the final phase of the attack is entirely automatic, the weapon homing on to the target in the already selected mode.

Explosion of the torpedo's powerful warhead is initiated either

FERRE was purchased from Britain in 1969 and refitted by Cammel-Laird for service with the Peruvian Navy.
by a conventional impact fuse, or by a proximity fuse developed initially at the Admiralty Underwater Weapons Establishment, Portland. In the event of a near miss, the proximity fuse ensures the detonation of the warhead at the nearest point to the target.

Lead contractor for Tigerfish was Marconi Space and Defence Systems Ltd, under the direction of a special team in the Navy Department of the Ministry of Defence. Scientific support came from the Admiralty Underwater Weapons Establishment.

Significant design and development work was also carried out by the Plessey Company and other contractors, and Plessey is sharing in the assembly of the torpedoes. Final preparation for issue has been carried out by the Navy's armament depot at Coulport.

There are three variants of Tigerfish — the warshot, the exercise and the dummy. The warshot is the fully operational battle weapon. The batteries in this version were developed and manufactured by Chloride Industrial Batteries Ltd. The exercise version becomes buoyant at the end of its run for ease of recovery, and this version contains special instrumentation and recording equipment for post-exercise analysis. It is powered by a rechargeable battery made by SODRA Batteries Ltd. The dummy is used to prove handling, stowage and discharge arrangements, as necessary, in advance of the deployment of the other, more expensive versions.

All three versions are in full production, a task currently being shared between Marconi and Plessey, with the involvement of other specialist firms.

AMAZON CLASS FRIGATES

Our photograph shows HMS Amazon on sea trials. She is the first of the Royal Navy's Type 21 frigates, which are built to a design carried out under Ministry of Defence contract by Vosper Thornycroft Limited in collaboration with Yarrow Shipbuilders. This makes the class the first major warships for many years designed as well as built by commercial shipbuilders.

HMS Arrow, fifth of the Royal Navy's new Type 21 Amazon class frigates, was launched by Lady Raper, wife of Chief of Naval Staff, on 11 December, 1973, at the Glasgow shipyard of Yarrow (Shipbuilders) Ltd.

HMS Arrow's armament will be SeaCat surface-to-air missiles and a 4.5in Mk 8 gun. She will also carry a Wasp helicopter, which will be replaced later by a twin-engined Lynx.
HMS INVINCIBLE

Plessey Radar has received a Ministry of Defence contract valued at almost 1 million pounds, to supply action information equipment for the Royal Navy’s new cruiser HMS Invincible.

The equipment is the latest version of the successful series of digital display systems currently in production at the Plessey Radar Aldershot factory. The first system of this type is in service in the guided weapon destroyer HMS Bristol.

Other systems are being fitted aboard the Royal Navy’s new type 42 destroyers and in a number of Leander class frigates as part of a modernisation and conversion programme.

HMS Invincible, the largest ship to be built for the Royal Navy since World War Two, is to have a more comprehensive automated action information organisation than any previous vessel. The Plessey display system will enable the command team to make full use of the extensive volume of data available in the Action Data Automation (ADA) system for deployment of the ship’s weapons and aircraft, also for command and control of co-operating forces.

Orders received by Plessey Radar for ADA digital systems for both ships and short training purposes now exceed a total value of 9 million pounds.

DOPPLER RADOMES FOR SEA KING HELICOPTERS

The Microwave Materials unit of Plessey Interconnect has received a further order valued at 45,000 pounds from Westland Helicopters Limited for the supply of Radomes for the Marconi (RDR80) Doppler system used on the Sea-King helicopter.

The radomes are required to protect the receiver and transmitter arrays of the Sea King’s doppler radar system. Due to the aircraft’s versatile operational role — which includes a capability of emergency landing on water — together with its fuselage configuration, a pair of highly-accurate radomes which are an integral part of the aircraft structure, are required to employ the extreme sensitivity of the doppler. Shielding is also required to prevent stray reflections from the bulkhead which could produce error signals.

Plessey was able to design and develop a composite radome and absorber assembly that allows 98 per cent transmission of power through the radomes and suppresses stray reflection. Additional sealing produces 75dB isolation between the transmitter and receiver array.

USA LITTON CONTRACTS DESTROYER ELECTRONIC SYSTEMS

The Arecos division of Litton Industries, College Park, Md. has received a contract in excess of $7 million from the Naval Electronic Systems Command for production of electronic support measures for the new Navy carrier aircraft V-101 Marine Diesel.

New Mercedes-Benz OM 403 V-10 Marine Diesel.

The new system are an adaptation of the AN/ALR-59 passive electronic surveillance systems the division has been producing for both Navy’s E2C airborne early warning planes and the Patrol Hydrofoil Missile (PHM) ships. The DD-963 systems will be an integrated automatic receiving system composed of antennas, receivers, data processors and displays. The contract is firm fixed price with options for additional systems.

These new systems are functionally modular and will be installed in the destroyers after delivery to the Navy. A fleet of up to 30 Spruance-class multi-mission destroyers are in production at the Ingalls Shipbuilding division of Litton Industries in Pascagoula, Miss. The first destroyer was launched on November 10.

The destroyer surveillance system, like the other two Navy programmes now in production in College Park, will employ receiver/processing techniques that enable high probability of signal detection, precision bearing measurements, magion programmability, low false alarm rate, and low system cost.

TOTAL "CAINS" AWARDS ARE INCREASED TO $41 MILLION

Litton Industries’ Guidance and Control Systems division has received an additional $16.2 million contract award from the US Navy for production of the Carrier Aircraft Inertial Navigation Systems (CAINS).

The award by the Naval Air Systems Command increases Litton CAINS contracts to a total of $41 million.

CAINS has been designated as standard equipment for the three new Navy carrier aircraft currently undergoing Navy Bureau of Inspection and Survey (BIS) trials: Grumman’s F-14A air superiority fighter and E-2C early warning aircraft, and Lockheed’s S-3A antisubmarine warfare fighter. The system will also be installed in Grumman’s A-6E attack aircraft which is currently in production.
Contracts to date are for approximately 250 CAINS systems produced by Litton's Guidance and Control Systems division at its Woodland Hills, Calif., and Salt Lake City, Utah, facilities.

RUSSIANS AIM TO BE TOP NAVY

The Soviet Navy is expanding with pretensions of becoming the world's foremost naval power. Some experts believe the Soviet Union is already making this distinction.

Last year the Russians surpassed the United States in number of nuclear-missile-carrying submarines, though not in number or sophistication of submarines.

The rest are old-fashioned diesel subs. Naval experts in Washington point to other factors beyond mere numbers as a cause for concern.

They include the growth in Soviet submarine capabilities and the pending decline in American ships at sea. The constraints of nuclear power had long stifled a major arms buildup, but the new fleet is already making up for that.

Another factor is the Russians' progress in matching the pioneering US techniques in refueling and supplying ships at sea. The constraints of nuclear power had long stifled a major arms buildup, but the new fleet is already making up for that.

With the Tunny, the Navy will have a nuclear submarine force of 106 vessels, including 41 of the Polar/Poseidon missile firing type and 61 attack type. Equipped with the most advanced anti-submarine weapons systems, Tunny combines the endurance and environmental independence of nuclear power with deep submergence and speed.

The new submarine will be manned by a crew of 12 officers and 95 enlisted men, the most significant gauge of submarine strength.

They argue that while the Russians outnumber the United States in submarines — 350 to 140 — each country has about 100 nuclear subs.

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The answer to these questions and other naval puzzles can be found in the archives of the Naval Historical Society.

The USS Tunny (SSN-682), the US Navy's newest and most modern nuclear powered submarine, joined the fleet in commissioning ceremonies on 9 February, at the Ingalls Shipbuilding division of Litton Industries. The 300-foot attack type submarine, designed and built to seek out and destroy enemy submarines, is the nuclear submarine built by Ingalls.

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Join the NAVAL RESERVE CADETS

If you are between the ages of 13 and 18 years:

The Naval Reserve Cadets are administered by the Australian Naval Board. The Naval Reserve Cadets provide for the spiritual, social and educational welfare of boys and to develop in them character, a sense of patriotism, self-reliance, citizenship and discipline.

Uniforms are supplied free of charge.

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

Parades are held on Saturday 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: C/- 39 Pinecroft Street, Camp Hill, Queensland, 4152.
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THE NAVY

February/March/April 1974
One tree doesn't make an orchard

But it's a good start. The Kingtish oilfield in Bass Strait is a major producer, even by world standards. With its neighbours, Halibut and Barracouta, it produces over 60% of Australia's current oil needs. But what about next year? And the year after? Bass Strait will still be producing — but Australia's thirst for oil energy is growing fast. At about 6% a year, a higher rate than the world average. And no oil well lasts forever.

To maintain our present degree of self-sufficiency in oil, Australia needs to discover the equivalent of a Kingfish field every two years. To do that means an exploration expenditure of $200 million every year. Oil search is very costly and very risky — and very important for Australia.
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This drawing of Point Drake from 1865 shows men excavating the bed for the graving dock. First plans for the dock were made in 1853 by Captain Charles Ferguson, the Harbour Master. The coffer dam was finally constructed and pumped out in July, 1869.

"Cradle of the Clippers Centenary"

The "Cradle of the Clippers" celebrated its 100th birthday on Saturday, 2 March.

Better known to Australian shipbuilders, as the Alfred Graving Dock at HMA Naval Dockyard, Williamstown, Victoria, this centenarian was officially brought into service when HM Victorian Ship NELSON, with 126 guns, was docked on 2 March, 1874.

This docking of the battleship Nelson (the first three-decked ship of the line to be built in England after the glorious naval victory at Trafalgar) saw the beginning of the first permanent drydock in the Southern Hemisphere.

Captain Charles Ferguson, the Harbour Master in 1853, recommended the construction of a graving dock at Point Gellibrand capable of taking a vessel of 3500 tons. He prepared plans and proposed a site, the exact location of which was finally decided upon in 1863.

Sketch plans were drawn up by William Wardell, Inspector-General of Public Works, and site preparations commenced in the following year. The first contract was awarded to the firm of Glaister and Company on 14 September, 1864. but news of bigger ships being designed in the United Kingdom caused a review of plans and dock dimensions. The coffer dam was finally constructed and pumped out during July, 1869.

Prince Alfred, Duke of Edinburgh, and Captain of HMS Galatea, laid the memorial stone in the embryo dock structure on 4 January, 1868, and presented to the name of Alfred Graving Dock.

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Page Four
May/June/July, 1974

THE NAVY
HMS FIFE at sea with her Wessex anti-submarine helicopter on patrol.

NAVY LEAGUE VISITS HMS FIFE

On Sunday, 2 June, 1974, members of the New South Wales Division of the Navy League of Australia boarded HMS FIFE for a tour of inspection.

After morning coffee in the wardroom the party split into two groups to learn more concerning the role and intricate workings of a guided missile destroyer of the COUNTY class.

The main function of the class is the provision of air defence against both missiles and aircraft for a force of ships. They also have the capacity to defend themselves against surface ships and submarines. The importance of this role will be greatly enhanced when the Navy withdraws its aircraft carriers in the seventies.

The Operations Room is the nerve centre of the ship and it is from there that the captain exercises tactical control. Although situated well below decks the “ops room” and the associated sonar control room, provides the captain and his staff with an up-to-the-second picture of what is going on in the air, on the surface and below the waves. Fife and her later sisters employ Action Data Automation (ADA) which makes use of the most modern computer techniques to provide this tactical report. A lift connects the operations room to the bridge, enabling the captain to transfer without delay.

The main propulsion machinery, which develops 60,000 shaft horsepower, consists of two sets of geared steam turbines for normal steam ing. Four gas turbines provide additional boost for high speeds or for leaving harbour in an emergency without having to raise steam. This machinery has a large degree of remote and automatic control. To meet the weapon and domestic requirements the ship has a total electrical generating capacity of 5000 kilowatts, produced by a mixture of steam, gas turbine and diesel generators. Stabilisers are fitted to provide a stable platform for weapon firing. An Inertial Navigation System provides a continuous and accurate indication of the ship’s true position and an automatic helmsman may be used to ease the quartermaster’s task.

The League extends its thanks to the Commanding Officer and Officers of Fife, also to the Secretary of the New South Wales Division, Lieutenant Commander Arthur Andrews, for organising a rewarding and enlightening inspection.
The Civilian Arm of the Navy

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

The League supports the Naval Reserve Cadets who are administered by the Royal Australian Navy, which Service provides technical sea training for boys who intend to serve in the Naval or Merchant Services, also to those sea-minded boys, who do not intend to follow a sea career, but who given this knowledge will form a valuable reserve for the Naval Service.

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

The League consists of Fellows and Associates. All British subjects who support the objectives of the League are eligible for membership. Members receive copies of the League's magazine “The Navy”.

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THE NAVY LEAGUE OF AUSTRALIA

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May/June/July, 1974 THE NAVY Page Eleven

LHA-1, the US Navy’s first general purpose amphibious assault ship, is christened USS TARAWA during launching ceremonies at Litton’s Ingalls Shipbuilding in Pascagoula.

On December 1, 1973, Mrs. Robert E. Cushman, wife of the Commandant of the Marine Corps, stepped forward and ceremonially christened the newest addition to the amphibious fleet. As the ship’s sponsor, Mrs. Cushman dedicated the ship “In honor of the Marines who went ashore at Tarawa...” Only moments before, Gen. Cushman had reminded those present at the Ingalls Shipyard in Pascagoula, Mississippi, that the launching of LHA-1, Tarawa, followed almost 30 years to the day the historic South Pacific battle for which the ship was named.

Appropriately designated General Purpose Amphibious Assault Ships, Tarawa and her four soon-to-follow sister ships give Fleet Marine Forces a significant increase in amphibious capability. This ship was designed for modern concepts in employment of amphibious forces. Built with the inherent capability for extended deployment, combat ready Marines can be strategically located within striking range of crisis areas. The LHA...
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Four ships in one — TARAWA (LHA-1), the first in a new fleet of general purpose amphibious assault ships (LHA's) for the Navy, rests at the water's edge waiting launching at Ingalls Shipbuilding division of Litton Industries in Pascagoula, Miss. Designed by Litton, the new ships feature the combined capabilities of four previous types of amphibious assault vessels. Ingalls is building five LHA's, all of which are in production with keels already laid for the first four ships. Built to land Marines, the LHA's will transport a combat-equipped Marine battalion landing team. The vessels will have unprecedented flexibility in discharging troops both by landing craft and helicopters.

highlights the Marine Corps' role as the nation's force-in-readiness by facilitating deployment of hard hitting air and ground forces. Combat power can be put ashore faster and more effectively than ever before; or, we can retain that power at sea, poised and ready for commitment at the critical moment. After twenty-five years of Marine Corps pioneering in helicopter employment, the LHA achieves an ideal in vertical and surface assault capability by providing a platform for the CH-53E assault helicopter with its 16-ton lift capability in combination with the V/STOL close air support of the AV-8 Harrier, and the across-the-beach thrust of the LVTP7.

The LHA achieves this enhanced capability while simultaneously remaining competitive in today's energy conscious world. The introduction of the LHA into the active fleet will increase responsiveness and flexibility while concurrently reducing the number of ships required for the deployment with a concomitant saving of fuel. Ecology is also served by the ship's three sewage treatment plants which include a waste-burning system and waste-holding tanks.

The LHA is being built using the newest techniques of modular shipbuilding construction. Built as six separate modules, five of these are later joined to form the hull, the sixth comprises the island. Once the modules are assembled, the LHA is launched in preparation for final outfitting. The launching is illustrative of the uniqueness of the Ingalls' techniques. Once the ship is assembled on land it is moved by rail onto a floating dry dock. When LHA-1 was moved aboard the dry dock, it was (at 19,500 tons) the largest mass ever moved on land by man. The dry dock is then moved into deeper water and ballasted down until the LHA floats free.

LHA-2 (Saipan) is scheduled for launch during June, 1974, with the final three ships following at approximately six-month intervals. Launch, however, does not mean availability to the fleet. Right now LHA-1 is being fitted out with the additional 20,000 tons of equipment (five-inch guns, radios, boilers, mess equipment, bunks, and all other types of gear) which will prepare her to go to sea. Following her fitting out, various trials, tests and shake-downs are required before Tarawa joins the active Navy/Marine Corps team.

When she is commissioned in March 1975, Tarawa will be a triple-threat performer, capable of launching helicopters for vertical envelopment, amphibian vehicles for surface assault, and V/STOL aircraft for close air support forces. With launching spots capable of handling nine CH-53E's simultaneously, initial waves can be much heavier. Concurrent with the heliborne assault, up to four LCU's, eight LVTP7's and one LCM6 can be launched from the well deck. A standard aviation mix aboard an LHA could include CH-46, CH-53, AH-1J, UH-1N and AV-8A's in varying numbers. The primary limitation on the latter capability will be the range and depth of maintenance parts required; however, the hangar deck of the LHA can accommodate a mix of helicopters and/or V/STOL aircraft. One such mix might be eighteen CH-46's, six CH-53D's, two CH-53E's, two UH-1N's and two AH-1J's. Various mixes will be tested later on in the program to include the AV-8A and possibly the OV-10A.

The LHA's came into being to fill a recognized
The LHA will be the second largest ship in the Navy, with only the attack aircraft carrier (CVA) having a larger displacement. Although the LHA has approximately the same dimensions as the Essex class carrier, Tarawa is designed for vertical and short take-off and landing aircraft operations. The LHA does not have the catapult and arresting gear required for conventional fixed wing aircraft.

The LHA is coming onto the amphibious scene at a time that requires her unique flexibility. The Nixon doctrine and our national security strategy of realistic deterrence are highlighting the concept of forward area deployed amphibious forces. The Navy/Marine Corps integrated sea, air and landing force has always been our most flexible and usable military force. The Sixth Fleet with its integral Mediterranean Landing Force was visible, available, and credible during the recent Middle East crisis. This visibility, availability and credibility were key factors in our country’s diplomatic posture during the critical negotiations that constrained that crisis from becoming a major power confrontation. The force was also available to keep transportation lanes open and assure that the balance of power was not critically tipped due to Russian military aid to the Arab nations.

Forward deployed amphibious ready groups (ARG) built around the LHA will probably be similar to those where the LPH was the primary vessel. A deployed amphibious squadron might consist of an LHA, an LSD, and an LST. A Marine Amphibious Unit as currently constituted could easily fit in such a package. Even more flexibility could be added if an LPH or LPD is one of the ships. Adding five LHA’s to the fleet means that 10,000 more Marines can be deployed than can be today. It may be possible, with an adequate shore-based establishment, to deploy reduced size Marine Amphibious Brigades where we now are limited to MAU’s. One of the first operational techniques to be investigated is multi-deck operations with LHA, LPH and LPD.

A number of military, diplomatic and humanitarian operations have been carried out by MAU sized forces in the recent past. The LHA adds a new dimension to the independent MAU operations. The increased flexibility in landing mode (air or sea in various combinations) combined with a significant increase in command and control capability must be matched by landing force expertise in combat and non-combat skills. The ability to precisely meter the amount of combat power required into a low intensity conflict situation will be greatly enhanced by the responsiveness provided by the LHA.

In addition to its uses as the flagship and primary launching platform of a self-contained MAU, the LHA also can be employed as the flag-
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ship for a MAB operation, or as part of a larger force. In either instance, it would appear that the LHA could remain in the amphibious objective area throughout the amphibious portion of the operation to serve as a command and control ship, a hospital ship, and a floating maintenance and supply facility. Additionally, it can function as a helicopter platform and small boat harbor.

An example of one mission for the LHA during an amphibious assault would be as the staging area for the MAF reserve. Its capability of moving to either flank of the beachhead, to land troops by surface and/or air, and of providing a measure of naval gunfire and (with organic AV-8A's) close air support make it an extremely versatile and potent weapons system.

Another example could be its use in supporting operations as part of a larger force. The LHA with its embarked combat power could be detailed to conduct amphibious demonstrations or raids in support of the main landing. Also on independent missions it could act as the support base for interdiction operations to isolate the objective area.

The payoff of all these capabilities will be selective delivery of Marine Corps combat power in any chosen form. The LHA is not limited to the performance of amphibious assaults. Cap L. R. ZImmer's recent GAZETTE article, The BLT in Evacuation Operations, highlighted the growing need for that capability. Recent history is also replete with examples of Navy/Marine Corps response to natural disasters. Both evacuation operations and "missions of mercy" are right up the LHA's alley.

With its 20-knot speed, Tarawa can steam quickly to the scene, and its organic helicopters and landing craft can shuttle aid and comfort between ship and shore. Should it be necessary to provide shelter for disaster victims or evacuees, the LHA's capability of providing food, water, clothing and medical care are unsurpassed. Medical and dental facilities aboard the LHA are capable
The Marine Corps is providing input to these tests and systems demonstrations. The contractor will be for the Navy and the Marine Corps to rate the ship on how well she accomplishes the amphibious mission. Two aspects of the ship will be tested. First, must be determined by appropriate tests if the performance specifications have been met. The second objective will be for the Navy and the Marine Corps to rate the ship on how well she accomplishes the amphibious mission. These two test objectives are so interrelated that the performance and the mission accomplishment of the LHA can often be tested simultaneously. The Development Center has been designated as the agency to manage and coordinate the Marine Corps participation in the operational test and evaluation of the LHA.

The complete test program for the LHA is unique. Each component of every system is being tested by Ingalls Shipbuilding upon receipt at the shipyard. Ingalls then tests each component of the major systems subsequent to installation, and once a system is installed, tests the entire system to determine if the ship's mission can be accomplished. All of this testing is planned in the evaluation plans, and sending observers to recommend changes in the procedures or training. All of this testing is planned for September 1975, will test each of the ship's systems and the interactions of the systems with each other in the operational environment. A Marine Amphibious Unit will be embarked for the 17-day exercise and will take part in most of the specific tests designed to evaluate the performance and the mission accomplishment capabilities of the ship. Units of the MAU will also take part in several separate tests prior to the exercise; these tests will be a demonstration of various elements of the command and control system of the ship. Examples of these are a determination of the maximum range over which the LHA can control helicopters and fixed wing aircraft; determination of the range of control of LVT's during movement; and adequacy of display of information by the Integrated Tactical Amphibious Warfare Data System. These system components will of course be exercised during the amphibious assault exercise (and during the rehearsal) but the limits of these systems should be determined first in order to determine the maximum capabilities of the ship and its associated components.

The amphibious exercise will continue with reembarkation of the landing force which will determine how easily the vessel can resume an afloat status with a MAU re-embarked. The ship and landing force on board will then be ready for follow-up assignments.

Other tests are planned by the Development Center and OPTEVFOR working together. These separate tests will examine aspects of the ship and its capability with equipment and techniques not envisioned in 1969 when the contract specifications first were determined. One such test could be a test of the compatibility and operability of the AV-8A from the LHA while the ship is also conducting helicopter operations or well-deck operations of the amphibious fleet and these will be incorporated into Marine Corps and Navy publications subsequent to the tests.

The embarked Marines will be highly trained. A major task of the LHA Test and Evaluation Group is to determine training and formal school requirements. Training courses recommended by the shipbuilder are being evaluated to determine courses to be incorporated into those scheduled and conducted by the Landing Force Training Commands. In addition, if no comparable course is scheduled, recommendations for courses, course content, and attendance will be made to the Training Commands. Simultaneously, studies are underway to program attendance at initial contractor courses in order to properly test and evaluate the LHA Class Ship. Training requirements for embarked troops are being determined prior to the formal test phases. The test and evaluation effort for the LHA is designed to "wring out" the ship and its capabilities using the best trained and prepared Marines.

In remarks made at the launching of Tarawa, the Commandant reflected on the conflicting demands for the maintenance of an overseas presence and a reduction in the number of Americans permanently based on foreign soil. "The answer," he said, "lies in our mobility and our use of the sea."

"The LHA will be the backbone of our amphibious forces for the rest of this century," he asserted.

The muscle of those amphibious forces will be the Marine landing forces launched from the LHA. When the Tarawa and her four sister ships have joined the Fleet, the nation's force in readiness will have both muscle and mobility for the projection of seapower ashore at the time and place required.
The Royal Australian and the New Defence Organisation

Text of an address by the Federal President of the Navy League of Australia
COMMANDER F. G. EVANS, MBE, VRD, RANVR
to the Victorian Chapter of the Naval Historical Society, on 6 May, 1974

From 1939 until December, 1972, the Australian defence organisation consisted of the Department of Defence, and the Departments of Navy, Army and Air. The Department of Supply with a very substantial defence element, was usually included in the defence "group of departments", and like the Defence and Service Departments, had its own Minister responsible to the Government for the activities of his department.

Under this arrangement the Defence Department had a number of executive powers vested in it. There were a period of years by the formation of a number of committees comprised of members of the Defence Department and of three Service Departments.

The committees were purely advisory bodies and the allegiance — if this is the right word — of the part-time Service members was to their parent Department rather than to the Defence Department.

The committee system proved inadequate and in 1968 was replaced by a Joint Staff Organisation within the Defence Department. The members appointed to the Joint Staff from other departments served full-time and their responsibilities were to Defence rather than to the individual Services.

The principal interests of the Joint Staff related to policy, operations and plans, communications and intelligence. Also within the Defence Department was the Chiefs of Staff Committee, consisting of:

- The Chairman — a post filled by a serving officer of the Navy, Army or Air Force (invariably retired Chief of Staff, and rotated between the three Services).
- The Chiefs of the Navy, Army and Air Staffs.

Again, this was an advisory committee and the Chairman, although the most senior officer in the Armed Forces, had no statutory authority, or power of direction over the individual Service Chiefs of Staff. Contrary to a widely held belief the Department of Defence was by no means an ineffectual or powerless department. Its Minister had the authority to direct Policy over his colleagues the Ministers for the Navy, the Army, Air and Supply. He could decide the total and content of the defence group estimates; he could support or reject projects forwarded by individual departments; for example, the type of ship recommended by the Navy for its destroyer replacement programme.

Although the Defence Department was not without influence the overall direction of the Armed Forces was very much in the hands of the individual Services, and was exercised through the Service Boards; in the case of RAN, the Naval Board.

The Naval Board, and I will use the present tense, as with the Army and Air Boards, it is still in being and will remain so until the Parliament decides otherwise, is comprised of:

- The Minister for the Navy.
- Five Serving Officers with specific responsibilities;

and at this moment, a nominee of the Defence Department in place of the Secretary Department of the Navy, a department which was merged with Defence at the end of 1973.

The Army and Air Boards are similarly constituted, but lack certain executive powers vested in the Naval Board.

This, then, is the structure which has evolved so far as the Navy is concerned, over a period of some seventy years. Essentially a structure of corporate authority and responsibility and an arrangement which has enabled naval administrators — professional and civilian — to hammer out their problems, to arrive at a decision and to present this decision (or recommendation) through their Minister to the Government of the day. Similarly, to be held corporately responsible for the result of their activities.

But I would like at this stage to remark, as one who has worn naval uniform, that the Public Servants in the Navy — the civilians in the stores, the clerks and so on — were often referred to in a somewhat disparaging way when things went wrong (the wrong stores arrived, or failed to arrive at all).

Nevertheless, from the Naval Board down there was a very close affinity between the civilian and uniformed elements, and at nearly all levels the civilian was as dedicated to the Navy as was his opposite number in uniform.

In short, the organisation known as the Department of Navy 'worked' — and this fact was reflected in the ships and men of the Royal Australian Navy; they were and are efficient.

Period of Change Begins

In the early nineteen-sixties, a number of the countries with which we are most closely associated — including Canada, the United
Kingdom, New Zealand — looked very closely at their defence organisations and subsequent took action to centralise in varying degrees their defence administrations.

Canada went to the extreme and unified the Navy, Army and Air Force into a single Service based largely on Army practices. I can think of only one other country which has done this — Israel, where the circumstances are rather different and which is not a significant Naval Power.

I do not propose to comment further on the Canadian experiment, except to say that all my information indicates that Canada is still trying to sort things out. Very few countries can afford to experiment in this way, but then few countries are on the doorstep of and important to, a nuclear war.

Whatever was happening in other countries, and whatever other Australian political parties proposed to do, the Labour Party "shadow" Defence Minister, Mr Lance Barnard, made it quite clear that Labor Government would integrate the Australian Service Departments into a single Ministry of Defence. When his Party came into power on 2 December, 1972, Mr Barnard wasted no time. Within three weeks (19.12.72) Mr Barnard issued a statement and directive advising those directly concerned that he had assumed charge of the Departments of Defence, Navy, Army and Air Supply.

At the same time he listed the Government's requirements for an integrated defence organisation; named the Secretary of the Defence Department (Sir Arthur Tange) as "Principal Adviser on policy, resources and organisation to the Minister for Defence, Navy, Army, Air and Supply"; and directed Sir Arthur to prepare a scheme to achieve the Government's objectives.

(It has been suggested that this document was ready for Mr Barnard to sign when he became Minister; I have no reason to disbelieve this story.)

Sir Arthur Tange's recommendations were sent to the Minister within twelve months, after cover of a letter dated 28 November, 1973.

Two days later (on 30 November), the Departments of Navy, Army and Air were abolished. The Department of Supply was retained for the time being.

A few days after this, on 4 December, 1973, the Government's plans for defence re-organisation, in substance the Tange proposals, were presented to the Parliament.

As the approval of the Parliament is required for a number of the changes proposed — and as the new scheme cannot work unless these changes are approved — and as Parliament was dissolved before approval could be sought, it is proper to note the reaction of the Liberal Party's defence spokesman, Dr A. J. Forbes. Dr Forbes agreed in principle with integration (or centralisation) in Defence, but expressed some doubt that the views of the professional servicemen had been sufficiently taken into account.

It is Dr Forbes' opinion that the plans for defence reorganisation should be examined by the joint Foreign Affairs and Defence Committee of Parliament, and that involved or interested persons should be enabled to express their views on the proposed changes.

One may assume that this will happen if the coalition parties win the election on 18 May; it may even happen if the Labor Party regains office. I personally believe this is the proper course to take, because the changes proposed are quite drastic.

The New Structure

The new structure the Service Boards which might be termed the focal point of each Service at the moment disappear. I have already stated that the Navy, Army, and Air Departments have been abolished.

In the new structure there will be two very important people — the Minister for Defence representing the Government; the Secretary of the Defence Department (a Public Servant); and the Chief of Defence Force Staff — a professional officer who may be a sailor, a soldier or an airman.

In the normal course of events, Ministers will come and go, and the professional officer will be changed every four or five years. Because of a continuity of service alone, the new organisation the civil head will be a very influential person. I will return to this trio later.

The Defence Department itself will be enlarged and a number of existing organisations altered or new ones created, to deal with major subjects such as:

- Strategic Policy and Force Development;
- Supply and Support Services;
- Organisation and Management Services;
- Research, Development, Trial and Evaluation;
- Defence Research;
- Army practices.

It is intended that all these organisations will come under the Secretary's side of the defence organisation, rather than that of the CODFS.

Twelve committees will be formed, and as their interests embrace nearly all the functions of the separate Service Departments, it is desirable to list them:

1. Defence Co-ordination Committee

The task of this committee is to advise the Minister for Defence in the formation of policies which require co-ordinated information about strategic, military, foreign affairs and economic matters.

It is headed by the Secretary of the Defence Department and its members include three other Departmental Secretaries (PM and Cabinet, Treasury and Foreign Affairs) and what I will refer to hereafter as "the four professionals" — the Chiefs of Defence Staff, the Secretary of the Navy, Army and Air Staffs.

2. Programme Committee

This appears to be the existing Defence Force Development Committee with another name.

Its purpose now seems to be to keep an eye on the current defence programme and to "filter" some of the information going to the Defence Co-ordination committee which I have just mentioned.

It is comprised of the Defence Secretary, who is the four professionals, augmented by specialists on specific matters the committee wishes to consider.

3. Chiefs of Staff Committee

This is comprised of the four professionals (CODFS, CNS, CDS and CAF) and its task is to advise the Minister for Defence on purely military matters, such as the allocation of military resources to commanders engaged in joint-service operations.


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4. Defence Management Committee

a) Description: The Defence Secretary: The Four Professionals: The Head of Defence Research, Trust and the Director of Joint Intelligence: Deputy Secretaries

b) General discussion group to enable a slightly larger number of officials to "keep in touch" with things going on.

5. Plans and Operations Executive

Supplementary to Committee No. 3. The examination of new or changed proposals of the major organisations on the Defence Secretary's side of the new structure.

6. Defence Force Structure Committees

- Again a committee of deputies to advise Committee No. 2, the Defence Programme Committee.

- The committee is headed by a Deputy of the Defence Secretary, and its purpose is to advise on the development of the force structure, the equipment programme, and major equipment proposals.

7. Defence Operational Requirements Group

- This group will examine the New Requirements Group (I refer to the uniformed Services) to the Minister of Defence, and includes the Secretary of Defence and the Treasury, and includes the Permanent Secretary of the Defence ROT & E Committee.

- It is the objective to produce guidelines for research and development, trials and evaluation, to draw attention to developments which may effect policy, and to recommend projects of a continuing nature and which are estimated to cost, more than one million dollars pa or two point five million dollars over the period.

- These are the 12 committees proposed in the Tangye Report, and in practice there will be one or two related to industrial and business matters presently under consideration.

8. Programme and Estimates Committees

- Committees of Deputies to provide guidelines on the subjects suggested by the title of the committees.

9. Defence (Conditions of Service) Committee

- This committee will advise with a Deputy Secretary as Chairman, comprised of representatives of the Defence Department, the Public Service, the Treasury, and includes the Chief of Naval Personnel, (formerly the "Naval NCO") and the Army and Air Force equivalents.

- The committee is consultative bodies and do not have executive powers. To some extent they are the "visible signs of change" in the defence structure.

Organisational Change

- There are some less visible but quite fundamental changes within the organisation, and one in particular I would like to mention as it could be the root of some of particular relevance to the Navy.

- This is the new situation in what we have come to call the "new organisation" as the Navy headed by the Director of Technical Services — the old position of Third Naval Member or "Engineer Admiral" is replaced by a smaller and costlier role in naval planning which will be applicable in the civilian area.

10. Dockyard Policy Committee

- This is a triennial, examining the position and working of the Dockyard Committee, and I will return to it shortly.

11. Defence, Research Development, Triennial and Evaluation Committee

- The Chairman of this Committee is the Head of the Defence ROT & E Committee.

- Its members include the Assistant CDFS, DCNS, Chief of Army Operations, OCAS and several technical representatives.

- The function of the ROT & E Committee is to produce guidelines for research and development, trials and evaluation, to draw attention to developments which may effect policy, and to recommend projects of a continuing nature and which are estimated to cost more than one million dollars pa or two point five million dollars over the period.

- These are the 12 committees proposed in the Tangye Report, and in practice there will be one or two related to industrial and business matters presently under consideration.

Secretarial

- All the committees have mentioned will be served by a small "s" secretariat (as opposed to the capital "S" Secretary who is the head of a major Department) drawn from a Central Secretariat or in the case of the Chiefs of Staff Committee and the plans and Operations Executive, from the Joint Civil and Military Staff Corps.

- The committees are consultative bodies and do not have executive powers. To some extent they are the "visible signs of change" in the defence structure.

Chiefs of Defence Force Staff

- With the disappearance of the Service Board, the Chiefs of their corporate responsibilities to a triumvirate, the Defence Secretary, the Force Staff, and the Chief of Defence Force Staff, plus his staff, will have a considerable amount of responsibility in the new defence structure, will without any doubt be the most important person in the Australian defence organisation.

The Secretary For Defence

- With the disappearance of the Secretary of Defence, other than for matters of a continuing nature and in the Office of the Secretary, the Defence Minister will have primary responsibility for Defence, and the Chief of Defence Force Staff will in effect be the Defence Secretary. The Chiefs of Staff, Navy, Army and Air Force will be subordinates.

- The Secretary of Defence will have some direct military responsibilities, and as Minister: others (including such matters as senior postings and promotions in the armed forces) he will share with the Secretary.

The Minister

- In his report, Sir Arthur Tangye referred on more than one occasion to the probability that the Minister for Defence will not have the same degree of assistance in carrying out his duties as the Minister recommend- ing to the Government the expenditure of upwards of thirteen hundred million dollars each year.

- While Mr Barnard did not acknowledge this when presenting the Government's proposals or defence re-organisation to the Parliament, one must assume that one or more assistant Ministers will be actively involved with Defence.

- Personally I believe that any Government organisation should be directly accountable to the Australian people if it did NOT provide ministerial assistance in carrying out those exacting and vital appointment.

The CDFS will have some direct military responsibilities, and as Minister: others (including such matters as senior postings and promotions in the armed forces) he will share with the Secretary.

- Although it might appear that the Secretary of the Defence and the Chief of the Defence Force Staff "run" the Department, as Minister and as partners, this is not really so. The extent and importance of those matters, and the degree of responsibility which will be the responsibility of the Secretary make it quite clear that he will be the dominant partner.

- Although the title of this lecture is "The RAN and the New Defence Organisation", I had to prepare my notes I realized that I would have to spend 90% of my time describing the overall structure of the defence organisation.

- Because scattered throughout this new organisation are pieces of the Navy, which brings me to the situation of the Chief of Naval Staff.

- The CNS in the Naval Board of Canberra will have the responsibility of the Navy, and it is my opinion (and perhaps I have a very important figure) that the triumvirate, the Defence Minister, and the CNS becomes more of a "field commander". He commands the Service under the Minister of the CDFS and becomes responsible through that Officer to the Minister for Defence.

- His responsibilities include the implementation of approved defence policies, directions and programmes.

- In his report, Sir Arthur Tangye refers to the fact that the Minister may change his mind at any time, and that the Minister will receive the attention I believe they deserve, before our defence re-organisation is completed.
Exercise Bali Hai. The name must have seemed like a bad joke to the 70 soldiers of the 3rd Battalion, The Royal Green Jackets, sleeping on the upper decks of Australian destroyer HMAS VENDETTA when light rain began to fall before dawn.

THE DAY THE ARMY LEARNED ABOUT CASEX

The closest they had come to the islands off the southeastern coast of Peninsula Malaysia made famous in the film "South Pacific" was in the dark before dawn.

Even then they came only close enough for the ship's 4.5 inch guns to bombard target buoys south of Pulau Aur. They saw no white sand beaches or palm trees, only the flash of the guns and the bright bursts of star shells illuminating the target eight miles away.

Exercise Bali Hai began at the ANZUK Naval Basin in Singapore when the platforms and a company of headquarters of the Green Jackets together with 12 Royal Engineers embarked in the Vendetta. The aim was to put them ashore in six aluminium assault craft at Kerengega Bay about 60 miles due north the following morning.

The Green Jackets are a British strategic reserve battalion which came to the Far East for training which had been adopted as an amphibious force. But when it became clear that the main target would be Kerengega Bay was the start of their only battalion level exercise while in Malaysia.

For Venda, landing was merely an interlude in a busy weapons training exercise. The programme representing the run up to 1974's first major Power Exercise. How busy Venda's programme had been is easy to demonstrate. Only the night before had participated in a surprise "smash" - a search for a simulated sunken submarine. A few hours after she embarked the Green Jackets she was scheduled to rendezvous with a Royal Fleet Auxiliary tanker to take on much-needed oil fuel.

The closest they had come to Bali Hai was organised as an amphibious landing because it gave many of the soldiers a chance to do something they had never done before - to work with the navy, and to see the navy at work.

The ANZUK Naval Commander. Commodore D. A. H. Clarke, made two visits - a "match" - a training exercise - to Pulau Aur, and several hundred yards away from Venda displayed one of the soldiers looking at the portside for the soldier's that's the right hand side - you'll see the submarine's Periscope making a very small V in the water," an officer announced.

The Australian submarine HMAS OXLEY surfaced, and dived, then, and several hundred yards away from Venda displayed her periscope on the radar, massed, the report, and so on. The "landing" with the submarine.

Oxley surfaced again and at long last the army got its chance to be something more than spectators as the submarine's motors had been set to with a will. Six "old and bold" soldiers from 3RUC's support launch board a Gemini rubber dinghy early on rails. The only catch was that the soldiers had barely lost a rifle. The drum float was broken on the starboard side, for the soldier's that's the right hand side - you'll see the submarine's periscope making a very small V in the water," an officer announced. The Australian submarine HMAS OXLEY surfaced, and dived, then, and several hundred yards away from Venda displayed her periscope on the radar, massed, the report, and so on. The "landing" with the submarine.

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The Canadian IROQUOIS class of Destroyer Helicopter Escorts carry two Sea King CHSS-2 anti-submarine helicopters and are fitted with Sea Sparrow anti-aircraft missiles. With a full load displacement of 4050 tons, overall length of 426 feet (129.8 metres), beam of 50 feet (15.2 metres) and draught of 14 feet (4.3 metres) these vessels are gas turbine powered and have a designed speed of 27 knots.

Building a warship is like packing a suitcase. Everything is jammed in and there's never enough room. And the Canadian Forces are packing more into their four new warships than ever before.

The design and development of the DDH 280 class has taken more than five years. The first hull (Athabaskan) slid down the ways at Davie Shipbuilding Ltd on 27 November, 1970, and the second hull (Iroquois) was launched a day later at Marine Industries Ltd. The two follow ships, Huron and Algonquin, were in the water within the next year.

Bigger, Deadlier, and More Flexible

The new ships are bigger and more lethal than the Annapolis class of helicopter-destroyer. At 425 feet, they're 60 feet longer; their 50-foot beam is eight feet wider; their masts tower 35 feet higher; and with a deep draft displacement of 4485 tons they are 1500 tons heavier. Their shaft horse power has been boosted 67% from 30,000 to 50,000. At the same time, the crew is up less than 10% from 260 to 280 officers and men with 30 additional training billets. Despite the extra size, the new ships will be slightly faster, and cruise considerably longer.

Why larger ships? They carry a second helicopter for one thing, and the double hangar and flight deck take almost a third of the upper deck space. A destroyer captain normally considers the helicopter his prime weapon system, because it can attack a submarine independently without risking the ship. But the trick with a single helicopter is keeping it serviceable in its matchbox-sized hangar. With two helicopters on the DDH 280s, the designers felt, one helicopter will always be flying or ready to fly.

Another new space requirement is the close range anti-missile and anti-aircraft missile system — something entirely new for the Canadian navy. According to one weapons expert, "there won't be anything like it anywhere else for five years at least; these missiles increase our anti-air fire power by a factor of ten." There are other ships with missile systems, of course, but not ships of this size and this diversity.

The Sea Sparrow missiles are originally air-to-air missiles, adapted to the marine environment. They sit out of sight on both sides of the superstructure just behind the forward gun mount. During firing, four 12-foot missiles extend on a narrow beam and hang out over the side like mail hooks. The beam then retracts, loads and reappears with another four missiles.

On their stern, some Canadian destroyers carry a variable depth sonar body which is towed behind the ship to detect submarines beneath thermal layers in the water. These towed bodies usually weight a couple of tons. But the towed body on the DDH 280s is a seven-ton monster, which surprisingly the DDH 280s can tow at higher speeds, significantly greater depths, and launch or recover in high seas.

The other major size factor weighing on the design of the DDH 280 is...
class is the all-gas-turbine propulsion plant. The physical plant isn’t bigger than a steam plant despite the big increase in power, but the turbines use much larger air intakes and uptakes.

At the Frontiers of Naval Engineering

While practically all the systems in the ships (some 150 systems are new) reflect improved concepts in Canadian naval engineering, some of the ships’ major innovations are at the frontier of world naval engineering.

The DDH 280s are the first ships of their size to go exclusively to gas turbines for main propulsion, although other warships are now being designed with all-gas-turbine plants and many large warships use turbines for boost power. Simplicity is very attractive to the warship designers who lay out ships’ compartments, and the all-gas-turbine plant is relatively simple compared to a steam plant with its myriad ancillary systems. Maintenance crews learn a cleaner and less complicated life. The turbines themselves are more suited to noise reduction engineering, and from a tactical standpoint they can raise full power from a start in less than half an hour. Steam plants take about half a day. The problem now will be to operate such large supermarkets, theatres, and their girl-friends’ arms fast enough to match the turbines’ performance.

The primary generator plant for ship services is also gas-turbine—the 750 KW generators. As far as the electrical designers know, no one else has tried gas-turbine generators with such a great deal of success but they feel they’ve beaten the problems (even for tropical conditions where British experiments had the most difficulty). An interesting aside—more than 10 per cent of the ship’s power will be closely regulated 400 cycles, compared to one half or one per cent in present destroyers.

No one in the world matches Canada in the basic helicopter-destroyer concept (operating a large helicopter from a small warship), and now Canada has embarked on another unique step—operating two large helicopters from a small warship. The ideas are made possible by the Canadian-developed bear trap haul-down system which yanks the helicopter down onto the flight deck. But it’s a tight squeeze! When the 62-foot Sea King sits on the hangar doors, there’s only 17 feet from the tip of the rotor blades to the hangar doors. As one aviator says, “When you start coming down at that little deck, you wonder how in heaven you’re ever going to hit it.”

A whole engineering section has grown up around the problem of repairing helicopters in their tiny tossing hangars. In the DDH 280s, maintenance men are able to change engines in the hangar using a monorail that runs along the deckhead. There’s more storage for spare parts in the DDH 280s, and one helicopter can always be stripped to keep the other one flying. The ships are designed slightly more tender with respect to pitch and roll so the helicopters can land more easily. The period or roll (side to side and back again) is nine seconds. Also during the development of the DDH 280s, people have been experimenting with new night landing aids. Helicopters, for the first time, are able to operate from the ships 24 hours a day.

These areas—helicopters, turbine generators, and turbine main propulsion—are all in the vanguard of naval engineering, and other navies will be watching the DDH 280s with great interest.

Complexity, Endless Detail and an Evolution In Canadian Industry

Ship construction and outfitting alone require 3000 drawings made up of about 5000 sheets, which works out to somewhere between 25,000 and 50,000 pages—or roughly the equivalent of 700 average-length novels. Thousands of equipment drawings are also involved.

The DDH 280 programme was the largest capital acquisition programme going for either DND or the Department of Supply and Services, and both departments are heavily committed. Almost every DSS procurement branch bought something for the programme, while DND supplied design and specification, overseeing, financial and logistic management through the long course of design, development, construction, trials and turnover.

Seven years is a long gestation period in the fluctuating climate of defence and government policy. Ideas on how the ships should perform evolved with time and slowly alter the ship’s sub-systems design. Either a warship is designed for the future or she is obsolete by the time she commissions. So at the outset of the DDH 280 programme, designers sketched in weapons, communications, detection and propulsion systems which were still in the barest stage of development. Designers then proceeded step by step with production.

This fluid development process alongside a rigid production schedule added a new dimension in organisation complexity—
particularly at the design-production interface. The engineers worked
in a high risk area, never perfectly certain that what they release for
production will withstand the demands of later development.
A warship works on a delicate ecology. The DDH 280s use gas
turbines, for instance, and gas turbines have a different kind of
exhaust than steam plants. First of all, the exhaust is 200 degrees
hotter, so the stacks had to be V shaped and made of heavier steel.
Not only is the exhaust hotter, there’s 11 or 12 times more of it —
which means big enough intakes and uptakes to create stress problems in
the hull.
So Dr. Gordon Biggs, Carlton University professor, made a photo
elastic analysis of a plastic hull to find the optimum position for
various deck openings in relation to the large intake and uptake holes.
Then the intakes and uptakes took so much room in the centre of the
ship, that communication channels, wiring, piping and people were
wedged into narrow compartments on either side. And that meant ...
the process went on and on. Like a time and the Mad
Hatter’s Watch

War in the 1970s might well be caricatured as technology chasing itself
around a watch dial. The weapons, fire control system, and command
and control system in the DDH 280s are graphic illustrations of tech-
ology’s race against time — reaction time. The main surface
armament is an Italian 5-inch gun which, when the present 3-inch guns
can be fired without a gun crew. It fires a maximum 45 rounds a
minute, and as one weapons expert says, “You can get away 44 rounds
before any of the gun crew arrive, and a further 22 rounds with just one
man loading. So really you can fire several dozen shells while the gun
crew is still piling out of bunks. We’ve eliminated human response time.”
The missile system also eliminates human response time. Fire
controllers can launch the first 16 missiles before the sailors reach the
missile loading compartment.

On most ships you can see the fire control radar dishes swinging
around, but on the DDH 280s the housed in two fibreglass radomes
like big golfballs teed up on the sundeck superstructure. The radars have a
track-while-scan capability which means the ship can look at air
and surface attacks with one radar at the same time.

In most destroyers, the unavoidable human bottleneck has been the
operations room plot table, where the tactical situation is re-created
for the captain by a number of plotters who get their information
verbally from radar and sonar operators. As the number of targets
on the table goes up, the plotters become busier and busier. More and
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Torpedoes blink. At the most only a few milliseconds separate actual events in the weapon environment, and the ship's command and control consoles. The system displays the tactical situation to the commander, offering solutions to various tactical problems, in the best time to fire, and evaluates or ranks the various threats. A computer is the heart of this system.

Naval tacticians who programmed the computers — a job which has taken 36 man-years, are at all risk. The future is so changeable, no one can possibly imagine every conceivable situation. The programmers put a trial program on one computer, and then tested it with the other computer. All the major electronic systems in the ship — the missile fire control and anti-submarine warfare and detection systems, radars, the log and gyro, and communications — feed into this one all-embracing brain. And a simulator is built right in, so the captain can throw false targets onto the scopes to see if his operators are napping.

Make It Smaller: Hallmark of the Digital Age

What are the secrets to these advanced capabilities? The answers are found in thousands of pimmed-size metal rings which nowadays constitute the circuits in the faded hieroglyphics of integrated circuits printed layer upon layer like electronic honeycomb. The leap from analog to digital technology is perhaps the greatest single difference between this class from earlier Canadian warships. The main command and control system is 95 per cent integrated circuits, a mere 5 per cent transistor, and the only tubes are large and light small cathode tubes in the display consoles. The computer itself has more computing power (though less storage space) than the immense North American Air Defence computers at Norad, which fill two huge rooms. Yet the ship's computer is only 56 inches by 30 inches by 18 inches and weighs 500 pounds.

Similarly, the new underwater detection system would fill the ship if it were built with electronics. The old sonars are a scanning type, and they scan over the beams that the transducers sends out. One of the beams is a split beam, with a receiver and the other an audio receiver. In the DDH 280 sonar there are 576 initial detection receivers plus 36 passive systems on the track receivers. There is an audio receiver as well but it's just a classification aid. Like the surface plant, the ship's detection system has its own set of display consoles rather than a plot table, and can track several targets simultaneously.

Through an automatic data link between the command control and computers, the DDH 280s are able to exchange information instantaneously with every ship, or with a number of NATO ships that use the same concept. The 30-odd communication points in the DDH 280s channel through a single communication console developed at RCA in Montreal.

Problems Merchant Ships Don't Have

Aside from things like dragging seven-ton sonar bodies beneath the ship and changing helicopter engines. Canadian warships require two specific areas of engineering foreign to most merchant ships. Because they are submarine detection platforms, as well as warships, their shape and machinery must cause as little noise as possible. And this attempt at noise reduction induced a number of unique features. The bow, for instance, is specially designed to type easily through the water. The intakes and uptakes for the gas turbines are all acoustically treated. The entire propulsion plant is mounted on "rafts" which insulate the machinery from the hull. All the machinery is mounted to transmit as little vibration to the hull as possible. If merchant ships aren't designed to survive a nuclear test, then the DDH 280s are. The machinery is shock-mounted to survive a nuclear concussion, and the hull uses a 460.8 steel which resists cracking from strong water shock. Again, as far as the designers know, the DDH 280s will be the first destructor class which can operate continuously in a nuclear biological or chemical cloud. The Annapolis class destroyers can seal a whole sonar platform in an acoustic cloud, but the DDH 280s were designed to operate sealed off for at least 30 days with the crew relatively comfortable. They can even send a dinghy away from the ship. The latter feature of reflecting the digital age in electronics, has proved to be the DDH 280s greatest asset. Most are advanced and particularly anti-submarine warfare with its chess pieces of long-range patrol aircraft, helicopters and squadrons of ships, is a team effort. And the DDH 280s have to act as fighting control centres now that the aircraft carrier is out of service. The DDH 280s are "all singing, all dancing," but are Canada's most advanced weapons platform, and between the offensive weapons and the defensive power, they are well-balanced ships.
A WARM WAR ATTACK ON AUSTRALIA’S SEABORNE TRADE

By A. W. GRAZEBROOK
Federal Vice-President, The Navy League of Australia

Since World War II, it seems to have assumed that by many Western World defence planners that an attack upon the trade of one of the world’s major trading nations would be so serious as to provoke nuclear retaliation. Therefore, such an attack upon trade would not occur. This argument may have been valid, in the fifties and early sixties, when the world’s major trading nations (Britain, the United States, and the Australian and Russian nuclear weapons strength were firmly in the domain of the U.S.S.R.

However, the U.S.S.R. and the United States now have more or less at parity in nuclear strength. The U.S.S.R. now controls nuclear weapons strength sufficient to respond to a United States nuclear attack with a very severe, if not knockout, impact. The level of balance of nuclear weapons may well force the United States to elect to use conventional against its trade from an attack by the U.S.S.R., rather than to throw at themselves a nuclear attack.

It has been repeatedly demonstrated that the defeat of a world wide seaborne trade must be a very severe, if not knockout, impact. The level of balance of nuclear weapons may well force the United States to elect to use conventional against its trade from an attack by the U.S.S.R., rather than to throw at themselves a nuclear attack.

The possibility of an attack on sea trade involves the fundamental characteristics of strategic thinking: (a) The Western Nations (Japan, Australia/New Zealand, the EEC, the USA) are much more dependent upon seaborne trade than are the U.S.S.R. China and her allies.

(b) The U.S.S.R. and China, being less dependent on seaborne trade than the Western Nations, are in the position of being able to attack in an area where Western defence is most vulnerable. This area moreover where the Western cannot attack them so effectively.

(c) Minor attack upon seaborne trade involves the attacker in the deployment of minimal resources, but forces the defender to devote enormous resources to defend his trade.

(d) An attack upon seaborne trade involves, primarily, an attack upon material things, with minimal risk to civilian life. The risk to civilian life in mining a cargo ship with the risk involved to civilians in blowing up a major industrial complex near a big city.

In summary, the U.S.S.R. and China now have, in their ability to attack, a severely inhibit the seaborne trade of any of the world’s major trading nations, a weapon they can use which:

(a) Presents them with a pronounced vulnerability to the West’s defences.

(b) Can be used without more than minor adverse effect upon Third World public opinion.

(c) Is cheap to use and involves their opponents in very substantial expenditure.

(d) Could bring at least some Western trading nations (Japan, the United Kingdom) to their political knees, without the destruction of resources involved in nuclear attacks on military invaders.

It seems clear, in the light of what is now known, that the interruption to their seaborne trade had brought Japan to the point of collapse in 1945 and that the atomic bombs on Hiroshima and Nagasaki caused her to surrender a few weeks before she would otherwise have been forced to do so. Most historians are aware of the fact that, apart from relatively recent interference, intervention on seaborne trade was constant even when war had not been declared — the activities of Drake and the Barbary Pirates are examples.

As one of the world’s major trading nations, Australia is vulnerable to the same kind of pressure. However, in addition to our overseas trade and our “offshore” trade, there is trade within Australia.

In summary, the U.S.S.R. and China now have, in their ability to attack and severely inhibit the seaborne trade of any of the world’s major trading nations, a weapon they can use which:

(a) Is a genuine threat to our economy and lifestyle.

(b) Is an effective weapon to use in a “cold war” situation.

(c) Can be used without more than minor adverse effect upon Third World public opinion.

(d) Is cheap to use and involves their opponents in very substantial expenditure.

(e) Can bring at least some Western trading nations (Japan, the United Kingdom) to their political knees, without the destruction of resources involved in nuclear attacks on military invaders.

A severe inhibition of Australian trade would have a serious adverse effect upon our major trading partners, Australia not being able to produce the goods in large quantities. Such a situation would in turn have a serious adverse effect upon our raw material supplies, which are essential to our economy and lifestyle.

The possibility of an attack on seaborne trade involves the fundamental characteristics of strategic thinking: (a) The Western Nations (Japan, Australia/New Zealand, the EEC, the USA) are much more dependent upon seaborne trade than are the U.S.S.R. China and her allies.

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However, it is probably safe to assume that neither the U.S.S.R. nor China would demonstrate the determination against Australia. Recent history shows that, if they wish to apply nuclear pressure upon Australia, they would aim at such a minor halt她们 might, of her own admission, apply “warm war” pressure, using conventional means of encouragement and support from a major power. In 1971, India acted in this manner upon Australia with constant pressure, such as the Russian vacuum cleaner, and it would seem most unwise to suffer such pressure upon our trade, on the plan western defence upon the basis of Australia/New Zealand, the EEC and the United States.

In the event of an attack upon seaborne trade, on the plan western defence upon the basis of Australia/New Zealand, the EEC and the United States, we would be extremely vulnerable and in a very serious position. The U.S.S.R. and China would be able to apply “warm war” pressure, using conventional means of encouragement and support from a major power. In 1971, India acted in this manner upon Australia with constant pressure, such as the Russian vacuum cleaner, and it would seem most unwise to suffer such pressure upon our trade, on the plan western defence upon the basis of Australia/New Zealand, the EEC and the United States.

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US Navy's Latest Destroyer Launched

US NAVY SPRUANCE-CLASS (DD-963) DESTROYER

An artist's drawing of the Spruance-class of destroyers on completion.

These multi-mission destroyers are capable of anti-submarine warfare, air defence against aircraft and missiles, shore bombardment, and surface warfare. They can also provide gunfire support for amphibious assaults and land warfare, escort military and merchant convoys, perform surveillance and trailing, participate in blockades and handle search and rescue missions.

The Spruance-class vessels are nearly 560 feet long with a 55-foot beam, a displacement of approximately 7000 tons and a speed in excess of 30 knots. They are the first major combatant ships in the US Navy to use marine gas turbine engines for main propulsion. Their weapon systems include anti-submarine torpedoes and rockets (ASROCs), Sparrow missiles, five-inch fully automatic guns and helicopters.

The extensive electronics systems, accounting for nearly 30 per cent of the cost of each ship, are initially tested in a command and control shore station in Southern California, where the computer system programmes also are developed. The unique land based test facility, located at the shipyard, is used to integrate electronic components into systems and to test them under simulated combat conditions prior to installation aboard ship as one unit. This method accounts for considerable savings in initial installation, as well as future modernisation.

Five succeeding ships are already in production. In addition to the Spruance (DD-963), keels have been laid for another four ships in the series (DD-968) in the series (DD-964) also has been laid, marking the start of erection and assembly of previously fabricated steel. Fabrication of steel for the sixth ship in the series (DD-968) has begun, and its keel will be laid in January.

Succeeding ships named by the Navy to date includes USS Foster (DD-964), USS Richardson (DD-965) and USS Hewitt (DD-966), all named for distinguished admirals of World War II.

US Spruance is named in honour of Admiral Raymond A. Spruance. In World War II, during the battle of Midway, Spruance's force turned back a vastly superior Japanese invading armada inflicting the first decisive defeat on the Japanese Navy in 350 years. Two years later, during the invasion of Saipan in the Marianas Islands, forces under Spruance's command shattered the Japanese naval air force in the famous "turkey shoot".

Mrs Raymond A. Spruance, widow of Admiral Spruance, was the ship's sponsor, and christened the ship with the traditional burst of champagne.

In addition to anti-submarine warfare, the destroyers can be assigned to bombard shore positions, support amphibious assaults, escort military and merchant ship convoys, perform surveillance and trailing of hostile surface ships, establish blockades and undertake search and rescue operations.
The Naval Reserve Cadets are an approved organization of the Australian Naval Board. The Cadets provide training for boys and girls between the ages of 13 and 18 years, and are administered by the Naval Reserve Cadets Act. The 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, the 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, 4033.
WESTERN AUSTRALIA: C/- 182 Cooda Street, Como, 6152.
SOUTH AUSTRALIA: C/- Box 227, Post Office, Adelaide, 5001.
VICTORIA: C/- Boa 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

STATE OR TERRITORY

POSTCODE

PHONE No

AGE

(Signature)

(Please Print Clearly)

(Your address, if you are an address book holder, please check the box below.)

This form may be used to obtain further information from the Naval Reserve Cadets.
Best Wishes to All Navy League and Naval personnel from...

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queensland since 1848

THE YEAR 1974 IS ONE OF SOME SIGNIFICANCE IN QUEENSLAND AND NAVAL HISTORY.

It is the bicentenary of the birth of Matthew Flinders, the centenary of the visit of HMS Challenger to North Queensland, and the twenty-first anniversary of the establishment of the Queensland Division of the Navy League.

Flinders and Challenger have left their names in maritime history and the Queensland Division also intends to be well remembered in its own state and possibly even in Canberra.

From a small League committee in Brisbane and a Sea Cadet Unit at Moreton, commanded by Lieutenant-Commander L. D. M. Roberts, MBE, RANR, the Division established Branches and Sea Cadet Units at Southport, Bundaberg, Mackay, Townsville, Cairns and ‘Magnus’ at the Church of England Grammar School, Brisbane.

During the last decade a dynamic youth organisation at Stafford, Brisbane, became associated with the League with TS Paluma, and their Commanding Officer, Lieutenant Commander F. Dixon, MBE, is now Senior Officer, of the Naval Reserve Cadets in Queensland.

All this has been done by a League membership which rarely exceeded fifty men and women, and the present impressive series of unit Headquarters are a tribute to their quality and energetic community involvement.

The latest example of League progress is at Cairns. where the Branch has acquired a working vessel of 160 tons powered by a 230hp diesel engine and with ample accommodation and facilities.

This vessel was built at Cairns in 1943 and until her replacement was undertaken her refit, so that when painted white overall, she will be commissioned as MV Triton.

This valuable asset will be operated by the Branch as a charter vessel, with access for Naval Reserve Cadets and hopefully, numerous bookings for interstate cadet groups who may want to do sea time in Barrier Reef Waters.

All the Branch properties are now capable of handling visiting groups of cadets, and such visits were a feature of the days of the joint administration.

Whether the all-Navy control of cadets will significantly alter these admirable exercises remains to be seen.

The altered status of the League and Navy has operated smoothly in Queensland with a high degree of cooperation from both sides and rent being received regularly by the Branches.

The current decentralised organisation was set up by the first Secretary, Geoffrey O'Neill, and enabled the change over to be implemented without a hitch.

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The latest example of League progress is at Cairns. where the Branch has acquired a working vessel of 160 tons powered by a 230hp diesel engine and with ample accommodation and facilities.

This vessel was built at Cairns in 1943 and until her replacement was undertaken her refit, so that when painted white overall, she will be commissioned as MV Triton.

This valuable asset will be operated by the Branch as a charter vessel, with access for Naval Reserve Cadets and hopefully, numerous bookings for interstate cadet groups who may want to do sea time in Barrier Reef Waters.

All the Branch properties are now capable of handling visiting groups of cadets, and such visits were a feature of the days of the joint administration.

Whether the all-Navy control of cadets will significantly alter these admirable exercises remains to be seen.

The altered status of the League and Navy has operated smoothly in Queensland with a high degree of cooperation from both sides and rent being received regularly by the Branches.

The current decentralised organisation was set up by the first Secretary, Geoffrey O'Neill, and enabled the change over to be implemented without a hitch.

It is the bicentenary of the birth of Matthew Flinders, the centenary of the visit of HMS Challenger to North Queensland, and the twenty-first anniversary of the establishment of the Queensland Division of the Navy League.

Flinders and Challenger have left their names in maritime history and the Queensland Division also intends to be well remembered in its own state and possibly even in Canberra.

From a small League committee in Brisbane and a Sea Cadet Unit at Moreton, commanded by Lieutenant-Commander L. D. M. Roberts, MBE, RANR, the Division established Branches and Sea Cadet Units at Southport, Bundaberg, Mackay, Townsville, Cairns and ‘Magnus’ at the Church of England Grammar School, Brisbane.

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Tight Binding

Naval Reserve Cadet News

TASMANIA
Submitted by JACK MILLAR
TS Macquarie Sea Cadets sell training ketch.
Sea Cadets based at Strahan, on Tasmania’s west coast, have sold their 87ft training ketch Reginald M. The Reginald M was bought in Adelaide by the Mt Lyell Co for use as an explosives storage craft in Macquarie Harbour. It had originally been used as a wheat trader in South Australian waters. TS Macquarie caters for about 30 boys and the purchase money from the ketch will provide them with several smaller boats such as sabots, navy whalers or 40ft dinghies. The unit has been functioning for about two years, although it received Navy League recognition only in May this year.

Know Your Commanding Officers
Submitted by A.J. LEE
Lieutenant Allan Cleaver, the CO of TS Tamar, served in the RAN during World War II between 1940 to 1946. Seeing action in “N” class destroyers in the Mediterranean, Indian Ocean and Pacific plus two years in the New Guinea area.
In the New Guinea area he was a prominent boxer fighting in Milne Bay and Morotai. He was also considered to be a first-class hockey player and after his discharge was an interstate player on many occasions.
In 1953 he joined the Sea Cadet Corps as an Instructor Petty Officer for gunnery and seamanship.
During the past twenty years he has gone through the normal promotion channels being appointed Lieutenant in March, 1969. He has seen many changes in his Unit, going from rented premises miles from the river to the present Headquarters on the river bank.
Lieutenant Cleaver became Commanding Officer of Tamar in 1969.
and in his first year was awarded the State Colours. He has been awarded the Naval Volunteer Reserve Medal and Bar for long service.

* * *

The Commanding Officer of TS Leven, Lieutenant Bruce Bates, joined the RANR in July 1944, and served in Boom Defence at Darwin, and HMA Ships Huon and Cerberus. He was discharged in August 1946.

Bruce rejoined the RAN for a two-year interim period in July 1947. He completed the Electrical Course at Cerberus and was drafted to commission HMAS Sydney. He arrived in England in June 1948, and returned with Sydney to Australia in May 1949.

He joined the ASCC in September 1963, as a P/O Instructor and became a Chief Petty Officer in May 1965. He was promoted to Sub-Lieutenant in 1966 and Lieutenant in 1971. Lieutenant Bates assumed command of TS Leven in 1972 relieving Lieutenant Commander G. T. Baxhall who became Divisional Training Officer. Bruce's main task ahead is to rehouse his Unit in new buildings as the present one is no longer satisfactory.

A DAY ON THE BAY

The Federal President of the Navy League (Commander Geoff Evans) had a number of distinguished guests in the yacht Winston Churchill recently. They included Mr Frank Crean (Federal Treasurer) and Mrs Crean, three leading Melbourne newsmen, Messrs Graham Perkin, Lyle Turnbull (also a yachtsman of note) and Harry Gordon; and the Naval Officer-in-Charge Victoria, Commodore Brian Murray. Mrs Ann Burrows, wife of the Victorian President (Alan Burrows), who was in Sydney at the time, chaperoned Mrs Crean.

Winston Churchill is on charter to the Victorian Division, and is used for Naval Reserve Cadet training purposes. On this occasion the 52 foot cutter was skippered by Lieutenant Commander (Cadets) Ray Applebee, and manned by nine instructors and Cadets from TS Voyager. The yacht's owner, Graham Warner, and his wife Joyce are both active members of the Victorian executive of the League.

Although the party set out in comparatively quiet conditions, the weather changed (as it so often does on Port Phillip Bay!) after an hour or so, and as one guest put it afterwards Churchill became "very lively". However, the party returned to harbour in good order and condition if somewhat damp. (It was subsequently remarked that had misfortune overtaken Churchill and her company it would have been a quite newsworthy event.)

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