

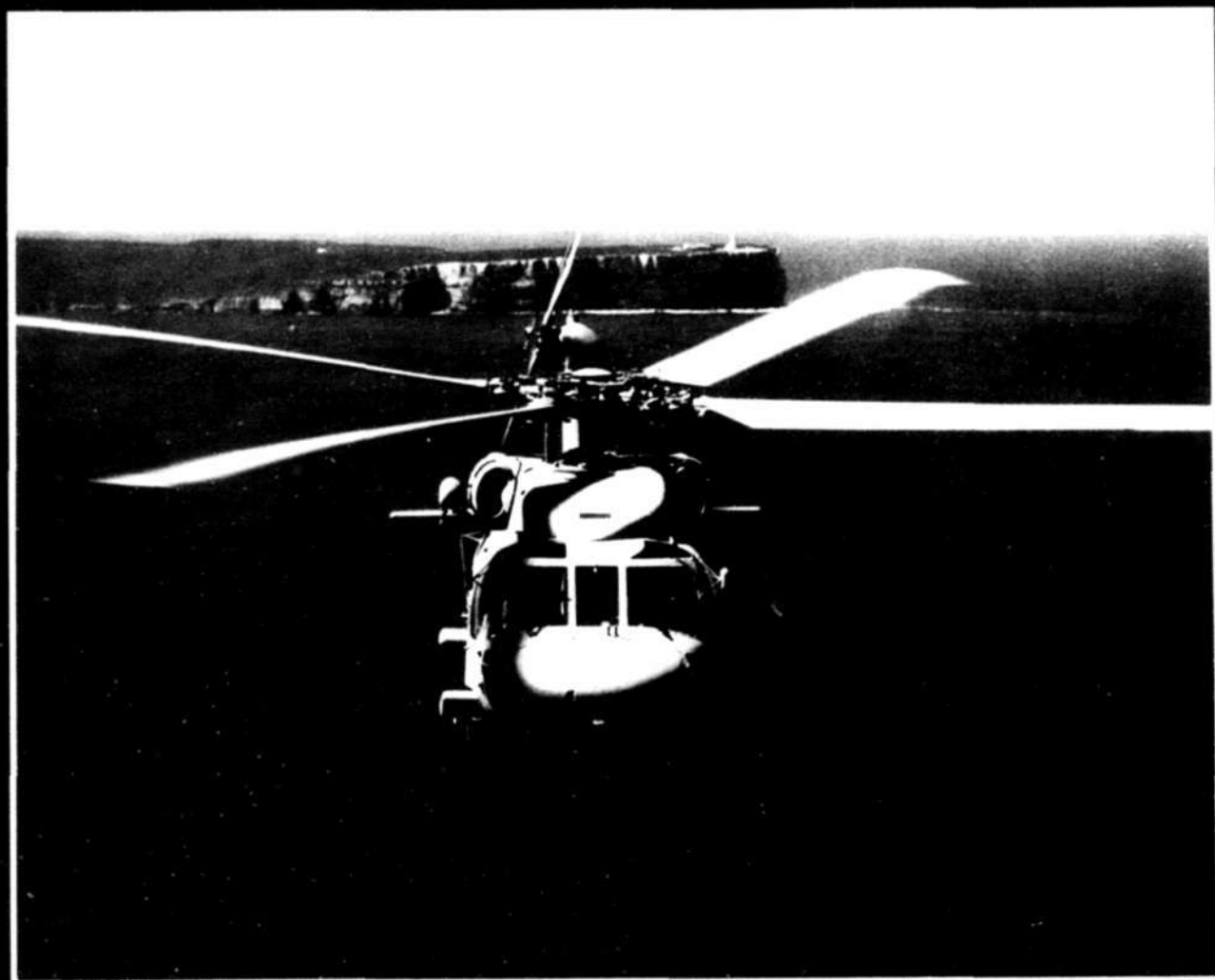
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JANUARY – MARCH, 1990

# THE NAVY

*The magazine of*  
THE NAVY LEAGUE OF AUSTRALIA

\$2.50



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The magazine of THE NAVY LEAGUE OF AUSTRALIA

Vol 52

JANUARY – MARCH 1990

No. 1

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## OUR COVER PHOTOGRAPH

The New S-70-B2 Seahawk Helicopter

January-March, 1990

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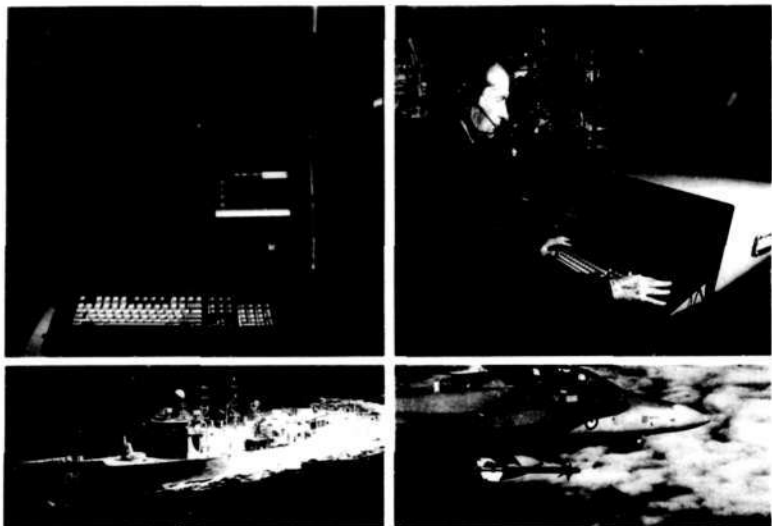
TV1, TORTOISE, arriving in Sydney for Navy Week, 1989

THE NAVY

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# Ada

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**viewpoint**

## COMMUNITY DISCORD MAKES US VULNERABLE

In at least one respect Australia is quite unique and unlike any other country in the world.

It is a continent inhabited by a basically homogeneous people who are different in many ways from all their neighbours with one exception, the people of New Zealand. In a cultural sense Australians and New Zealanders are isolated communities.

This need not be a matter for concern if Australia had a population more in keeping with its size but it does not – the combined population of Australia and New Zealand is insignificant in world terms or when measured against the population of neighbouring countries.

Given the circumstances one might think the Australian community would be an exceptionally united one – which is not to say it would be without differences and disagreements; human nature is not like that. Instead we appear to be too often carrying our differences to extremes, not only doing ourselves considerable damage in the process but creating an impression of disunity more appropriate to the less-than-homogeneous peoples of Europe, the Americas, Asia and Africa.

Disunity inevitably weakens a nation and makes it vulnerable to stronger societies. In a world in which changes are taking place with surprising rapidity Australians simply cannot afford the luxury of internal dissension and divisions without expecting to pay a price for it at some time in the future.

It is often said Asia and the "Pacific Rim" countries will in the course of time become a kind of powerhouse in terms of trade and economic influence; indeed, an Asian nation, Japan, is already immensely wealthy and able to influence national economies – including Australia's – on a world-wide scale.

Not so often mentioned is the fact that a number of countries in our area possess formidable military forces, forces moreover used from time to time in pursuit of perceived national interests. A future powerhouse maybe, but to some extent a powder-keg as well.

Some years ago the writer suggested in an article featured in the Melbourne HERALD that our sole occupancy of Australia would one day be challenged – that unless we developed the country it was inevitable.

We are not helping ourselves in the slightest by quarrelling over virtually every proposal for development put forward, whether it be an increase in population, better transport links between centres of population, mineral exploration in a resource-hungry world – even a plan to build a number of modest naval vessels in the country generated controversy and ill-feeling between states and cities.

Australia has so much to offer but its people must get their act together and put discord aside if they wish to retain ownership, let alone build the great nation it could become.

**GEOFFREY EVANS**  
*Federal President*

### STOP PRESS

At the conclusion of the annual meeting of the Federal Council of the Navy League in Fremantle recently, the Federal President issued the following press release:

- The Federal Council emphasised the need for a major ship to operate helicopters in the anti-submarine and army support roles. Preparatory operations to rescue Australian citizens from the consequences of the Fiji coup had demonstrated the Australian Defence Force's urgent need for such a vessel.
- The Federal Council also emphasised the importance of re-deploying half of the fleet to HMAS STIRLING as part of

Australia's endeavours to build a two-ocean navy. The Council welcomed the decision to build eight ANZAC class frigates, the first of which was planned to be on station at HMAS STIRLING in the mid-1990s. The Council strongly recommended the need to equip those ships with five inch guns which are essential for ships operating in the Indian Ocean, and also to ensure that the ships are equipped with their full armament when first commissioning.

- The Federal Council welcomed the reduction in superpower confrontation in Europe. However the decrease in superpower rivalry would not necessarily improve Australia's security. Indeed it could result in an increase in tension amongst regional powers, the consequences of which could not be foreseen. Australia must develop further its self-reliance, particularly in the maritime field.

- The Federal Council urged that the maintenance ship HMAS STALWART be placed in un-maintained reserve at minimum cost instead of being scrapped. She is in excellent condition, and is most valuable for supporting naval operations in forward areas, noting her capacity for repairing damage, operating helicopters, and providing power, berthing facilities and accommodation. She would also be invaluable in national disasters, and other emergencies.

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# viewpoint

## SAINT CLASS TUGS IN AUSTRALIA

Dear Sir,

Some 46 of the Admiralty Saint Class tugs were built in Scotland, England, Belfast and Hong Kong in the years 1918, 1919 and 1920. Some were retained by the Royal Navy for target towing, harbour work etc but many were sold to private companies.

The situation in Australia between 1920 and 1928 was that overseas passenger companies were planning much larger ships. The P & O Company had the 18,000 tonners NALDERA and NAREKUNDA and the 21,000 tonners MOOLTAN and MALOJA entering service and the Orient Line was planning a series of 20,000 tonners of the ORAMA class. The Canadian - Australasian Line had the AORANGI 18,000 tons building.

To cope with these new ships the tug company J and A Brown purchased ST. ARISTEL, ST. HILARY, ST. GILES, ST. MARYN and ST. OLAVES, while Fenwicks purchased two, HEROS ex ST. EARTH and LINDFIELD ex ST. CLAUDE. Browns also had another Royal Navy tug ROLLICKER which was much larger and had two funnels.

ROLLICKER proved to be uneconomic and after a short time Browns sold her.

Browns sold their tugs to Waratah a subsidiary of Adelaide SSo about 1930. ST. MARYN was laid up at the Waterview Bay depot of Adelaide SSo and was never used by Waratah. She was sold to Möllers of Hong Kong after being out of commission 12 years, in June 1937.

Fenwicks used HEROS quite a lot but LINDFIELD was idle for several years until being recommissioned January 1939.

HEROS had her bow built up January 1939 for the RAN.

St. GILES was prepared for naval work the same month by S G White of Balmain.

It might be worth noting that a Wellington tug TOIA ex ST. BONIFACE ex ST. FERDUS of the class was due for scrapping. Instead, on 28 May 1949 she was handed back to the New Zealand Navy for training stokers in coal firing.

Dimensions of ST. Class  
Length 136 ft  
Beam 29 ft  
Depth 13'6"  
Length of forecastle 36 ft

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# HMAS STALWART 1968-1989

The Navy's destroyer tender, HMAS STALWART, will pay off in mid-December to make way for the entry to service of the new auxiliary tanker, HMAS WESTRALIA.

The decision to decommission and sell STALWART, built to maintain the Fleet's destroyers and frigates between major refits, and used more recently for training, comes 21 years after she was commissioned.

The Acting Chief of Naval Staff, Rear Admiral Ken Doolan, said the Defence Force Development Committee (DFDC) had agreed in May last year that the ship should be withdrawn from operational service late in 1989.

"This was to coincide with the resumption of service of our other training ship, HMAS JERVIS BAY, which is nearing the end of a major refit at the Garden Island facility," he said.

Admiral Doolan said the decision to decommission STALWART, flagship of the RAN fleet for the past seven years, was made reluctantly against the background of financial restraints in Defence funding.

The Chief of the Naval Staff, Vice Admiral Michael Hudson had thoroughly reviewed options for the future of STALWART since the DFDC decision to withdraw her from operational service.

"Admiral Hudson came to the reluctant conclusion that retention of STALWART beyond decommissioning in mid-December would be to the detriment of higher priority activities," Admiral Doolan said.

"Offsets in manpower and funding are necessary to permit the operation of WESTRALIA, and the possibility of placing STALWART in reserve involved additional funding and allocation of scarce manpower resources."

Admiral Doolan said the Navy also considered the possibility of allocating sufficient funds to bring STALWART to a condition where she could be offered for sale as a 'going concern'.

"Unfortunately there is little demand for such specialised vessels and nor are funds available for this purpose," he said.

"This uncertainty had forced the decision to dispose of the ship, which will be arranged as soon as possible after decommissioning — probably early next year."

"STALWART has served the nation well and we will be sorry to see her go."

STALWART left Sydney on October 9 on her last overseas deployment. She will visit Singapore, Indonesia and New Caledonia



STALWART under construction



At Sea, 1968

before returning to Sydney. The new auxiliary tanker is currently undergoing a workup in UK waters and will arrive in Australia just before Christmas.

## HMAS STALWART

STALWART was planned and built for the purpose of maintaining the fleet's destroyers and frigates as fighting units between major refits.

For this purpose she was fitted as a mobile base facility which allowed vessels coming alongside to shut down and have repairs carried out as in a shore base. STALWART was able to supply such services as fresh water, steam, electricity and telephone services.

After trials and a working up period, STALWART began duty as a maintenance ship in March 1968. Since then she has served in Australia and Far Eastern waters as well as Papua New Guinea and New Zealand. Later in her career she was to serve as Fleet flagship and as a training ship.

Highlights of STALWART's career include deployment to Darwin in January 1975 as part of the Navy's contribution to relief efforts in the aftermath of Cyclone

Tracy. She was present at the celebrations to mark the granting of independence to PNG in September 1975. She was again involved in disaster relief in June 1986 in Honiara. In September 1986 she hosted a Cabinet meeting at sea.

STALWART also took part in two precautionary deployments in the South Pacific following the outbreak of civil disturbances in Fiji in May 1987 and Vanuatu in May 1988.

Length: 165 metres  
Beam: 20 metres  
Draught: 6 metres  
Displacement: 15,000 tonnes (designed)  
Speed: exceeding 20 knots  
Armament: Two 40 mm Bofors AA  
Laid down: June 23, 1964  
Launched: October 7, 1966 by Lady Casey, wife of the Governor General

Commissioned: February 9, 1968  
Builders: Cockatoo Docks and Engineering Co. Ltd. Sydney  
Propulsion: Two 6 cylinder Scott-Sulzer diesels of 7000 hp driving twin screws  
Complement: 323 (including trainees)



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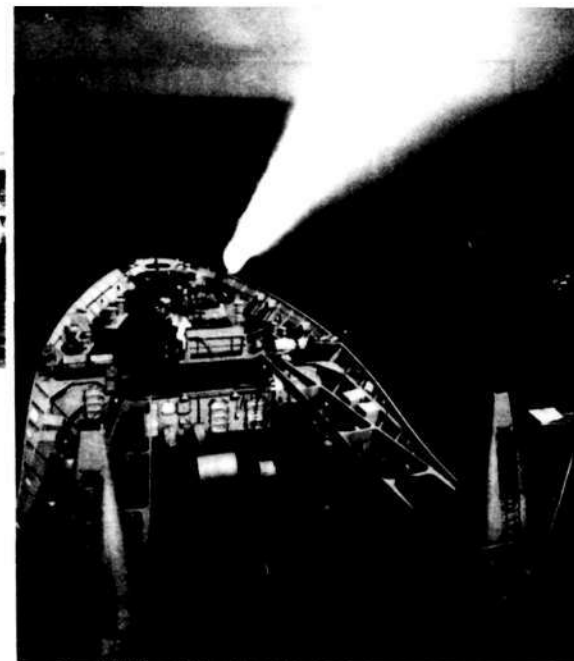
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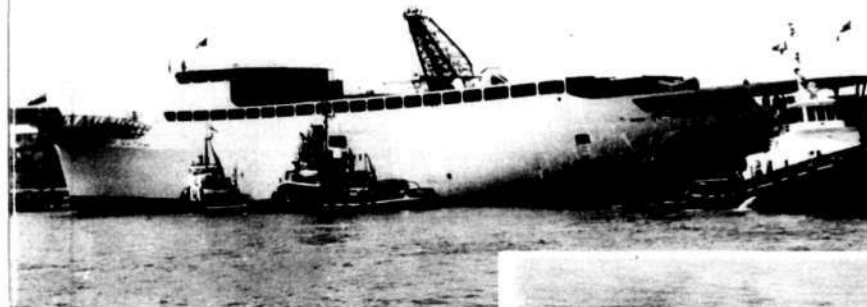


1970 — at the EMS mooring with her consorts.

Launching Day



Tracer bullets from the forward gun light up the night sky in the Arafura Sea, 1978



Stalwart exercising with the Indonesian Navy



Stalwart enroute to China with four other RAN Ships, 1984



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## NAVAL MATTERS

# An Offshore Patrol Helicopter Carrier for Thailand

by A.W. GRAZEBROOK

**The Royal Thai Navy is examining the acquisition of an offshore patrol helicopter carrier.**

They commissioned Bremen Vulkan Schiffbau und Maschinenfabrik to develop a proposed vessel.

A brief description was completed in August, 1989.

The vessel was required to undertake patrol work in Thailand's 200nm EEZ, protect exploration work for oil and gas, provide fishery surveillance, protect Thailand's offshore islands, undertake natural disaster relief, improve Thailand's anti-submarine warfare capability, and greatly enhance Thailand's maritime surveillance capability.

The vessel outlined by Bremer Vulkan is capable of accommodating six Sea King/EH101 sized helicopters or 4 Sea Harrier sized aircraft in a hangar below decks. She would have one lift and a foldable hydraulic side ramp, with four flight spots on the flight deck. Significant aircraft maintenance capability would be fitted.

Damage control arrangements would be fairly comprehensive, with 18 compartments divided into three damage control areas.

The ship would be equipped for command and control. There would be some troop transport capability, with two LCPVs and a service boat at davits.

The ship would displace 6200 tons, with an overall length of 127 metres. With a range of 12000nm at 12 knots, and a maximum speed of 26 knots, the diesel driven ship would have a ship's company (including air wing) of 208 persons, a command group of 13 and accommodation for 249 troops.

The ship's company breaks down into 129 personnel for the ship herself, 36 flight personnel, 34 air maintenance personnel, and 9 spare.

The Bremer Vulkan proposal is for a fairly heavily armed ship. For anti-aircraft warfare, the ship would have 16 Sea Sparrow missiles (fired from one launcher forward and another aft), long, medium and short range surveillance radar, two fire

control channels with radar, one with optronics capability, and ESM. A five inch Mark 45 gun would provide surface warfare capability. There would be electronic counter measures, decoy launchers (SBROC), a 40mm gun, 2 FC radar channels, one FC optronic channel, and a hull mounted sonar.

The helicopters, equipped with dipping sonar or sonobuoys, ASW torpedoes and data and communications links with the ship, would provide the main anti-submarine warfare capability.

It remains to be seen whether Thailand proceeds with the acquisition of this or another larger type of offshore patrol helicopter.

However, it raises once again the RAN's need for a vessel of similar capability. The Bremer Vulkan proposal is remarkably similar in size and capability to the ship developed by Carrington Slipways and offered to the Australian Government for the RAN shortly after Australia refused Britain's offer of HMS HERMES (at 50 million pounds) — the ship now in service with the Indian Navy in our region.

The Carringtons proposal was not accepted by the Government.

More recently, a proposal to modify the training ship HMAS JERVIS BAY to operate up to six helicopters has been turned down. The reported cost of this, about \$20 million, is not large by defence equipment standards and cannot have been the primary obstacle.

The case for such a ship is very strong.

When MELBOURNE was scrapped without replacement, Navy's Sea King anti-submarine helicopters were left ashore, unable to take their place with the Fleet in any but a very limited way. On occasion, one operated from HMAS STALWART until that ship was paid off. Now, the Sea Kings must operate from airfields ashore. This effectively limits Sea King Operations to 250nm from an airfield capable of supporting that type of helicopter.

The Sea Kings, fitted with dipping sonar, provide the long range targeting capability for the Ikara anti submarine weapons fitted to our three DDGs and five River class destroyer escorts. Without the Sea Kings, the Ikara is limited to close range operations.

The commissioning of the Seahawk S70B2 helicopters will not fill this serious gap in the RAN's ASW capability. Initially at least, the Seahawks will not have dipping sonars.

The case for an ASW helicopter platform for the RAN is clear and strong. It has been strong since 1983. It is now even stronger.

More recently, the planned civilian rescue operation following the military coup d'etat in Fiji demonstrated again the vital need for a helicopter platform capable of vertical delivery of personnel. Reportedly, this need was supported strongly by Army Field Force Command.

This need lay behind the proposal to modify HMAS JERVIS BAY.

Even this very strong case has been rejected by Government.

Recent political commentary suggests that the basic reason for rejection is a fear that the acquisition of a helicopter platform ship would be interpreted as signalling an aggressive intent towards our neighbours.

It is ludicrous to suggest that such a ship, equipped with ASW helicopters, is aggressive in nature. ASW is essentially defensive.

Even if the ship were equipped with vertical assault helicopters (of which Australia has none fitted for seaborne service), it would be ludicrous to suggest that 270 troops, with minimal vehicles accompanying the force, and with minimal follow up support, would be capable of any sort of significant trans oceanic offensive military operation.

Other nations in our region build the ships they consider necessary for their own defence. Australia must do the same. Australia must cease being timid in developing the defence force we consider necessary.

# SEAHAWK ROLL-OUT

Australian industry would receive work worth \$100 million to build 16 Sikorsky S-70-B2 Seahawk anti-submarine warfare (ASW) helicopters, the Defence Science and Personnel Minister, David Simmons, has announced.

Speaking at a Rollout at Naval Air Station Nowra to mark the entry of the first Seahawk into the Royal Australian Navy, Mr Simmons said Australian industry participation represented 40 per cent of the main contract with Sikorsky.

The new Seahawks will provide surveillance and weapon targeting from ships, adding a new dimension to Australia's ability to counter submarine threats to our international trade routes.

As the Government's 1987 Defence White Paper foreshadowed, the Seahawks operating from 6 FFGs would complement the capability of the Navy's Seaking helicopters



The New S-70-B2 Seahawk Helicopter

THE NAVY

## SEAHAWK ROLL-OUT - Continued

to provide coastal and choke point ASW operations from land bases.

The Seahawks will also be capable of deploying in the new ANZAC-class frigates.

The total project cost of more than \$620 million includes \$250 million for the main contract with Sikorsky for 16 aircraft and an Aircraft Weapons Software Support Centre and about \$370 million for spares, logistic support and facilities.

Eight of the 16 Seahawks will be assembled by Aerospace Technologies of Australia (ASTA) at the Avalon plant in Victoria, which assembled 75 FA-18 fighters for the Air Force.

The first Australian-assembled Seahawk is expected to roll off the ASTA production line next August.

Other companies expected to benefit from either direct participation or offsets from the Seahawk program include Computer Sciences of Australia in Sydney, Rockwell Electronics Australia in Melbourne, Hawker de Havilland in Victoria and Hawker de Havilland in Bankstown.

The Aircraft Weapons Software Support Centre, developed by Computer Sciences of Australia in partnership with Collins and Sikorsky, would allow the Navy to maintain and modify the tactical data system software through the life of the helicopter.

It would also provide a mission replay/reconstruction capability for analysis of training and operational exercises in the aircraft.

## BACKGROUND

The Australian S-70-B2 is developed from the very successful Sikorsky SH60-B Seahawk helicopter designed for the US Navy. The USN has 140 of these aircraft in service.

Each of the new Australian ASW helicopters, however, will be able to process its own mission sensor information and operate independently of its parent ship. Sensors available for surface ship and submarine hunting include radar, a sonobuoy acoustic processing system which includes the Australian Barra system and a magnetic anomaly detection (MAD) system.

Processed information on surface and subsurface activity will be available to the ship via a secure data link to provide targeting for both the helicopter's and ship's weapons systems.

## S-70B-2 PARTICULARS

### Speed:

maximum 180 knots  
cruise 135 knots

### Range:

Endurance for ASW surveillance at 60 nautical miles - 2.7 hours

### Weapons:

can carry two Mk 46 torpedoes



### Weapon Systems:

Collins Tactical Data System  
Collins Tactical Management System  
Collins Communications and Navigation Subsystems  
MEL Supersearcher Radar  
CDC Acoustic Sonobuoy and Barra Processors

CAE Magnetic Anomaly Detector  
Collins Tactical Data Link

### Crew:

one pilot  
one tactical co-ordination officer  
one sensor operator

### Weight:

maximum gross-9454 kg (20,800lb)

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## SOVIET NAVAL DEVELOPMENTS

### Soviet Naval Shield Reflects WW11 Experience

by Steven Zaloga

Naval doctrine is inevitably shaped by the history of past combat experiences. The Soviet Navy's historical experiences in World War II were fundamentally different from the US Navy's experiences, thus their respective naval doctrines display substantial dissimilarities. One of the most noticeable differences is the Soviet Navy's response to the threat of air attack against surface combatants. Besides shaping design considerations for surface warship air defense protection, historical experience has led to differences in the force structure of the two navies, resulting in the sizeable land-based naval air force of the Soviet fleet.

In World War II, geography and the German Luftwaffe conspired against Soviet surface fleet deployments. The major ports were within easy striking range of German air units, and the Soviet fleets took a merciless pounding at their hands. In 1941 the Luftwaffe hounded the Baltic Sea Fleet back to its ports around Leningrad. They were effectively bottled up until late in the war by mines and air action. Operations by the Black Sea Fleet were severely constrained through most of the war by the threat of air attack. The Northern Fleet, and allied convoys passing to Murmansk, were roughly handled by German air units. Half of Soviet surface warship losses were to aircraft; most of the remainder to mines, many air-dropped. During the war, the Soviet Navy's surface warships did not manage to sink a single major enemy surface warship, largely due to the constraints on operations posed by German air units.

In past decades, the Soviet Navy has tried to avoid a repetition of this experience by four principal means – three quite traditional, and one quite new. *Missile air defense* holds out the hope of offering a

more effective shield against enemy air attack than gun air defense did in WWII. The Soviet fleet has been pursuing a very active program of warship air defense modernization over the past decade, with several intriguing new developments. Secondly, the lack of full-deck aircraft carriers has obliged the Soviet Navy to pay greater attention to *land-based naval air defense* aviation, a role virtually nonexistent in the US Navy. In the past few years, there has been evidence of an important new program to modernize land-based air defense units with a new generation of interceptors, notably the Su-27 Flanker. Soviet naval losses at the hands of land-based bombers has led to a long-standing commitment to their own *land-based antiship bombers*, another element of the Soviet fleet with no close American counterpart. The fourth means to defend the fleet against the air threat will probably become manifest in the near future as the new carrier *Tbilisi* and her sister ships become operational. The *Tbilisi* will represent the first Soviet carrier to offer a real measure of *high-seas air protection* for Soviet fleet operations outside the range of Soviet land-based naval aviation. Earlier aviation carriers like the *Moskva* and *Kiev* had very constrained air defense capability due to the limitations imposed by their Yak-38 Forger jump jets. The *Tbilisi* represents one of the most significant changes in Soviet surface warship deployments since World War II.

Over the past decade, the Soviet Navy has deployed five new shipboard air defense missile systems. The new systems perform the traditional role of antiaircraft defense,

but also must address the contemporary threat of surface skimming antiship missiles. At the high end of the scale is the SA-N-6 Grumble, an offshoot of the land-based SA-10 strategic air defense missile system. The SA-N-6 system is quite bulky, and so its use is confined to large surface combatants like cruisers. The SA-N-6 is credited with considerable anti-cruise missile capability. The SA-N-7 Gadfly is a Soviet counterpart of the US Navy's Standard air defense missile, and is an offshoot of the Soviet Army's SA-11 Gadfly tactical air defense missile. It arms destroyers like the new Sovremenniy class, which have a primary antiship/air defense role. In contrast, antishubmarine destroyers, like the new Udaloy class, place less emphasis on air defense. As a result, they are being armed with the smaller, shorter-range SA-N-9 system, an offshoot of the Soviet Army's SA-15 tactical air defense missile. The SA-N-9 is smaller and more compact than the SA-N-7 Gadfly.

A unique warship air defense system was first spotted on the new cruiser *Kalinin* earlier in 1989. Although still lacking a NATO code name, the *Kalinin* system consists of a radar-directed, four-barrel 30-mm cannon, complemented by up to eight new short range missiles on both sides of the gun system. The *Kalinin* gun/missile system is clearly aimed at the threat posed by small, surface hugging antiship missiles. The *Kalinin* system combines the functions of both the US Navy's Mk-15 CIWS Phalanx and the new RAM anti-cruise missile system and is one of the first such combined systems in the world today. Details of the new missile, probably to be called the SA-N-10, are still lacking. Most likely the system is command guided with a possible passive radio-frequency homing seeker as well. Should the system prove successful, it



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## SOVIET NAVAL DEVELOPMENTS — CONTINUED

will become one of the more numerous forms of Soviet shipboard air defense. The fifth new Soviet air defense system, the SA-N-8, is a simple adaptation of the army's man-portable SA-14 Gremlin. It is used to arm small surface combatants, amphibious warfare ships, and support vessels. It will undoubtedly be followed by navalized derivatives of other man-portable systems like the SA-16 and SA-18.

Modernization of Soviet naval aviation over the past decade has focused mainly on the offensive antiship units. Tu-26 Backfire bombers, oriented towards the antiship role, have increased in number from about 65 in 1979 to 120 in 1989. These increases have also been paralleled by significant improvements in the large antiship missiles carried by these aircraft. One development that has gone largely unnoticed has been the addition of the Su-27 Flanker to Soviet naval aviation. Until now, Soviet shore-based naval air defense regiments were equipped with older MiG-21 or MiG-23 fighters. The Su-27 Flanker gives the Soviet Navy a fighter more comparable in performance to US Navy carrier aviation like the F-14 and F-18.

The Soviet Navy's first full-deck carrier, the *Tbilisi*, is in the last stages of fitting out at Nikolayev on the Black Sea and is expected to begin sea trials sometime in 1989. The *Tbilisi* is in the last stages of fitting out at Nikolayev on the Black Sea and is expected to begin sea trials sometime in 1989. The *Tbilisi* is intended to remain with the Black Sea Fleet, and the matter of its passage through the Bosphorus will have to be addressed due to existing naval treaties. It is expected that Turkey will eventually consent to its passage. Preparation of the *Tbilisi*'s air group may take some time, and delay the operational debut of the ship. Initial training of the air group is likely to be conducted in the Black

Sea. It seems doubtful that the *Tbilisi* is intended to remain with the Black Sea Fleet, and the matter of its passage through the Bosphorus will have to be addressed due to existing naval treaties. It is expected that Turkey will eventually consent to its passage. Preparation of the *Tbilisi*'s air group may take some time, and delay the operational debut of the ship. Initial training of the air group is likely to be conducted in the Black Sea. It seems unlikely that the *Tbilisi* will be fully operational before 1991, even if she is commissioned this year.

The Soviets have been working on a variety of aircraft for the *Tbilisi*'s air group. A new V/STOL jump jet, the Yak-41, is in development to replace the older Yak-38 Forger currently used on the Moskva- and Kiev-class small-deck carriers. However, US Navy sources have indicated that the Yak-41 program has been delayed, probably by technical problems. In contrast, in the summer of 1988, the Soviet accelerated testing of a navalized version of the Su-27 Flanker B, which will probably become the primary fighter of the *Tbilisi*. The Soviets have also examined the MiG-29 Fulcrum for this role, but have apparently settled on the Su-27. The question remains what strike aircraft the *Tbilisi* will carry. The Su-25K Frogfoot has been tested for this role, but is a light attack aircraft more comparable in performance to the A-7 than to the US Navy's A-6 Intruder. The Su-25K, at least in its current air force version, does not have an advanced radar bombing system that would give it an all-weather attack capability like the Intruder.

The Soviets have publicly stated that they view the principal role of their carriers as air defense. In recent Mideast air wars, Soviet air defense missiles have proven to be vulnerable to sophisticated electronic warfare tactics. The Soviets appreciate that missiles alone are inadequate to provide air defense security for blue-water operations. A combination of combat air patrols and surface missile defenses is needed for any

bluewater operations away from Soviet landbased naval air cover. This viewpoint has shaped the current priorities in the development of the *Tbilisi*'s air group.

Nevertheless, the eventual development of some strike capability seems likely. The Soviets will probably employ the *Tbilisi* and her sister ship as part of the so-called "blue-belt" defense forces providing air cover for other surface fleet elements. However, as the Soviet fleet gains more experience in carrier operations, the strike capability of the carrier force will be increased to permit the *Tbilisi*-class carriers to become the centerpiece of Soviet naval intervention forces. These forces currently lack credible power projection capability for many types of missions, a capability that could be eventually acquired by a patient program of air group enhancement in the carrier force.

A second carrier of the *Tbilisi* class was launched late in 1988, and will become operational in 1993 if the current pace of construction continues. There is only one yard in the Soviet Union large enough to handle this class of ship, the Chernomorskiy Yard No. 444 in Nikolayev on the Black Sea. So the launch of the second *Tbilisi*-class carrier permitted the yard to begin work on a third carrier in late 1988. The third carrier does not appear to be of the *Tbilisi* class, but about 10,000 tons larger.

What remains to be seen is whether the Soviet carrier program will weather the promised cuts in Soviet defense procurement recently announced by Gorbachev. The Soviets have stated that in 1989-90, they would reduce procurement spending by 19.5%. In the case of the carrier program, it is unclear whether this will result in the cancellation of the recently started third carrier, or merely lead to a stretch-out in the program's construction pace. The surface fleet has been a traditional victim of past Soviet defense belt-tightening. The fact that the USSR has initiated a third carrier seems to indicate that there is a high level commitment to adding this capability to the fleet, even in a time of fiscal austerity.

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# NAVAL NEWS UPDATE

## HMAS NIRIMBA TO BE RETAINED

The Naval training establishment, HMAS NIRIMBA, at Quakers Hill in Sydney's outer Western Suburbs, is to be retained.

During a visit to HMAS NIRIMBA, the Minister for Defence Science and Personnel, Mr David Simmons put an end to speculation that the training carried out at HMAS NIRIMBA might be transferred to the major Naval training base, HMAS CERBERUS at Western Port, Victoria.

Mr Simmons said that a review of Naval technical training requirements has concluded that the retention of HMAS NIRIMBA would be a more economic use of overall resources.

HMAS NIRIMBA has been a training establishment since 1956, and provides technical training for both apprentice and adult entry personnel, as well as initial training for General Duties Sailors. The existing facilities at NIRIMBA represent a considerable investment. This decision will ensure that these facilities remain in use, and will clear the way for the possible development of further facilities at the establishment.

The local Federal Member, Mr Russ Gorman, has fought hard for the retention of HMAS NIRIMBA. This decision will please not only him, but also the staff at NIRIMBA and the local community, Mr Simmons said.

Naval and civilian staff and the students at HMAS NIRIMBA make a great contribution to the local community. In addition, many Naval families have purchased homes in the area. This decision will provide a more certain future for all these affected groups.

## NEW MINESWEEPING DEVICE SUCCESSFULLY TESTED

A new DSTO-designed mine counter-measures device for the Navy was successfully shock tested in a recent trial off Townsville.

Developed by DSTO's Materials Research Laboratory, the magnetic device called an influence Minesweep, has been designed for towing behind suitable vessels to safely detonate magnetic mines intended for use against large ships.

The trial was conducted on the RAAF Weapons Range at Halifax Bay to evaluate the durability of the sweep components. The prototype influence Sweep survived the realistic and vigorous tests unscathed during a series of underwater explosions.

The Auxiliary Minesweeper BROLGA was employed as the trial support vessel in

Townsville, with the assistance of a RAN clearance diving team to lay and recover moorings at the trial site and to carry out underwater explosive work simulating sea mine detonations.

The Defence trials were conducted jointly by the DSTO Directorate of Trials with technical support from Sydney and Melbourne scientists from DSTO and Navy elements.

The successful trial represents another significant milestone in the re-establishment of a mine clearance capability for the Royal Australian Navy.

## KEEL-LAYING OF FFG 06

MELBOURNE (July 21): A 'significant departure' by Australian Marine Engineering Consolidated Ltd (AMECON) from the established method of construction of the Navy's new guided missile frigate (FFG 06) will mean considerable fabrication work in Adelaide and Newcastle shipyards.

Final assembly of the hull and superstructure will then take place at AMECON's Williamstown shipyard leading up to the launch and naming as NEWCASTLE, scheduled for July 1991, of the second FFG to be built in Australia.

"Instead of fabricating 40-odd individual modules weighing up to some 50 tonnes each, AMECON will construct some of the ship in much larger modules likely to be four times the size and hence four times the weight of the standard unit," the Assistant Chief of Naval Staff - Material RADM Barrie West, said at the keel-laying of FFG 06.

As with sister ship FFG 05, NUSHIP MELBOURNE as she was named and launched on May 5, the 'keel-laying' involved the positioning of the first module on the slipway rather than the placing of a full keel.

But, according to those who witnessed the keel-laying of MELBOURNE, the module lowered onto the dock on July 21 was much larger and an early indication of the higher level of pre-assembly which will take place before final assembly at Williamstown.

RADM West welcomed the keel-laying of FFG 06 as 'the first visible evidence of progress' towards completion of the second of the FFG7 (Oliver Hazard Perry Class) frigates ordered for the RAN.

He said AMECON's change in construction method from the previous 60 FFGs was 'an interesting departure which will bring with it some obvious benefits and perhaps some penalties'.

"However, it's a fresh new approach and given the backing of Transfield I look forward to seeing this new construction

strategy succeed to the benefit of both AMECON and (of course) the client," he told Victoria's Premier Mr John Cain, AMECON Managing Director Dr John White, Project Director CAPT Graeme McNally and hundreds of AMECON workers gathered for the occasion.

The Admiral said that the new approach should cause the 'ship shape' - the hull and superstructure construction - to come together very quickly.

"Thus it will allow more time for the installation and setting to work of the more complex equipment and systems that go into these modern fighting ships," he said. "I wish the shipbuilder every success in this new approach."

Success, however, could come only through sound practical planning and achievement at least on time of all the contractual milestones, RADM West emphasised.

"This in itself will establish for AMECON a reputation of achievement and a world wide reputation of being a successful warship builder," he said.

He congratulated the company on achievement of the keel-laying seven days ahead of the contract date.

"I look forward to that being indicative of what is to come with FFG 06," he said. "The Navy is very much looking forward to the construction of this ship proceeding on schedule and has every confidence that both of these modern, highly capable ships (FFGs 05 and 06) will be delivered on time and to a standard at least equal to the best in the world."

Before the first module of FFG 06 was lowered into place, Dr John White said AMECON was committed to establishing a marine engineering industry that would be internationally competitive and export capable - "... our only real chance", as he put it, 'of guaranteeing our long term security'.

To this end, AMECON had recently put into place two initiatives with the support of the Victorian Government and trade union movement:

- A joint Government/AMECON venture to establish a marine engineering training and research centre at Williamstown; and
- Installation of a modern computer-aided design (CAD) system to carry out advanced design and engineering work.

Apart from other benefits, Dr White said the new centre would aid the transfer of technology from overseas.

The overseas way of doing things, however, was not invariably the best way for Australia.

"Experience shows that engineering or

## NAVAL NEWS UPDATE - Continued

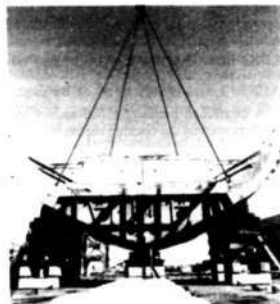
production solutions that are optimum in an overseas environment, whether that be a strategic, an operation or a production situation, are often not optimum in Australia," he said.

"We believe that full involvement of Australian industry and other Australian capabilities will provide superior solutions that will be more cost effective overall."

"We must have the confidence to change the plans of overseas designers and builders in order to make best use of our own Australian capabilities and to suit our own needs."

Dr White believed both AMECON and the Navy would experience the benefits of the new training and research centre and CAD system during the build of FFG 06.

"But the real benefits of establishing an internationally competitive marine industry will be experienced in future programs," he said.



The first unit of FFG 06, at Williamstown

## WESSEX DITCHING

The following is an account of events by leading Seaman Aircrewman Brett Knowles during the Wessex 828 ditching on the 30 October 1989.

We had launched from the ship and had been airborne for some 20 minutes prior to a refuel and crew change. We were level at 4000ft, LEUT Hill co-pilot was flying the aircraft. Suddenly he called out "I've got torque fluctuations" the aircraft descended suddenly while both pilots confirmed they had an engine failure. I leapt from my seat ensuring the cargo door was back and pinned and informed my passengers of our predicament.

LEUT Lister put out the Mayday call on STALWART's land/launch frequency. I removed my dispatcher harness and strapped in on the troop seat beside my two passengers. Passing rapidly through 3000 Ft LEUT Lister made an attempt to re-light the engine but to no avail. Loosing

height quickly there was no time to attempt another engine re-light. I new then that we had no choice but to carry out a controlled ditching. At about 500 Ft the pilot commenced to flare the aircraft. I removed the troop seat back rest and seconds later opened the emergency windows so the passengers had a clear exit.



WESSEX ditched, with tail section snapped off and hanging underneath

Now only two hundred feet to the water the aircraft began to reduce its forward speed. With only seconds to ditching the aircraft began to terminate the flare, at about 15 feet above the water, it levelled off and then fell into the sea with a tremendous bang. Inflation equipment on the aircraft kept it upright as we were immediately engulfed in sea water in the back of the aircraft. Petty Officer McLeish exited through the left side forward window, followed by SWR Jones through the left aft window. Once they were clear of the aircraft I abandoned through the same exit. I inflated my life vest and swam to the two passengers to see if they were free of injury. At the same time LEUT Lister and Hill made there way over to us. I swam to the other side of the aircraft and inflated the 5 man life raft. I was soon joined by Petty Officer McLeish and the rest of the crew.



Recovering the WESSEX

We were all struck with disbelief that we have just survived a ditching at sea. Waiting for STALWART to arrive we watched the Wessex role inverted as the tailcone inflation bag had been ruptured by the severed tail section of the aircraft.

We were soon joined by STALWART's crash boat crew and returned to the safety of the ship. I am convinced that thorough briefings and attention to safety procedures saw us to surviving a controlled ditching at sea.



HMAS STALWART lifts the ditched Wessex out of the water by its 6 ton crane.

## WORLD WAR ONE NAVAL GUN RETURNS TO NAVY

After an absence of more than 60 years a six inch gun from light cruiser HMAS MELBOURNE was returned to the Royal Australian Navy at a ceremony conducted at the RAN Fleet Base on 16 November.

The handover commenced at 9.30am in the presence of the Maritime Commander, Rear Admiral Ian MacDougall and Naval Support Commander, Rear Admiral Tony Horton.

After the acceptance of the gun by the Maritime Commander, a plaque was unveiled and the gun ceremonially fired using a small charge.

The first HMAS MELBOURNE served in the RAN from 1913 to 1928 and was armed with eight of the six inch guns.

Two of the 21 tonne weapons were subsequently mounted on Goode Island in the Torres Strait in 1941, remaining there until retrieved by the Navy in 1986.

The Fleet Base gun has been completely refurbished and is now mounted adjacent to Cowper Wharf Road, in full public view.

## FEDERAL COUNCIL MEETS IN THE WEST

The First Annual General Meeting of the Navy League to be held in Western Australia was formally opened by the newly-appointed Governor, Sir Francis Burt, in Fremantle on 16 November 1989. On the following two days the Federal Council met to review the League's present policies and future activities.

Airline problems complicated travelling arrangements for interstate members but the Divisions were well represented.

Apart from the discussion periods, Council members toured the Garden Island naval facilities and the ship lifting facility at Jervoise Bay. The Mayor of Fremantle hosted a civic reception for members of the League and events concluded with a dinner attended by nearly 100 League members and their friends.

## NAVY RESERVE COMES TO TORRES STRAIT

The northernmost unit of the Royal Australian Navy Reserve entered service at Thursday Island on November 11, 1989.

The Torres Strait Naval Reserve Unit is now part of the Cairns Port Division, which was opened in July 1988.

The Unit will share new premises with the Army Reserve 'C' Company, 51st Battalion, The Far North Queensland Regiment. The premises, known as the Australian Defence Force Reserves Training Centre, will be opened by local Member of Parliament Mr John Gayler, on behalf of the Minister for Defence, concurrently with the establishment of the Naval Reserve Unit.

The new Unit is another example of the priority given by the Government to increasing the effectiveness of Australia's Reserve Forces which have a major role to play in northern defence.

The Navy was represented by the Flag Officer, Naval Support Command, Rear Admiral Tony Horton, and the Director of Naval Reserves, Captain Tim Lewis. Representing the Army will be the Commander 11th Brigade, Brigadier George Mansford, and the Commanding Officer,



TRV TAILOR, transferred to HMAS STIRLING from Sydney, arrived in her new homeport in October, 1989

51st Battalion, The Far North Queensland Regiment, Lieutenant Colonel John Langier.

A combined parade by 100 sailors and soldiers marked the opening ceremony.

# HMAS PROTECTOR - Fast Combat Support Ship

by JOHN JEREMY

(Courtesy The Royal Institution of Naval Architects - Australian Division)

In a Naval Staff Requirement of 2 June 1964, the RAN set out its plans for a major replenishment ship capable of supplying all logistic items needed by RAN combatant fleet units at sea. Cabinet approval to proceed with the acquisition of a Fleet Replenishment Ship (AOE) was given in November 1964, however due to the needs of higher priority projects the ship was removed from the programme in October 1965.

The RAN again sought approval for the construction of a Fast Combat Support Ship in May 1969. Two ships were then planned, one for delivery by 1977, and a second ship to replace the existing Tide class fleet oiler HMAS SUPPLY after 1980, when it was expected to have reached end of life. Cabinet approval to proceed with the first ship was given on 22 July 1969.

### The Design Development of the AOE

The design of the AOE was developed in Navy Office, with contract assistance. At first, the ship was intended to be similar in size to HMAS STALWART, the Destroyer Tender designed by Navy Office and built by Cockle between 1963 and 1968. As the design developed, the ship was lengthened, principally to accommodate three replenishment stations each side, and space for two large helicopters.

### Description of the Ship

Originally intended to be to commercial standards, like HMAS STALWART, the final AOE design was largely to full Naval standards, although Lloyds Rules were to apply to ship structure and some equipment. Shock protection was to be provided for Main Engines, Diesel Alternators, electrical power distribution systems, communications, radar and armament. NBCD measures were to be provided including a gas citadel and pre-wetting (washdown) system.

The AOE was to have weight and space provision for future fitting of two 30mm gun mounts, a guided weapon system and a Chaff decoy. A Nixie torpedo decoy was to be fitted from the outset.

The ship was to supply stores, spares, food, guided missiles and ammunition, diesel oil, avcat and fresh water. Six stations for underway replenishment (CONREP) were to be provided for both liquids and solids. The replenishment system was to be a ram tensioned high line system with solid state pre-programmed control and electro-

hydraulic winches. Remote control of the cargo system was to be provided from a centralised CONREP Control centre, with local control of inhaul and outhaul winches.

Replenishment stations 1,2,3 and 4 were to be fitted with a dual hose arrangement for the supply of diesel oil and avcat. Stations 5 and 6 were to be triple hose stations for diesel oil, avcat and fresh water.

VERTREP capability was to be provided by two helicopters of Sea King size, operating from a flight deck capable of a maximum take off weight of 50,000 lbs. Movement of cargo from stowages to transfer stations was to be by fork lift truck. Four cargo lifts were to be provided to cargo spaces with a fifth lift between the main cargo handling deck (1 Deck) and the flight deck on 01 Deck.

Electrical power at 440 volts 60 Hz 3 phase was to be supplied by seven 1 megawatt alternators driven by Paxman Ventura diesels, three of which would be

directly connected to the CONREP distribution switchboard when in the CONREP mode. Six alternators were sited in the Auxiliary Machinery Room forward of the Main Machinery Room, with the seventh forward on 5 Deck as an emergency generator.

The ship was to be propelled by four Ruston and Hornsby 12 AO M diesels, two per shaft, driving controllable pitch propellers. For noise reduction, each shaft set of main engines was to be mounted on a common sub-frame, mounted in turn on a hydraulic constant position mounting system. The non-reversing gearboxes were to be solid mounted. The propellers were to be of noise reduced design and all rotating auxiliaries were to be rubber mounted.

Accommodation was to be provided for a crew of 335, fully air-conditioned and fitted out to Naval standards.

The General Particulars of the AOE are given in the Table.

FAST COMBAT SUPPORT SHIP  
GENERAL PARTICULARS

<b>Dimensions:</b>		
Length O.A.		593 ft (179.9M)
Length B.P.		534 ft (161.8M)
Beam Mid.		72 ft (21.82M)
Deep Draught		26.33 ft (7.98M)
<b>Displacement:</b>		
Full Load		19,600 tons (19,992 tonnes)
Ballast		16,300 tons (16,626 tonnes)
<b>Cargo Capacity:</b>		
Diesel Oil	7,588	tons
AVCAT	556	tons
Fresh Water	190	tons
Naval Stores	443	tons
Ammunition	468	tons
Victuals	456	tons
Total	9,701	tons (9,877 tonnes)
<b>Propulsion:</b>		
Max. Power per shaft	12,000	BHP
Maximum Speed	20.6	Knots
<b>Complement:</b>		
Captain	1	
Officers	29	
Chief Petty Officers	27	
Petty Officers	44	
Sailors	234	
Total	335	



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### HMAS PROTECTOR

— Continued

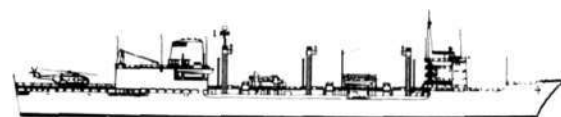
#### Contractual Aspects

The RAN submission to Cabinet which resulted in the 1969 approval for the construction of the Light Destroyers (DDL) and the Fast Combat Support Ship (AOE) had assumed that the previous procedures for the placing of shipbuilding orders would continue, with the work being shared by Codock and Wildock.

A delay in the programme for the AOE of two years was accepted in order to provide time for the completion of sufficient design work to enable Codock to submit a tender on a commercial basis. Orders for preliminary planning, drawing office and lofting work were to be placed with Codock in advance of Tender submission. Whilst other shipyards in Australia had built non-combatant and other minor vessels for the Navy, only Codock and Wildock were experienced with Naval standards, and a further delay of six to nine months was estimated for detailed specification preparation if open tenders were to be called.

Construction by Codock was approved, with delivery planned for late 1976. Orders were placed with YARD in late 1969 (for the propulsion machinery design), and with Codock in early 1970 (for the structural design). A later order enabled Codock to proceed with structural working drawings and the ordering of steel.

The work done by Navy Office and their contractors resulted in a good ship specification, well supported by design drawings, and a comprehensive Tender proposal was submitted by Codock in May 1972. A Fixed Price Incentive contract was proposed, the first such contract for the RAN since before the Second World War,



apart from a contract placed with Codock for the construction of three Crane Stores Lighters during 1972.

Contract negotiation and preparation of working drawings continued during 1972. Due to the limited availability of design staff in Australia, Codock had arranged for assistance from their then associated Company, Canadian Vickers Limited, Montreal, Canada, who had for many years operated the Naval Central Drawing Office under contract to the Canadian Navy. As the preparation of the detailed design and working drawings for the Canadian DDH 280 Destroyer programme was then drawing to a close, it had been planned to undertake a high proportion of the AOE outfit working drawings in Montreal, and to adopt the DDH 280 Weight Control procedures. Work on AOE system design and composite services drawings began in Montreal in 1972 in advance of the shipbuilding contract.

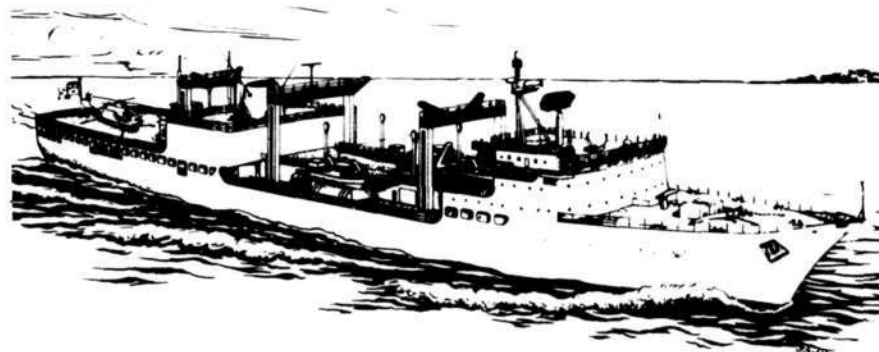
Completion of contract negotiations was delayed by technical problems with the selected main propulsion diesels. The incorporation of alternative diesels had a significant impact on the ship design, and following a change of Government in 1972, both the DDL and AOE projects were reviewed. The new Government decided that the cost of the AOE was unacceptable (then estimated to be \$62 million compared with the 1969 approved figure of \$42 million) and the project was cancelled in August 1973 along with the DDL.

This cancellation resulted in a dramatic change in attitude to Naval construction in Australia which had profound effect,

particularly on the technical resources available within Australia to support Naval design and construction. It introduced a period of reliance on overseas design in the interest of minimal technical risk, with the loss of the significant design capability developed since the Second World War.

Had the AOE not been cancelled, it is unlikely that the project would have proceeded as planned. Despite the much reduced Naval construction programme, Australian ship design capacity proved inadequate during the 1970s as shown during the construction of HMAS COOK, an Australian designed Oceanographic ship ordered from Wildock after the DDL cancellation.

COOK was also delayed by problems with the supply of Government Furnished Equipment (GFE). Whilst the Navy had been able to order GFE as Naval Board Supply items directly during the Type 12 project, changes to Commonwealth purchasing procedures required GFE to be purchased by a separate Commonwealth Department, following open tender. The procedures of the early 1970s were complex and slow. As a high proportion of the equipment for the AOE was to have been GFE, it is probable that long delays in supply would have resulted, with a very adverse effect on the shipbuilding programme and cost. Coupled with the limited availability of suitably qualified and experienced technical people, this would have made completion of the AOE, to have been named HMAS PROTECTOR, unlikely much before 1980.



HMAS PROTECTOR

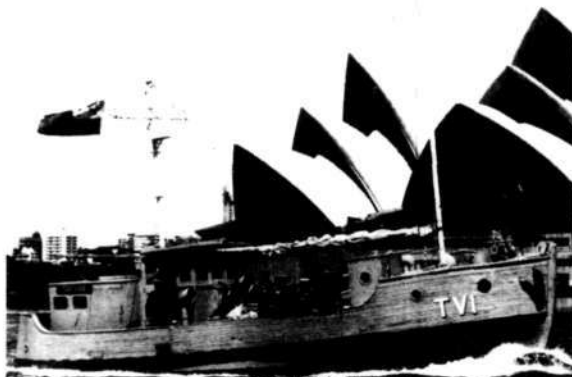
THE NAVY



# T.V. TORTOISE



TORTOISE, early 1960s



TORTOISE in October 1989

"TORTOISE" was launched in 1945 as 015-75 an RAAF 015 type supply craft for service in the Second World War. Built by Slaveners Australia Pty Ltd on the Cooks River, Sydney, she saw extensive service in the south-west pacific travelling between the islands with stores for RAAF bases.

In 1962, she was transferred to the RAN, named "TORTOISE" and converted to a Diver Tender Vessel, wearing the pendant number Y 292.

Sold in 1974 to private enterprise. She was converted again to a salvage vessel, and worked around the Philippines and up and down the east coast of Australia. At the finish of her salvage work, she was left laying at anchor in Hen and Chicken Bay near Concord, NSW. During her stay in this bay she was badly vandalised, used by marine bird life as a roosting and nesting site. With all her portholes/windows/electronics/fittings ruined her decks were inches thick in birds excreta/chicken bones/empty beer bottles/cans etc.

Purchased by her present owner Mr F.J. Hewett of Umina NSW, on the 11th March, 1988 she has since been restored and refurbished by the cadets of T.S. HAWKESBURY under the supervision of CPO (NCR) R.J. Tinnock and with the assistance provided by the personnel of HMAS WATERHEN, Waverton NSW. "TORTOISE" is presently on loan to T.S. HAWKESBURY and has been since 1st May, 1988.

She is maintained and crewed by members of the NRC unit and carries four (4) Officers/Instructors and fourteen (14) Cadets on training cruises on the Hawkesbury River, Broken Bay and Brisbane Waters.

In 1988, T.V. TORTOISE participated, with a Cadet crew, in the Bi-Centennial Naval Review on Sydney Harbour and was complemented for her appearance and that of her crew by many senior Officer of the RAN. During October 1989 she was on view in Darling Harbour during Navy Week 1989.

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## BOOK REVIEWS

### CRUISERS of the BRITISH and COMMONWEALTH NAVIES by Douglas Morris Published by Maritime Books

The ever increasing range of books being published by Britain's Maritime Press, has in recent years, witnessed an upsurge in the number of well written descriptions of the Royal Navy, its ships and personnel, both at home and abroad.

The work under review here is the first descriptive and pictorial book of the various British and Commonwealth cruisers from the year 1879 to the last of the breed, the three Tiger class of the early 1960s.

In presenting his ships, the author Douglas Morris begins with the Iris class despatch vessels, later re-rated as second class cruisers. From this point and for the next 240 pages plus, the author describes the technical and historical aspects of each cruiser, supported by general commentary in the form of introductions to the nine eras of cruiser construction.

Cruisers operated by the Royal Australian Navy are allotted both narrative and photographs. The first ships with an

Australian connection include the flagship HMS ORLANDO and the Third class protected cruisers of the 1891-1905 Australasian squadron, which carried local Australian and New Zealand names.

As the book progresses, cruisers which would later commission into the RAN, are detailed. These include ENCOUNTER, PIONEER and PSYCHE.

The first built for the purpose cruisers for the RAN were the three Chatham class, described with their RN counterparts and later, ADELAIDE, the two Counties, three Amphion class and the Second World War acquisition SHROPSHIRE.

The need for the traditional cruiser in the Royal Navy lessened greatly in the 1950s and many plans for modernisation were cancelled and the ships laid up. Only work continued on the trio of Tiger class, but in the mid to late 1960s, two of these ships had been modified as helicopter cruisers.

In September 1986, TIGER was sold for scrap leaving only the museum ship BELFAST, as a permanent reminder of over a century of British cruiser service.

Cruisers of the British and Commonwealth Navies is printed on high quality pearl paper and spans 256 pages. Notes on cruiser protection are included as is a comprehensive index.

The book is recommended to all shiplovers, but especially those whose interests lie with the Royal Navy and its cruisers of the 19th and 20th centuries.

Cruisers of the British and Commonwealth Navies is available in Australia, but can be purchased direct from the publisher, Maritime Books, Lodge Hill,

Liskeard, Cornwall, PL14, 4EL, Great Britain.

### NAVAL BOOKS IN AUSTRALIA

For ten years Maritime Books of Liskeard England have produced a wide range of naval books - and nothing else except a magazine called "Warship World".

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Details of these books appears elsewhere within this issue of the magazine - if the bookshops above haven't got them, you'll have to get your order in the post.

Maritime Books produce a quarterly catalogue of all the Naval books in print today that they are able to supply and quite happy to send a copy to our readers - write to them at Maritime Books, Lodge Hill, Liskeard PL14 4EL England. Once a customer you will receive regular copies of the catalogue.

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HMAS AUSTRALIA, a photograph from the new 'Royal Navy in Malta' from Maritime Books.

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## THE ROYAL YACHT CAROLINE 1749

by SERGIO BELLABARBA AND GIORGIO  
OSCUATI  
Published by Conway Maritime Press

The Royal Yacht CAROLINE 1749 is the latest offering in Conway's Anatomy of the

Ship series. The major difference between this book and previous volumes in the Anatomy of the Ship series is that unlike the other titles this volume was not commissioned specifically for the series but was translated from an Italian publication. This however, in no way detracts from the high quality of the work which compares more than favourably with the other volumes in the series.

Like its predecessors the object of The Royal Yacht CAROLINE 1749 is to provide detailed technical and historical information on a specific ship. This the authors have done to excess. Contained within its 120 pages is a wealth of historical and technical information. This information is supported by a large number of detailed diagrams showing every aspect of the ship and her fittings. The extent to which the authors have researched their topic is clearly illustrated by photographs of the exquisitely detailed model of the Royal Yacht CAROLINE built by Sergio Bellabarba.

The subject of the book, King George II's Royal Yacht the ROYAL CAROLINE, was selected not only because of the extensive and ornate decorations on the vessel but also because of her importance in warship design generally. The ship's lines were scaled up for some of the Royal Navy's frigates and sloops that were built in the 1750s.

For anybody interested in the development of British sailing ships or ship model making this book with its historical and technical detail is a must.

## US SMALL COMBATANTS - AN ILLUSTRATED DESIGN HISTORY

by NORMAN FRIEDMAN  
Published Naval Institute Press, 1987

US Small Combatants - An illustrated Design History is the fifth volume in Norman Friedman's design history series. The previous volumes published in this series were: US Destroyers (1982), US Aircraft Carriers (1983), US Cruisers (1985) and US Battleships (1985). As with the earlier volumes this edition traces the design and development of a group of US warships. In this case it is the development of the small combatant from First World War subchasers through the famous World War Two PT boats to the various craft of the Vietnam era Brown Water Navy.

US Small Combatants is arranged in chronological sequence with each chapter covering a major group of small combatants. The mass of information contained in each chapter is presented in a very readable style and supported by technical tables and high quality diagrams and photographs. By far the most interesting sections in the book are those dealing with the development of the myriad of specialised vessels that appeared during the Vietnam war. Supplementary information about gunboats, acquired patrol craft, crash boats, export small combatants

and weapons are contained in a number of annexes at the back of the book. The final annex provides details of construction and disposal date of US small combatants.

This book, either coupled with the earlier volumes or on its own, provides an invaluable insight into how the design of warships has responded to both technical and strategic changes and is highly recommended as an invaluable addition to any professional library.

## BEFORE THE AIRCRAFT CARRIER

- The Development of Aviation  
Vessels 1849-1922

by R.D. LAYMAN  
Published by Conway Maritime Press

The author of this book should already be known to readers of The Navy magazine through his series of articles on air capable ships, a number of years ago.

In his current work, Mr. Layman has successfully collected the details, both historically and technically, of the numerous surface craft that were adapted to aviation duties.

The period covered spans 73 years and includes both experimental and operational vessels from eleven nations' navies. Ships such as those described in "Before the Aircraft Carrier" were the actual beginnings of carrier aviation and from them grew the first traditional carriers of the Great War and after.

Photographically, the book is illustrated by a wonderful collection of rare prints, most of which show the early aircraft embarked or aircraft operations on or near the ships. For their age, the photos have reproduced well enough for the average naval historian, to gain an excellent view of this early naval aviation era.

Some of the more unusual vessels included in the book include: the Royal Navy's aircraft-equipped submarines, the photos depicting half-submerged boats with the aircraft sliding into the water; Australia's own merchant aircraft carrier, NAIRANA in commission as HMS; early Russian experiments and numerous balloon vessels.

As is usual with most recent Conway books, the designer has decided to place many photos a page away from the actual information on the ship. This nagging problem of many Conway books should be investigated.

'Before the Aircraft Carrier' is a collection of well written and well researched narrative, illustrated by 120 rare photographs. The 128 page book measures 270mm by 200mm and printed on top quality paper. For anyone with an interest in carrier aviation, it is essential reading.

I strongly recommend the book as an addition to all readers' libraries or as an adjunct to the earlier Conway's All the Worlds' Warships series of books.

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# Navy Veterans Sold

The RAN's two Ham class diving tenders which were paid off in 1988 were sold by the Department of Administrative Services on 29 November, 1989.

Together, HMAS PORPOISE and HMAS SEAL fetched \$140,000 with the former to be retained by her new owner and the latter to be converted to a cruise vessel for work in the Whitsundays. Work is expected to take about 12 months. PORPOISE is in tact but SEAL requires extensive repairs after a collision with a wharf at Garden Island in July, this year.

A spokesman for the department said that each of the diving tenders was well suited for charter work, due to their good size and wide beam plus a long range of 1500 nautical miles at 14 knots.

At the time of sale both vessels were laid up in Sydney Harbour at Pyrmont.

## NAVAL CAREERS

During 1965 it was decided to purchase three second-hand inshore minesweepers of the RN's Ham class for conversion to Diving Tenders and as replacements for the 1944-45 vintage OTTER and SEAL. Two boats, POPHAM and WINTRINGHAM, were ordered in May 1966 and a third boat, NEASHAM, in March 1967.

Of the first pair, (costing £26,000 each) WINTRINGHAM was converted by Halvorsens, renamed SEAL and entered service in December 1968. NEASHAM remained laid up at Garden Island until 1972 before being taken in hand for conversion by Storey and Keers of Balmain, Sydney. Renamed PORPOISE, she was handed over on 13 June 1973.



HMAS SEAL being lifted by the Garden Island Hammerhead crane after a refit ashore.



HMAS PORPOISE leads HMAS SEAL back to base. Not the enclosed bridge of PORPOISE.

Conversion costs for both vessels proved substantially higher than originally expected. Accordingly, POPHAM was not converted or renamed and was sold as such to Seaworld Pty. Ltd. Surfers Paradise, Queensland, on 17 February 1976.

PORPOISE and SEAL were based at HMAS WATERHEN in Sydney Harbour, with one boat active for alternate periods. Each tender retained its open bridge sited above the small deck cabin with accommodation for fourteen embarked divers provided aft. Both boats were also fitted to carry a recompression chamber.

Ninety-four Ham Class Inshore Minesweepers were originally built for the RN, of which thirty-six were transferred to other navies. During the 1970s and 1980s PORPOISE and SEAL were manned for weekend training by the RANR and employed on navigational training cruises by the fleet.

PORPOISE received an enclosed bridge in 1985. Both vessels participated in the 1986 and 1988 naval celebrations on Sydney Harbour.



An early photo of HMAS SEAL, shortly after conversion in 1968.

## ANZAC SHIP PROJECT CONTRACT SIGNING

*The multi-billion dollar ANZAC Ship Project has been officially launched.*

**A**t a ceremony in Canberra on 10 October the New Zealand Minister for Defence, Mr Tizard and the Australian Minister for Defence Mr Beazley signed the agreement under which Australia and New Zealand to build the ANZAC class frigates for the RAN and the RNZN.

This Prime Contract covers the construction of up to 12 ships, eight for Australia and two with an option of a further two for New Zealand, over the next fifteen years. The contract price is \$A3807 million (April 1988 prices).

This is the largest naval construction program ever undertaken for the RAN or the RNZN and the largest contract ever let by the Australian Government.

The agreement signed by Mr Beazley and Mr Tizard will govern all aspects of Australia/New Zealand cooperation on the ANZAC Ship Project. Under the agreement a joint project office - with personnel from each country - has been established to manage the project.

The ANZAC Frigate Project is vital both to Australia and New Zealand's strategic security and to the two nations' industrial prosperity.

It will last for more than a decade, and it will create over 7,000 jobs directly and 5,000 indirectly. In the process it will help transform the heavy engineering and high technology industries of both Australia and New Zealand.

The first Anzac frigate is expected to be delivered to the RAN in 1995-96, the second will be delivered to the RNZN in 1997. The rest of the ships will be delivered at a rate of about one each year after that.

The design of the Anzac frigate has been adapted from the German MEKO 200 frigate specifically to meet the strategic needs and industrial capabilities of Australia and New Zealand.

The new ships are designed primarily for surveillance, interdiction and protection of shipping in defence of

Australian and New Zealand territory and maritime approaches. They will have the range and seakeeping to operate throughout areas of strategic interest to the two countries.

The ships will be fitted with a gun, missiles and surveillance equipment including radars and sonar and are capable of operating the RAN's Seahawk anti-submarine helicopter. Their weapons and sensors can be enhanced should strategic circumstances require.

Australian and New Zealand industry will receive some 80 per cent of the work on the ships, including offsets. In Australia all states will benefit, especially NSW and Victoria. Each will receive about 40 per cent of the work in Australia on the project. South Australia will receive about 16 per cent and the balance will be shared among the other states.

New Zealand industry will receive work amounting to at least 80% of the New Zealand share of the contract price.

# FROM THE WEST

(Photos courtesy Navy Public Relations, W.A.)



Tongan patrol boat VOEA NEIAFU, 13 November, 1989.



USS MIDWAY entering the inner harbour, Port of Fremantle, for the first time, 10 November 1989



USS FIFE, part of the MIDWAY Group.



USS KILAUEA, in Cockburn Sound, W.A., 10th November, 1989.



HMAS Stirling based tug, QUOKKA.

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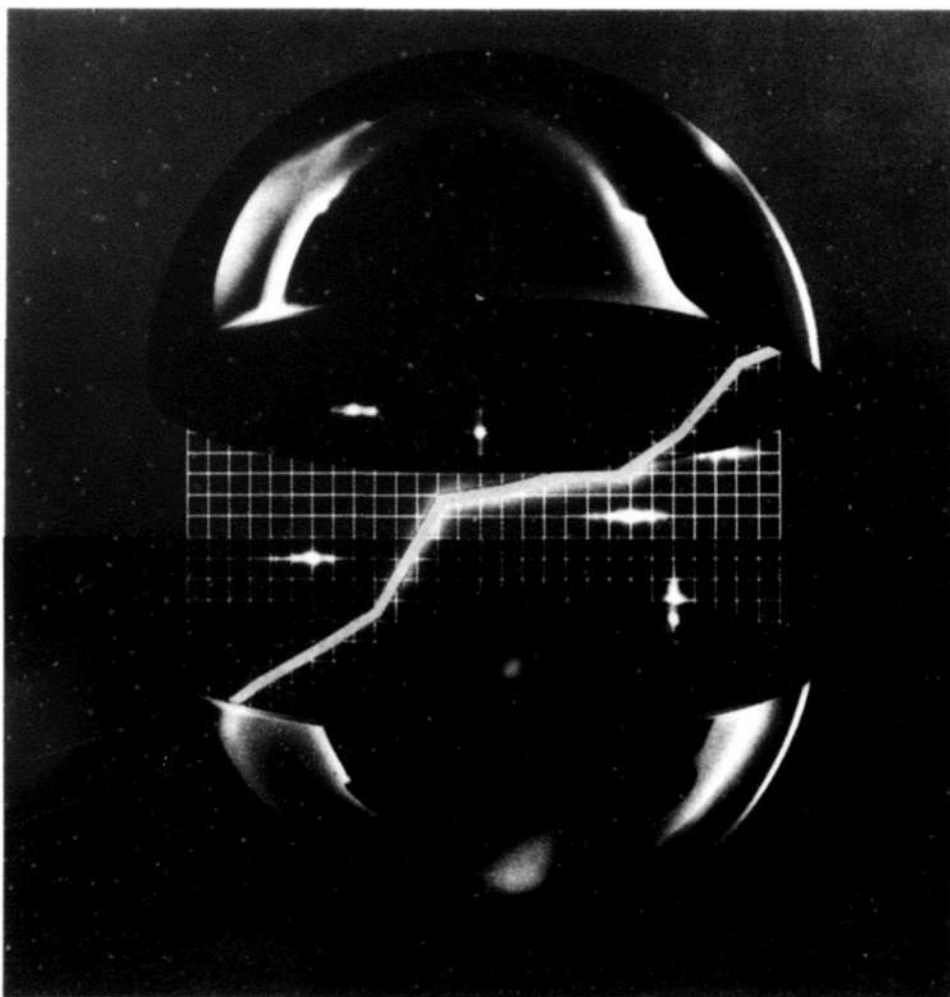
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## APPLICATION FOR MEMBERSHIP

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## OBJECTIVES

The principal objectives of The Navy League of Australia are:-

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- To promote, sponsor and encourage the interest of Australian youth in the sea and sea-services, and support practical sea-training measures.
- To co-operate with other Navy Leagues and sponsor the exchange of cadets for training purposes.

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- Through soundly-based contributions by members to journals and newspapers, and other media comment.
- By supporting the Naval Reserve Cadets, and assisting in the provision of training facilities.
- By encouraging and supporting visits by recognised world figures such as former United States Chiefs of Naval Operations and Britain's First Sea Lords.
- By publishing "The Navy", a quarterly journal reporting on local and overseas maritime happenings, past, present and projected.
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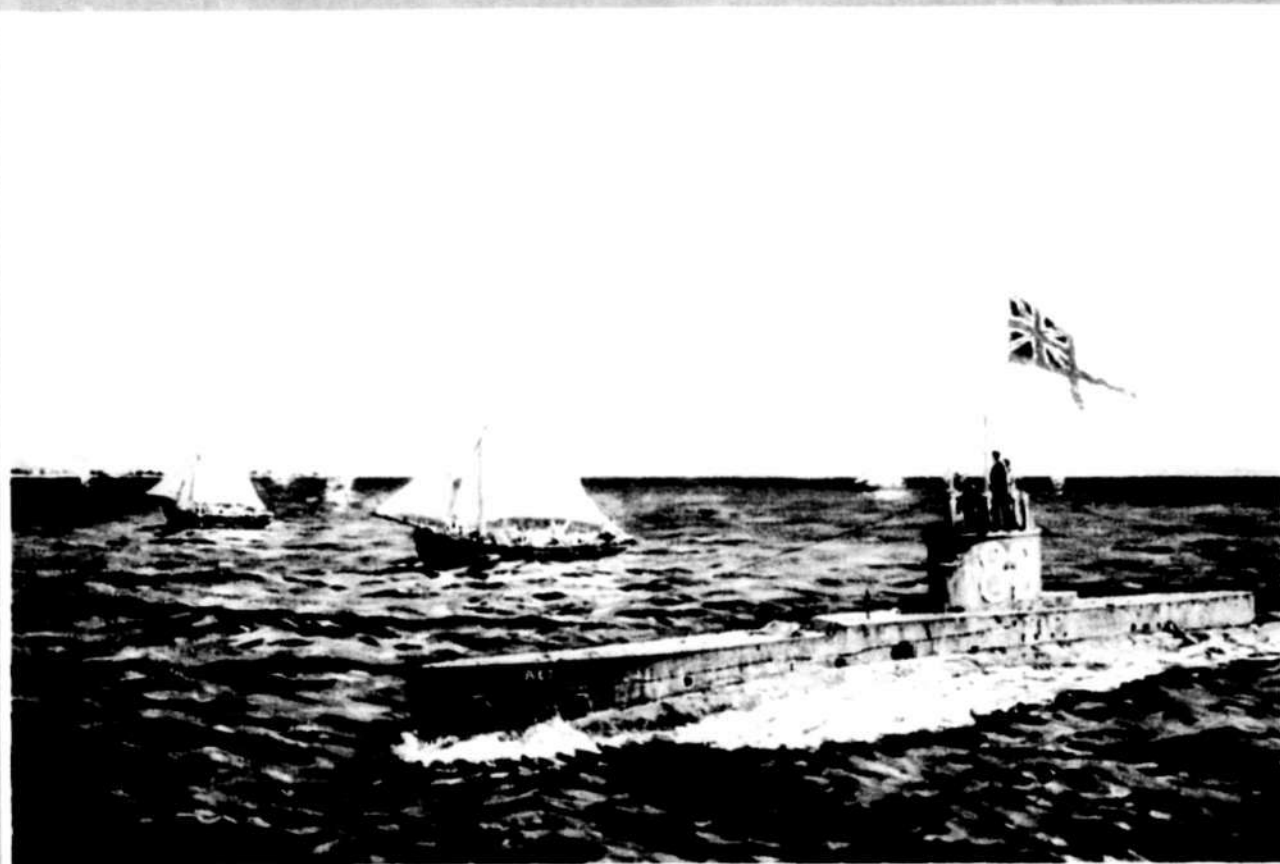
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No. 2

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### FRONT COVER

HMA Submarine AE2 in the Sea of Marmara, from a painting by Charles Bryant, Australian War Memorial. The story of the Navy at Gallipoli appears in this issue of The Navy

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## READERS

Dear Sir,  
Re ANZAC frigate 5" gun debate. The ANZAC frigates are not designed or expected to be the "best" or first tier units. Indeed New Zealand appears to be going to use the ships for EEZ patrols and "showing the flag" (Gunboat Diplomacy?) with minimal armament, therefore, I believe the 5" gun is not needed.

If the 5" gun is to be fitted the extra cost and weight used will probably lead to the downgrading of the overall weapons system. Since the ships are not first tier units could not money be saved by:-

- (1) Fitting a 3" gun (which would allow fleet standardisation and a better anti-aircraft/missile capability).
- (2) Omitting Harpoon SSM's (perhaps fitting for but not with).
- (3) Having only basic helicopter facilities. This would allow the fitting of a CIWS and PDMS which would be more than adequate for peacetime duties. The ships would still have a wartime role as escorts or goalkeepers to the FFG's (which would provide Harpoon SSM's)

If a heavier gun is necessary in the fleet, the DDG's and River class escorts will still be available for the foreseeable future. Since the DDG replacement is to be a more capable first tier unit a 5" gun could be included in those ships. (They should still have room for a complete armament since they will be larger than the ANZAC's). The only role I can see a 5" gun being used is for shore bombardment. Since neither Australia or New Zealand have adequate amphibious forces this does seem to be a waste. Fitting the ANZAC's with a 5" gun seems to be another example of the forces concentrating on one part of a weapons platform, to the detriment of the system and the forces as a whole.

Examples include our FFG's equipped with "iron" bombs until recently and Leopard MBT's with inadequate transports, no mobile air defence and little perceived role. Perhaps if enough money could be saved we could afford some of the things we really need, such as the retention of the *Stalwart* and a Helicopter Platform.

Yours faithfully  
MARK MEREDITH,  
Berkeley Vale, 2250

Dear Sir,  
I am writing to you in relation to your quest in relation to the identifying of the NAP vessel just off the port bow of the USS *Saratoga* alongside Ocean Pier and her escort Fletcher class destroyer on the other side. I am almost certain it is the *Arcadia* which was commandeered at the outbreak of the 2nd W.W. I think from the Webster Rometch coachlines of Hobart.

Even though I was not in the harbour at the time, I was as member of the crew serving in HMAS Coombar an auxiliary minesweeper along with HMAS *Goonambee* which made up our flotilla which helped keep the sea channels open to entrance of Hobart out in Storm Bay and beyond into the Southern Ocean and the Tasman Sea.

These channels had to be swept periodically because earlier in the war the German raiders *Penguin* and *Atlantis* had sown a minefield south of Hobart in fact we were led to believe one was so deep we use to sweep over it and it was not cleared until after the war by a flotilla of corvettes.



HMAS Sydney departs for Gallipoli



HMAS Tobruk and HMAS Sydney are farewelled on 5 March, 1990 bound for Anzac Cove

## VIEWPOINT - READERS (CONTINUED)

Hoping this will clear up the identity of the N.A.P. vessel in question in your magazine.

Yours faithfully,  
SPARROW HAWKES

Dear Sir,  
As a member of a few years standing, and an ardent follower of all things nautical, I am writing to you for a little assistance.

I have been a member of the 'ALGERINES ASSOCIATION' now for a number of years. This is an association of ex-ships companies of those fine minesweepers who served so well during World War 2, and shortly after, based of course (Being R.N.) in the UK

My roll now (purely voluntary) is of 'Australian Representative', and am very keen to recruit new members of which I am sure there must be many 'down under' in Australia.

Perhaps you could mention this fact in your next edition or possibly give me a few addresses of potential members, so that I may communicate and create a little interest.

Many thanks to you in anticipation.

Yours sincerely,  
DENIS LOWREY,  
Keysborough 3173

Dear Sir,  
In the October-December 1989 issue of "The Navy", A. W. Grazebrook's report of AMECON's success on winning the ANZAC Frigate contract made very good reading.

In the 4th and 3rd last paragraph's there was mention that DDGs - HMAS *Perth* *Hobart* and *Brisbane*, could be replaced by "stretched" and a "up-gunned" version of the Meko 360 Frigate (Argentina operates four of this type).

Perhaps another solution to the D.D.G. replacement problem can be found in the past: - A revived and modified version of the early 1970's proposal - the DDL.

In "Australian and New Zealand warships since 1946", there is almost a full page dedicated to the class.

The picture of the model shows a MK13 launcher APT, forward of a double Helo hangar. A MK 45 5inch forward of the bridge, with 6 ASW TT (2 x 3) beside the large funnel.

Perhaps a modified design could feature:

- A vertical launch system for standard SAM's and Harpoon SSM's forward of the bridge.
- A MK 45 5inch gun forward of the VLS (as like in CG 47 Baseline 2).
- 2 x Phalanx 200 mm CIWS on port and starboard sides of the ship. (In picture of model, there appears to be triangular shape empty of any fixture - they are just forward of the solid mast.
- 2 x Helo's with dipping sonar (eg), modified seahawks).
- 6 x box launched Ikara could be another possibility.

Perhaps two such ships could be built with names such as HMAS *Australia*. The ships could be fitted out as flagships.

The RAN has always had destroyers in commission since it's formation in 1911 - let's keep the tradition alive!

Yours sincerely,  
LINDSAY BAKER  
Claymore 2559

Dear Sir,  
I have been following with interest letters in "The Navy" re Saint Class tugs.  
It would be interesting to know where all these Saint names originated (all some 46 of them).

I know that St Giles was the patron saint of cripples but there my knowledge stops.

On another matter I have long wondered where the expression "In the Andrew" referring to being in the Royal Navy originated.

I recently found out and it may be of interest to your readers,  
The expression "The Andrew" meaning "The Royal Navy" derives from the time of the French Revolution and Napoleonic Wars when one Andrew Miller acquired such a reputation in the Portsmouth area as a press-gang operator that it came to be said that his victims had been snatched into "the Andrew" (Brewer's Dictionary of Phrase and Fable).

Yours faithfully,  
DOUGLAS J. TAYLOR,  
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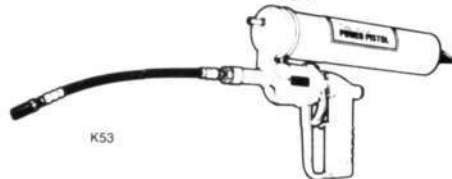
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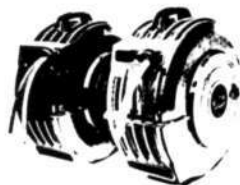
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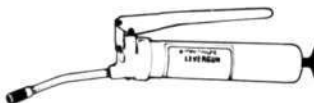


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**viewpoint**

## MORE PRESSURE ON THE DEFENCE DEPARTMENT

A writer in a Sydney newspaper recently stated that a survey by Australian National University researchers indicated that defence spending was a declining priority for most Australians. The writer was querying the need to increase the number of submarines currently on order for the RAN from six to eight, a decision which will have to be made by 30 June this year.

The author of the article also queried the relevance of other moderately sophisticated defence equipment, such as the Anzac frigates, to the low-level engagements envisaged for Australia's armed forces. "flushing the Bougainville rebels out of their hideaways" was not a task for submarines and frigates, he commented, as if this was the only or most serious type of "threat", likely to trouble Australia in the future.

Unfortunately the kind of thinking expressed in the article is likely to gain currency as time passes without a glaringly obvious threat to Australia's extensive geographical and economic interests; it seems not to matter that, despite a welcome reduction in tension between the two nuclear superpowers, many of the "lesser" powers show no sign at all of reducing their armed forces - indeed in our area they are tending to grow and no-one can be sure they will not be used for some purpose or another. It would be very helpful of course if we did know, but we don't.

The present Australian Government - or at least it's more thoughtful members - is well aware that despite the unexpected turn of events in Europe, the consequences of which are as yet unknown, that Utopia is not yet in sight and that a credible defence force is part and parcel of our national structure. Spending money on defence however seldom meets with popular acclaim in peacetime and it is an area in which governments must provide leadership, never using perceived public attitudes as an excuse for neglecting responsibility.

There have been some rather wild claims in recent times that Australia is seeking to become a military "power" in our region because a higher than usual proportion of the defence vote is being spent on new equipment. People forget that for many years new equipment expenditure was very low and a cause of much concern in the armed forces: money was being spent - wasted - in an effort to keep equipment rapidly becoming obsolete in service, with no replacement in sight. We are now in a "catch-up" phase and the Hawke Government deserves credit for this despite it's initial mistake of disposing of the fixed-wing element of the fleet air arm without thinking through the consequences. Before critics hold forth on Australia as a military power they should have a look at the growing inventories of other Indian/Pacific Ocean nations, including Japan, Taiwan, China and India, not to mention the substantial forces in existence in a number of other regional countries.

Regrettably, the media by-and-large does not help government to mould, or even guide, public thinking about national security; Government and Opposition are seen to be more or less in accord and it is not a political issue, therefore not newsworthy. It is fair to say that if one or other of the services failed in a task

allocated to it because it lacked the resources to deal with the situation, lack of publicity would cease to be a problem.

As Australia heads for the 21st century, one has some sympathy for those given the task of maintaining a credible defence force in the face of public apathy and wishful thinking.

GEOFFREY EVANS, *Federal President*



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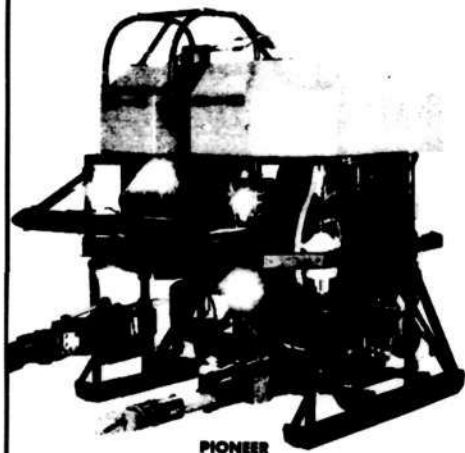
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PIONEER

# FIRST IN, LAST OUT! THE RAN AT GALLIPOLI

by T. R. FRAME and G. J. SWINDEN

*Tom Frame and Greg Swinden are the authors of a soon to be released account of the RAN's involvement in the Gallipoli campaign.*

**First In, Last Out!** is the story of HMA Submarine AE 2 and the RAN Bridging Train at Gallipoli. It is to be formally launched on 24 April in Sydney by His Excellency Rear Admiral Sir David Martin, the Governor of NSW and in Gallipoli by the Minister for Defence.

The 75th Anniversary of the first troop landings on the Gallipoli Peninsula is an important time for the RAN. Ever since news of the failed campaign reached Australia in 1916 and the extent of the tragedy fully known, the trigger and the name Anzac, have become synonymous with the Australian military tradition and have relegated the RAN to the fringes of public interest and the footnotes of Australia's national history.

It is remarkable that Australia, as a remote but prosperous island continent, should build its national identity on the defeat of a military force in a distant land campaign. The myths of Gallipoli deserve to be challenged not only on their relevancy but also on their truth. In 1990 the RAN has a wonderful chance to recast the popular perception of one of the principal events in our national development. The deployment of HMA Ships SYDNEY, TOBRUK and OXLEY to support the Pilgrimage of Australian Gallipoli veterans to Turkey is an opportunity for the RAN to broaden the public's understanding of the 1915 campaign, focus attention on the success of its participation in the midst of devastating failure, and highlight the role of ships and the place of naval power in history and in contemporary defence planning.

The involvement of the RAN in the Dardanelles Campaign was not large but it was nonetheless significant in determining the final outcome of the operation. By a strange turn of history, the RAN was the first in when the submarine AE 2 penetrated the Dardanelles in the early hours of 25 April 1915, before the troops had gone ashore. Eight months later when the Peninsula was being evacuated, a detachment of men from the RAN Bridging Train after assisting with the final embarkation of troops were the last out. However, the story of AE 2 and the RAN Bridging Train is not widely known.

### FIRST IN!

The AE 2 and her sister ship the AE 1 were built by Vickers Maxims in Barrow-in-Furness and commissioned into the RAN in early 1914. AE 2 was under the command of Lieutenant Henry Hugh Gordon Dacre Stoker RN, an Irishman, and had a complement of 33 officers and men.

On 10 February 1914 the two Australian submarines began their passage to Australia some 12,000 miles away creating a world record for the longest submarine passage to that time. When the weather permitted they would be towed, but most of the journey was to be made under their own power. It was not an altogether smooth trip. While transiting through the Mediterranean AE 2 suffered the fracture of several propeller blades as a result of poor manufacture and was almost rammed by AE 1 which had a steering gear failure.

Following visits to Malta, Colombo, Singapore, Darwin and Cairns the two submarines arrived off Sydney Heads in the early hours of 24 May 1914. The successful passage of the two Australian submarines was hailed as a magnificent feat of seamanship and engineering. The submarine rose in esteem and became an advocate for its own cause. Australia now had a complete fleet unit and boasted the two most powerful submarines outside of Europe. By mid-1914 the clouds of war were gathering



HMA SUBMARINE, AE 2.



and it was not to be long before the RAN was to be tested in the hardest of training grounds - war at sea.

The extent of the conflict in the Balkans was evident in August when Austria-Hungary declared war on Serbia and Germany declared war on Russia. Within a few days Britain and thus Australia, as part of the British Empire, were also at war. Australia had pledged to "Stand beside the mother country to help and defend her to our last man and our last shilling."

AE 2 was in refit at Melbourne when war was declared, but was quickly made ready and sent north to take part in the capture of German New Guinea. Rabaul, the administrative centre of German New Guinea was attacked and seized on 11 September. During this brief skirmish six Australians were killed (Able Seaman W. G. V. Williams becoming the first Australian to die in combat during World War I). Three days later AE 1 was mysteriously lost without race off New Britain. The wreck of the AE 1 has never been located nor has a reason for her loss been established.

The AE 2 returned to Australia in late 1914. The RAN had cleared the Germans out of the Pacific and dealt with the only direct threat to Australia. In the absence of targets, Stoker and the men of AE 2 were now without a purpose. On Stoker's recommendation the AE 2 was offered to the Admiralty for service in Home waters, an offer that was gratefully accepted. The First Sea Lord, Admiral Sir John "Jacky" Fisher, commented to Winston Churchill the then First Lord of the Admiralty that AE 2 was the most advanced boat the British then had and would be most useful for the Baltic campaign. In December she left Australia as part of the second convoy to the Middle East, destined never to return.

When the AE 2 arrived in Port Said, she was diverted to the Eastern Mediterranean and put to work patrolling the entrance to the Dardanelles. The challenge of penetrating the Narrows in the Dardanelles was so imposing that Stoker lost no time in suggesting that the AE 2 should be used.

After much deliberation by Vice-Admiral de Robeck (th Commander-in Chief of the Eastern Mediterranean Fleet), and several failed attempts by other submarines to penetrate the

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AE 2 in the Mediterranean Sea.

With the AE 2 gone it appeared that the RAN's role at Gallipoli had come to an end. But it was to be a short absence. By August the RAN was back again in a role that was just as unlikely and just as unexpected.

### LAST OUT

The story of the Royal Australian Naval Bridging Train (RANBT) begins in Melbourne in late February 1915. The Navy had a large number of Naval Reservists who could not be effectively employed. An offer to the British Government of a 300 man horse drawn Naval engineering unit was made and



Turkish torpedo boat SULTAN HISSAR, 30 April, 1915

gratefully accepted. Thus the RANBT was born. It was commanded by Lieutenant Commander (later Rear Admiral) Leighton Seymour Bracegirdle, who like many of the men were to serve in this unit, had only recently returned from New Guinea where they had taken part in the seizure of the German territories there in September 1914.

The Train was encamped at the Domain (now the site of the Victorian War Memorial) and began its training in horsemanship and bridge construction, no easy task as few of the men could ride and no-one really knew what a Bridging Train actually did.

Men enlisted in the RANBT were given the rank of Able Seaman Driver and wore Light Horse uniforms with anchor badges

to denote they were a Naval unit. On 3 June 1915 the Bridging Train embarked in the troopship Port MacQuarie bound for England and further training, before being sent to the Western Front to act as an engineering unit for the British forces. However the best plans often come unstuck when confronted by reality. As the troopship crossed the Indian Ocean the temperature began to rise steadily. On board the ship the horses were stabled below decks and soon began to suffer from heat exhaustion, within three weeks nearly a quarter of the units 400 horses had died.

The Port MacQuarie was ordered to Bombay and the surviving horses were off loaded and the RANBT became a dismounted unit. Passage to Britain was recommenced, but on arrival in Port Said, Egypt, the Bridging Train found its orders had been changed. It was no longer going to Britain but was being diverted to assist at the British landings at Suvla Bay (a few miles north of ANZAC Cove). Its job there was to construct and maintain piers over which troops would land and wounded would be evacuated. This was a task they were untrained for, but they undertook it willingly and were to prove later what they lacked in knowledge they made up for in sheer common sense and a refusal to admit to failure.

On 7 August 1915 the RANBT landed at Suvla Bay, and within a few hours had begun their work of pier construction. On the 8th they constructed a 120 yard pier for the evacuation of wounded in twenty minutes, and it was in use five minutes later. All this was done under intense Turkish shell fire. As each day passed the Bridging Train was given more and more work to do. It took over control of the water supply, was responsible for unloading stores from lighters, the storage and control of engineering stores, the salvaging of grounded vessels, and even set up a blacksmiths forge and carpenters shop. Within a few weeks the reputation of the Train had grown immensely. It was described by one British General as a highly organised and efficient unit. Another described their workshops as able to produce anything from a needle to an anchor. The Bridging Trains base was

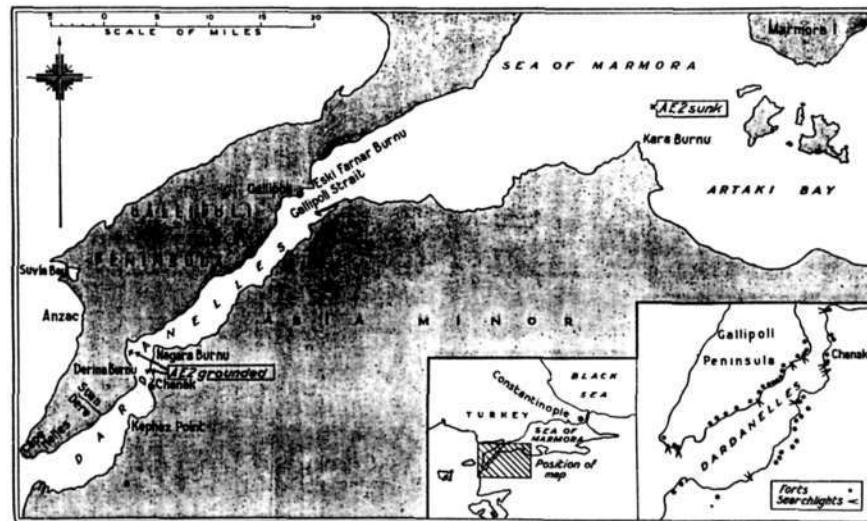
set up at a small cove in the northern sector of Suvla Bay and became known as Kangaroo Beach.

The fighting at Suvla Bay soon bogged down into the trench warfare that had persisted at ANZAC Cove and Cape Helles since May 1915. The Bridging trains work was away from the front line but it still received a great deal of Turkish shell fire, casualties were light with only four killed and some 60 men wounded for the five months they spent on the Peninsula. Many more men suffered from illnesses such as jaundice, malaria, paratyphoid and blood poisoning from infected cuts and scratches. Towards the end of November, the weather took a turn for the worst and it was not long before snow began to fall, the first experience of it for many Australians. The novelty soon wore off as men began to suffer from frostbite and the snow turned to driving rain. Trenches were flooded, men and animals washed away and the temperature continued to fall. The men from the Bridging Train were sent out to rescue any men they could find suffering from frostbite, hundreds were saved but many died on the backs of RANBT men on their way to the beaches.

In December the Bridging Train began to prepare for the evacuation of the Peninsula. Men were evacuated and not replaced, unnecessary stores were destroyed. Piers for evacuating troops were built, one such pier was built at a beach near the small mountain Lala Baba, by Sub Lieutenant Hicks and a fifty man detachment. They were also to act as a bodyguard for the British General and his staff. These last few days at Gallipoli were very tense days indeed. As each day passed more and more men left the Peninsula and soon only a few hundred men held the front line. If the Turks had known they could have easily attacked and slaughtered those on the beaches.

Hicks and his men spent the last few hours repairing the pier which had been damaged by Turkish shell fire. At 4.30 am on 20 December 1915, Sub Lieutenant Charles Hicks and his fifty man detachment stood waiting in the dark on a beach below the heights of Lala Baba at Suvla Bay, Gallipoli.

A few minutes later, General Maude commanding the British



MOVEMENTS OF THE AE 2 IN THE DARDANELLES AND SEA OF MARMORA



Some members of the First Australian Naval Bridging Train.

forces in the southern sector of Suvla Bay, and his staff appeared. After a few brief words they all filed over the pier that the Bridging Train detachment had built, into a waiting lighter and were shisked away to a waiting transport vessel.

As the lighter pulled away from the pier a glow of flame could be seen to the north as the petrol soaked stores at Suvla Cove were ignited. Thus ended the Royal Australian Navy's role in the Gallipoli campaign.

The Bridging Train was sent to the Greek Island of Lemnos where they spent Christmas. Lieutenant Commander Bracegirdle was sent to hospital and Lieutenant Bond DSO assumed command of the unit. In early January 1916 the unit mutinied as they had not been paid in two months. This problem was eventually solved, but Bond's failure to effectively deal with it caused him to be removed from the unit. For the remainder of 1916 the Bridging Train controlled the swing bridges over the Suez Canal. These bridges were designed to swing to allow ships to pass along the canal and then be reformed to allow road traffic to pass over the canal.

This was far from interesting work and many of the men became bored and requested to be transferred to fighting units of the Australian Imperial Force (AIF), over 100 men succeeded in doing this. In December 1916, the Train was asked to provide fifty men to take part in an amphibious assault on the Turkish held town of El Arish on the northern coast of the Sinai.

The waters and beach at El Arish were heavily mined and the Turks were entrenched on the beach. On 22 December the



17th Reinforcements at Seymour Camp.

detachment waded ashore at El Arish to find the Turks gone, but the beach was still mined. Fortunately they suffered no casualties. Here they began to construct a pier over which supplies for the Australian Light Horse advancing into Palestine, could be landed. Whilst at El Arish they were subject to Turkish artillery fire and machine gun fire from German aircraft. This detachment remained at El Arish until late March 1917 when it was returned to the Suez Canal area and the whole unit disbanded.

The last activity of note for the RANBT occurred on 25 March 1917 when the El Arish detachment was sent to assist in what became the first Battle of Gaza. Embarked in two ships they were responsible for unloading stores into small boats which they then rowed ashore to resupply the attacking forces at Gaza. Whilst they were doing this a British aircraft ditched in the water near one of the vessels. The Bridging Train men quickly swung into action, rescued the pilot and salvaged the aircraft. Following their disbandment, some 190 members of the unit, returned to Australia for discharge, the remainder enlisting in the AIF and seeing service in Palestine and on the Western Front.

#### THE LEGENDS OF GALLIPOLI

For most Australians the word ANZAC conjures up images of



Officer prisoners of war at Afion Kara Hissar, September, 1915.

the dramatic landing on 25 April and the vicious battles at Lone Pine and the Nek. Few knew that the RAN was also involved.

The RAN's contribution at Gallipoli was not large; less than four hundred men involved while their casualties were very light when compared to those of the ANZAC forces. Yet these should never be factors to determine their worth in the campaign.

If the AE 2 had failed in her attempt to penetrate the Dardanelles then the ANZAC's may have been evacuated on 26 April and the Legend of ANZAC would have been stillborn. At Suvla Cove the stalwart work of the Bridging Train was often the only bright spot in what was to become a pitiful episode of the Gallipoli campaign. The RAN's activities at Gallipoli were successful and that is perhaps why they are virtually unknown as Australian's are nurtured on the myth that the whole campaign was an unwarranted failure.

It is 75 years since that fateful day in April 1915 when the ANZAC's first stepped ashore at Gallipoli and the AE 2 penetrated the Dardanelles. The actions are now legendary and the men involved are immortal. The role of the RAN at Gallipoli has been severely underestimated, even the Official Historian of the RAN in the Great War, Arthur Jose, describes it as seeming to have "its share of Gallipoli honour". The actions of the men of the AE 2 and the RANBT are in the finest traditions of the service, bravery under fire and a determination to succeed in the face of adversity.

Wider perceptions prompted by this anniversary will redefine and give fresh meaning to the sacred legends and from the enlightened writings of history greater understanding will undoubtedly come.

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# WESTRALIA COMES HOME

from VIC JEFFREY  
Navy PRO (WA)

*The Royal Australian Navy's west coast operational capabilities received a tremendous boost with the arrival of HMAS WESTRALIA at HMAS STIRLING on its delivery voyage from the UK on December 20.*

The latest addition to the Australian Fleet, WESTRALIA proudly carries the former RAN oiler HMAS SUPPLY's hull number, 0195.

WESTRALIA was met at sea the previous day by the WA-based DE HMAS DERWENT which had the distinction of being the first RAN unit to carry out a RAS with the Navy's second replenishment ship.

The meeting also saw CNS, VADM Michael Hudson transfer across to HMAS WESTRALIA to welcome and join the new

arrival whilst the Minister for Defence, Mr Kim Beazley joined in Gage Roads off Fremantle the following morning for the run down to STIRLING. HMAS WESTRALIA was met by a large crowd of VIPs, families and friends whilst music for the joyous occasion was provided by a large segment of the RANR Band of the Fremantle Port Division.

Crew members were quickly down the brow to be united with loved ones after months away in the colder English climates.

In a welcoming ceremony conducted on the wharf, Minister for Defence Mr Beazley, CNS VADM Hudson and NOCWA, CDRE Graham Stubington addressed the gathering. Mr Beazley described how WESTRALIA's acquisition advanced the phasing-in of the two ocean navy policy.

"This ship has the capacity to ensure that military and political objectives of the two-ocean policy will be carried out," he said.

"In peacetime it will provide fuel services for RAN vessels and in wartime it



Arriving at HMAS Stirling.

## WESTRALIA COMES HOME *Continued*

has the capacity to deploy effectively from the WA coast.

"WESTRALIA can carry more than 20,000 tonnes of fuel, allowing it to support a fleet of ships in naval exercises.

"It multiplies the effectiveness of our destroyers over here by a very considerable amount," Mr Beazley said.

"Without it, you become terribly dependent on northern ports and in a wartime situation that would be most unwise.

"I think the two-ocean Navy is a reality now.

"We are a maritime nation and we depend on our Navy for protection and freedom of our sealanes."

VADM Hudson congratulated CMDR John Moore and his crew for the enormous amount of work carried out on WESTRALIA over the past four months.

"There is still much work to do and if it is done with the degree of professionalism that has so far been displayed, each sailor will have completed his job exceptionally well," he said.

CDRE Stubington said the arrival of HMAS WESTRALIA was a memorable and significant occasion in the history of the RAN.



First RAN RAS.

"This ship, which is the RAN's largest vessel, will better enable the Navy to carry out its patriotic mission," he said.

"The first WESTRALIA did 121,000 nautical miles and was claimed to have been sunk by the Japanese three times and narrowly missed by a Japanese kamikaze aircraft on one occasion.

"The new WESTRALIA will undoubtedly be as faithful and bold as its predecessor." Foreshadowed in the 1987 Defence White Paper, WESTRALIA is being leased from its owners for \$200,000 a month with an option to buy the ship for \$9m in 1992.



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ABPH Heywood RAN

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# AIR HAWK

## New RAAF Crash Boat Enters Service

In October, 1989 the RAAF, Victoria accepted the new search and rescue vessel AIR HAWK. The new craft is now on call for any sea emergency – even though it has been designed for air crews forced to ditch in Port Phillip bay.

The builder of the 11-metre craft, Alan Steber, said Air Hawk would be one of the best rescue boats in Australia.

"It took eight months to build in New South Wales and is made from specially reinforced materials that will withstand a lot of pressure," Mr Steber said.

"Air Hawk replaces the eight metre Shark Cat that sank in the bay about two years ago."



The craft cost about \$360,000 and is powered by twin 375 hp diesel engines.

"It will be based at Point Cook and carries a crew of five".

AIR HAWK has a range of 350 nautical miles and a top speed of 30 knots.

She was launched by Aileen Reed, wife of the state's highest-ranking RAAF officer, Air Vice Marshal Alan Reed.



The internal layout is similar to Stebers' private market 36ft cruiser with all the comforts of home. The main saloon has been altered to take stretchers and sophisticated electronic equipment needed for specialised patrol work.

The radio equipment consists of a Codan HF marine band transceiver and GME 27 MHz and VHF, as well as JMC VHF/UHF



radio direction finder. A mixer allows all signals to be piped to a JRC loud hailer system.

The cabin is fitted with air conditioner and heater. Cooking is by gas stove and oven, with a 12-volt microwave as well. Seating for the crew consisting of skipper, navigator and radio operator is in three Bostrom adjustable swivel seats. The electrical system is 12/24 volt DC with shore-side 240V input connected to an automatic battery charger.

Power is supplied by two 375hp Caterpillars turbo-charged with after cooling.

## RESTORING A NAVY THE BUILD-UP OF THE U.S. NAVY: 1981-1987

For over six years, from early 1981 to April 1987, John F. Lehman Jr. was Secretary of the Navy in the Reagan Administration.

Lehman held immediate political responsibility for implementing the Reagan policy of re-building the United States Navy and Marine Corps following the years of decline during the 1970s. This followed the Vietnam war, when available funds were diverted from new equipment to funding the wars.

Former Secretary Lehman has written a book ("Command of the Seas - Building the 600 Ship Navy") (1) describing his period as Secretary. The book makes very interesting reading for all with a serious interest in naval and defence matters.

Some parts of the book have little relevance to Australian defence. Other parts suffer an affliction common to most personal memoirs - they are imbalanced in favour of the author. Nevertheless, there is much to be learned that is relevant to Australian defence and the RAN.

### Amongst these are:

- The most important pre-requisite for successful defence is to get your basic strategy right.
- A strong Navy (or Defence Force) may appear to cost a lot. It may well be a lot cheaper than the alternative.
- The dangers of block obsolescence in naval equipment.
- The arguments for and against bigger more capable more expensive ships, submarines and aircraft.
- The advantages of maintaining a strong competitive position amongst suppliers of defence equipment and services.

During the campaign for his first term as President of the United States, Ronald Reagan undertook to re-build the United States Navy after it had declined from 950 ships in 1969 to 479 ships in 1979. At the same time, the Soviet Navy has been built up to become (in Reagan's words) "a powerful blue ocean navy that cannot be justified by any legitimate defence need... a navy built for offensive action, to cut free world supply lines and render impossible the support by sea world allies."

In contrast, the "United States is a naval power by necessity, critically dependent on the transoceanic import of vital strategic materials... For us maritime superiority is a necessity." (2)

The lesson from this for Australia is quite clear. Even more so than the United States, Australia depends upon ships and the sea for economic survival. We cannot say, as has been argued by some, "the merchant ships are too expensive to defend so we won't." We MUST have the maritime forces, aircraft, ships and submarines to defend our sea lanes, both coastal and overseas.

For the US Navy had declined across the spectrum of naval capability.

Not only were there fewer ships, submarines and aircraft. Moral was very low. Pay was so low that ships and establishments organised buses to take naval wives to the food stamps office for social security benefits. Readiness was at exceptionally low levels. Reserves of spare parts and ammunition were at dangerously low levels.

Perhaps worst of all was an attitude of internal administrative defeatism in the US Navy. Lehman describes how in 1978 a close associate of President Carter told a gathering of 300 naval officers from Admiral down that the USN was "without a mission, with no coherent ideas" (3) and how the gathering accepted this without argument.

Again, here is a lesson for us today. In 1978, the US Navy had apparently virtually given up pushing its case in the political and public arena. Today, with many misguided Australian politicians

and prominent members of the community wrongly assuming that detente in Europe means detente in our region, there is a danger that our defence community will give up putting the true case - that detente in Europe is almost irrelevant to our region, and that arms spending is growing, not declining, in the Indian and Western Pacific Oceans. These regions, not Europe, matter to Australia.

Into this environment came Lehman, the first Secretary of the Navy for decades to have a specific programme of his own, with objectives he was determined to achieve. Not everything he did was sound. He made mistakes. However, his broad thrust of action was correct.

Although the US Navy had been fortunate in their Chiefs of Naval Operations, they were less so in their political heads. Lehman, with his background as an F/A18 pilot in the US Naval Reserve and the Washington defence political community, started right where he should have done. Lehman set about rebuilding the naval strategy - the role of the US Navy and Marine Corps in defence of their nation's interests. The US Navy and Marine Corps were to feel the full benefit of a competent Minister, who knew what was needed and how to set about getting it.

### STRATEGY

*Have we in Australia got our strategy right?*

There are those who argue that we have placed too much

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emphasis on defence against armed invasion when we could be seriously harmed or even defeated without invasion. It can be argued that we have not recognised the growing naval buildup and power projection capability of India, that we have looked too much to our north, and that we have failed to recognise the importance of the Indian Ocean and South Pacific.

More recently, the more perceptive political leaders of both persuasions have come to realise publicly that it is our region, and not detente in Europe, that matters. However, there is a group of persons who assume simply that European detente means detente in our region, and that a possible super-power reduction in the Western Pacific will benefit our region. These articulate peoples' debating ability greatly exceeds their objectivity and perceptivity.

It will be very much to our long term disadvantage if we allow their wishful thinking to go unexposed.

### THE COST

When Lehman became Secretary of the Navy, it was clear that the cost of rectifying the block obsolescence problem would be very high. That cost would be exacerbated by the cost of rectifying the personnel problems.

However, the cost of building the new ships and aircraft was offset to a substantial extent by applying much more vigorously

the principle of competition in letting naval shipbuilding tenders.

The Australian Government has applied this principle vigorously to the Submarine and Anzac Frigate Projects. However, now that these two contracts have been let there will be no further business on this scale for some years. When more business does become available, perhaps for the DDG successors, Defence will have to develop a new strategy to gain for the taxpayer the advantages of competition.

A key to success is keeping the two contenders on a level footing. Both must have products that are equally acceptable to the buyer. Australia has not always done this, particularly in the case of aircraft.

### BUYING THE BEST IS WISEST

It is often said, both here and in the US, that more cheaper smaller ships or aircraft are a better investment than fewer bigger better more expensive units.

Lehman reflects this view, which is widely held in the US Navy. In the case of aircraft carriers, it is argued that the large deck carrier suffers fewer aircraft accidents, and can sustain greater combat damage and continue operating due to built in redundancy and superior damage limiting capabilities. These are in addition to the basic cost effectiveness argument that one big ship requires fewer personnel per ton

than several smaller ships.

The argument in favour of re-activating the four IOWA class battleships were that, although built in the 1942, they had seen little service and were in excellent condition. Their armour imparts excellent protection and they were modernised with the latest communications and electronic warfare equipment, Harpoon anti-ship missiles and Tomahawk surgical strike land attack missiles.

Each battleship was modernised for the cost of one new frigate.

In the context of critics' claims that the battleships are vulnerable antiquities, and have no role in modern naval warfare, it is of interest to note that the Soviet Navy has built four KIROV class battlecruisers which, when models built to the same scale are compared, are almost as large as the IOWA class.

Regarding nuclear powered submarines, Lehman states that the reason the USN does not have diesel electric submarines was they can rely on boats of this type in the navies of the allies. In other words, there is a requirement for both types.

### NOTES

- (1) "Command of the Seas - Building the 600 Ship Navy", published by Charles Scribner's Son, MacMillan Publishing Co, New York. ISBN0-684-18995-X.
- (2) Lehman page 120.
- (3) Lehman page 100.

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# ROYAL NAVY MONITOR PICTORIAL



HM Submarine M1.



HMS TERROR.



MHS GENERAL CRAUFORD, 1915



HM Submarine M2.

THE NAVY

April - June, 1990

# ROYAL NAVY MONITOR PICTORIAL - Continued



HMS GENERAL WOLFE. Note the 18 inch single gun aft and the twin 12 inch forward.



HMS GORGON.



HMS GORGON. Guns at maximum elevation.



HM Monitor M27 in action in the Dvina River during operation against the Bolsheviks, 1919.



HMS MARSHALL SOULT.

THE NAVY

April - June, 1990



Sea King helicopter during amphibious exercise.

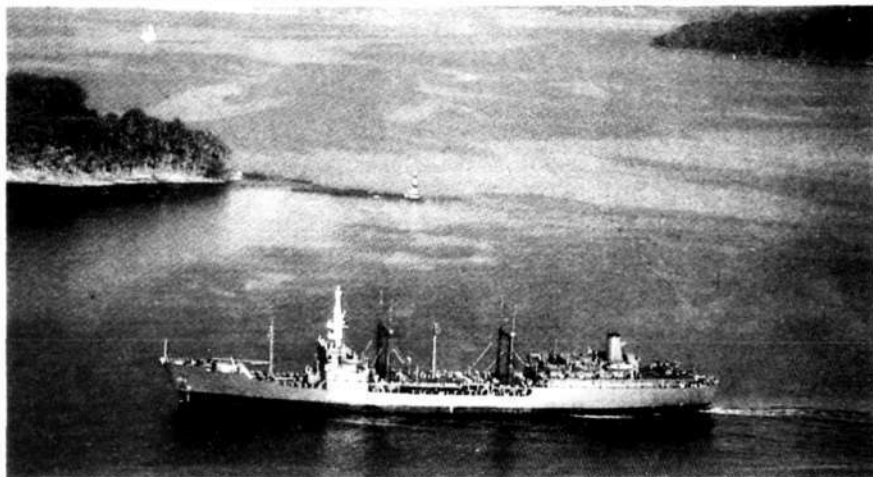


New Khurki class missile corvette, built in Bombay, 1988.

# INDIAN NAVY TODAY



Soviet built Kilo class submarine.



Replenishment tanker SHAKTI.



KUMBHIR, of the Soviet Polnochny class of medium landing ships.



Godavari class frigate.



Kamov helicopter aboard VIRAAT.



Fast patrol craft.



India's two aircraft carriers, VIRAAT and VIKRANT at sea. Both ships are fitted with a ski-jump for Sea Harrier operations. The carrier in the foreground is the former HMS HERMES.



# NAVAL NEWS

## New Survey Motor Launch Enters Service

The second of four new hydrographic survey ships was named and commissioned into the Royal Australian Navy in Adelaide on 4 December, 1989.

The new ship, HMAS Mermaid, is Australian designed and built by Eglo Engineering Pty Ltd of South Australia as part of a contract worth \$18.7 million.

During the ceremony Defence Minister Kim Beazley said Eglo had demonstrated with Mermaid its ability to construct high quality ships for the Navy, on time and within budget.

The 1987 Defence White Paper highlighted the basic importance of mapping, charting and environmental infrastructure to the development of Australian self-reliance.

Australia's commercial interests and maritime operations – particularly those involving navigation in mine-counter-measures, submarine and anti-submarine operations – rely on accurate charts of the Australian continental shelf.

The ability of launches to negotiate shallow water also makes them ideal for their first task – to update charts of the Great Barrier Reef and Northern Australia.

HMAS Mermaid was named after HM Cutter Mermaid, the ship used by



The new HMAS MERMAID.

Australia's first hydrographic surveyor – Lieutenant Philip Parker King – who opened up the inner route of the Great Barrier Reef in the early 1820s.

Mrs Angela Compton, wife of the Royal Australian Navy's hydrographer, Commodore John Compton, officially launched the Mermaid at today's ceremony attended by the Chief of Naval Staff, Vice Admiral Mike Hudson.

Accurate digital nautical charts will be produced from a new hydrographic data logging and processing system – HYDLAPS – installed in the ships and supplied by a West Australian company.

## ADI Wins Ship Modification Contract

Defence Minister Kim Beazley announced in December, 1989 that Australian Defence Industries (ADI) had been awarded a contract for more than \$40 million to modify the guided missile frigate (FFG) HMAS Canberra to operate Seahawk helicopters.

The contract awarded to ADI – Australia's largest defence equipment manufacturing and services company – represents 700,000 hours of work involving 250 tradespeople at the dockyard for more than a year.

The announcement was part of a ceremony at the ADI Garden Island facility to herald the return to the Navy of the FFG HMAS Adelaide and destroyer (DDG) HMAS Perth from the dockyard.

## NAVAL NEWS

– Continued

HMAS Adelaide has been docked for 19 months for modifications worth more than \$30 million.

These modifications include the complete replacement of the stern section of the hull, the flight deck and portions of the hangar decks, installing a helicopter handling system as well as adding computer controlled fin stabilisers.

HMAS Perth has undergone 30 months of modification at a cost of about \$65 million which involves an updated combat system.

With the completion of HMAS Canberra in 1991, Garden Island will have completed the modernisation, modification and general upgrade of six of the Royal Australian Navy's seven front line ships.

All FFGs will be capable of deploying Seahawk helicopters: HMA Ships Adelaide, Sydney, Canberra, Darwin, Melbourne and Newcastle.

In 1987 HMAS Brisbane was the first DDG to undergo a major update at ADI for \$60 million, while the FFG HMAS Sydney was completed for \$35 million in February this year.

The third DDG, HMAS Hobart is currently half way through its modernisation.

## HMAS Shepparton Commissioned Into Service With The Navy

A new survey motor launch for the Royal Australian Navy, HMAS Shepparton, was commissioned into service with the Navy's Hydrographic Service on 24 January, 1990.

Speaking at the naming ceremony, the Minister for Defence Science and Personnel, Mr David Simmons said that the Government's 1987 Defence White Paper highlighted the basic importance to Australian



HMAS STALWART enters Sydney Harbour for the last time, 8 December, 1989.



Aerial view of the Mine Warfare Force base, HMAS WATERHEN, January, 1990. Three of the COOP minesweepers are lying alongside, to the left.

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HMAS WESTRALIA alongside HMAS STIRLING for the first time.



## NAVAL NEWS

- Continued

self-reliance of mapping, charting and infrastructure knowledge.

HMAS Shepparton was named by Mrs Felicity Gaylard, Mayoress of the Victorian city of Shepparton.

## Defence Minister Names Australia's New Submarines

The first of Australia's new submarines is now taking shape following keel-laying ceremony in Adelaide on 14 February.

Defence Minister Kim Beazley announced that the RAN's Type 471 submarines would be known as the Collins Class after Vice Admiral Sir John Collins, the RAN's most distinguished officer.

"The first submarine of the class which we are taking shape today will be called HMAS COLLINS. Later boats in the class will be named after other distinguished former members of the RAN, some of whom gave their life for the country," Mr Beazley said.

"This is the first time Australian naval warships, built in Australia specifically to meet Australia's needs, will be named after Australian sailors.

"This sense of Australia's navy coming of age is epitomised by the career of Vice Admiral Collins, who died late last year.

"He was among the first cadets to enter the Royal Australian Naval College in 1913, the first Australian to reach the rank of Admiral, and the first Australian-born Chief of Naval Staff."

Mr Beazley announced the names, in order of construction, of the new submarines. They are:

HMAS COLLINS	(Sub 01)
HMAS FARNCOMB	(02)
HMAS WALLER	(03)
HMAS DECHANEUX	(04)
HMAS SHEEAN	(05)
HMAS RANKIN	(06)

The keel-laying at the Australian Submarine Corporation (ASC) - the only submarine construction facility south of the Equator - was also attended by the South Australian Premier, Mr John Bannon, and the Chief of Naval Staff, Vice Admiral Michael Hudson.

The boats will operate from both east and west coasts as a vital plank of the two ocean Navy policy outlined in the Government's 1987 Defence White Paper.

In terms of benefits to industry, the submarine project sets the baseline for all the other major Defence projects to follow and is already reflected in the industry objectives for the \$3.5 billion ANZAC ship project.

Seventy per cent of the platform work on the new submarines will be built in Australia representing about \$2 billion to local industry.

Forty-five per cent of the Rockwell combat system will also be carried out in Australia and imported elements of the system will bring a further 30 per cent offsets obligations worth more than \$130 million to Australian industry.

The project would mean about 2000 new jobs. ASC now employs more than 400 people and is still growing.

It will also mean technology transfer to Australia including skills in micro-alloy steel development, optics electronics testing techniques and precision fabrication.

Directly flowing from the project is the opportunity for Australia to develop its own centres of excellence in areas such as computer software development, battery technology and information systems.

The new boats will progressively replace the six Oberon-class submarines now in service at a total project cost of \$4.3 billion (April '89 prices).

## New Submarine School Goes Ahead In WA

Defence Minister Kim Beazley, on 16 February signed a \$10.5 million contract to begin work on a new submarine

training school at HMAS Stirling, south of Fremantle.

Crews of the Royal Australian Navy's (RAN) next generation of submarines - known as the Collins Class which will enter service throughout the 1990s - will train at school.

The contract was awarded to Western Australian firm, SABEMO (WA) Pty Ltd, which was also chosen to construct the submarine escape training facility on the base.

The school is the first major facility to be built as part of HMAS Stirling's further development programme needed to support more than half the naval fleet.

Approximately \$50 million will be spent by the time the school is finally constructed and equipped by June next year.

In contrast, training for the current Oberon Class submarines was conducted in the UK until the 1980s when a school was set up at HMAS Platypus in Sydney.

Crew training trials for the Collins Class boats are expected to start in July 1992.

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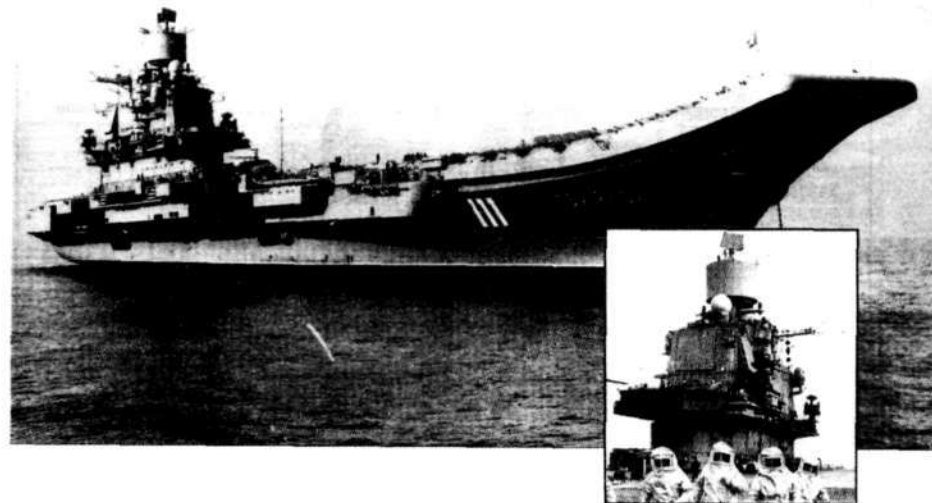
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## NAVAL NEWS

- Continued



## Russian Carrier

New from the Soviets is the *Tbilisi*, the largest warship yet built in the Soviet Union - and the largest built by any country since World War II, except for US aircraft carriers.

According to Soviet reports, the carrier displaces 65,000 tons at full load and carries 60-65 aircraft; her 200,000 shaft horsepower engines drive her at 30 knots. She conducted her first flight trials with conventional take-off and landing jet aircraft - left, Viktor Pugachev, hero of the Soviet Union and senior test pilot with the Sukhoi design bureau, with his crew and Su-27 Flanker on the *Tbilisi* - while operating in the Black Sea during November 1989. The carrier also conducted trials with MiG-29 Fulcrum and Su-25 Frogfoot light attack aircraft. The carrier has arresting gear to recover conventional jet aircraft, but is not fitted with catapults; pilots deck-launching using the carrier's ski-jump bow. Dominating the *Tbilisi*'s island structure, above, is the large, circular antenna for the Cake Stand tactical air navigation system; under it are the antennae for the Sky Watch three-dimensional, phased array radar.



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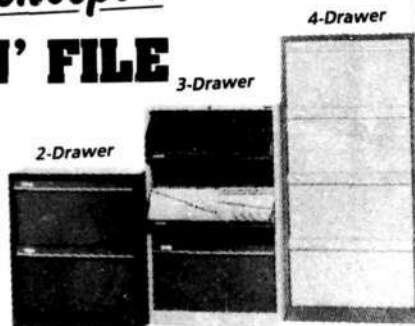


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# The South African Navy – Today



SAS PRESIDENT PRETORIUS prior to modernisation.

*Strategically, South Africa has been lucky up to now in having no real maritime threat to her flanks. None of her neighbours can mount any sort of naval operation which is outside the South African Navy's (SAN) capabilities. However, this may not be the case for ever. The Navy looks at the history of South Africa's Navy, its present capabilities and its future needs.*

BY ANTONY PRESTON

The South African Navy has a long pedigree. In the 1880s the first naval volunteer unit was formed in Natal for the defence of Durban. A South African Division of the RNVR was founded in 1912, and its personnel served in the Royal Navy in virtually every theatre of war in 1914-1918.

Although there was no separate naval force in 1914, a number of minor vessels, such as tugs, were pressed into service by the RN for the campaign in South West Africa. The first true naval force was not created until 1922, when the fledgling South African Naval Service received two trawlers and a survey ship from the RN. The fate of this was sad; financial stringency allowed it to wither away, and in the mid-1930s the ships were returned or sold.

In 1940, a new organisation came into being, the SA Seaward Defence Force, known to some as the 'Seaweed Defence Force'. Although a motley collection of 15 trawlers, whalecatchers and tugs, the force shouldered the burden of escorting Allied

merchant ships around the Cape of Good Hope and also swept mines. It expanded enormously as the war progressed, and provided a series of escort and minesweeping groups in the Mediterranean. The British C-in-C of the Mediterranean Fleet regarded the work of the salvage ship *Gamtoos* as invaluable, and as important as the rest of the Seaward Defence Force.

In the closing months of the war the RN transferred three new 'Loch' class anti-submarine frigates. With two fleet minesweepers, these frigates became the backbone of the post-war fleet, whose name changed to the South African Naval Forces, in 1947. The strength of the SANF was now 17 ships, including auxiliaries and a survey ship.

Yet another renaming in 1951 created the South African Navy (SAN). A period of growth now started, with the RN

transferring two 'W' class destroyers and a Type 15 frigate. In addition, the mine-sweeping capability was increased by the purchase of ten 'Ton' class coastal minesweepers. The role of the SAN as a Commonwealth Navy was seen as the defence of the Cape sea route, with technical assistance and training provided by the RN.

The British orientation continued to the end of the 1950s, with the 1955 Simon's Town Agreement binding Great Britain to provide aid in exchange for base rights. Three 'President' class frigates were bought from Britain, virtually identical to the contemporary *Rothsay* class in the RN, and the destroyers *Simon van der Stel* and *Jan van Riebeck* were converted to Type 16 frigate standard.

Then came South Africa's decision to declare itself a republic, which led to her leaving the Commonwealth in 1961. To reduce reliance on Britain as the sole source of equipment, an order was placed with France, in 1967, to buy three *Daphne* class submarines. In the early 1970s there was a

further blow to Anglo-South African naval co-operation, when the South African Government declared that it no longer felt bound to defend the Cape sea route without help from its so-called allies. In practice, this meant deferring a decision to modernise or replace the 'President' class, and to opt instead for a purely coast defence role.

The visible sign of this was the order for three missile boats placed in Israel - craft capable only of defending the coast.

In 1975 the British Government repealed the Simon's Town Agreement, a formal admission of the Labour Government's deep distrust of South Africa. It marked a sad end to the long association between the SAN and the RN, but times had changed. The RN had turned its back on out-of-area commitments and had no real need for Simon's Town. It is doubtful if the SAN could have afforded the sort of frigate which the British wanted to sell them.

Today, the role of the SAN can be summarised as the need to protect territorial waters, to help control the 300,000 square miles of the EEZ and to deter subversion or direct naval attack on the Republic. To achieve these aims, the SA is divided into two area commands. Naval Command East has its HQ in

Durban. Major bases are Simon's Town in the Western Cape and Salisbury Island in Durban. Saldanha Bay is used for training and there are minor bases and command centres of East London, Port Elizabeth and Walvis Bay.

### THE SUBMARINE FORCE

The Submarine Flotilla, the main striking force of the SAN, is based at *Hugo Biermann* at Simon's Town. The *Emily Hobhouse* has been modernised with new sonars and electronics; the *Johanna van der Merwe* is currently in hand and the *Maria van Riebeck* will follow. They retain the French L4, L5 and E15 torpedoes supplied in 1970-71.

As other navies have discovered, three is a difficult number of submarines to run. The SAN gets remarkably high availability rates out of its three, but five would be a better number to guarantee two boats on patrol at all times. An attempt to buy more *Daphnes* from Portugal fell through, and the French Government embargoed the delivery of the two *Agosta* class in 1978.

Rumours persist of a clandestine purchase of Type 209 drawings from Germany, but no evidence has been produced to justify the wilder speculation

in the media. South African contacts with Israel provide a more plausible explanation, but the fact remains that the SAN has a requirement for two more SSKs.

### THE SURFACE FLEET

The former frigate force is now reduced to a nominal total of two ships but the *President Pretorius* and *President Steyn* are laid up without armament or sensors. In theory, they can be refurbished and given some sort of service life extension programme, but the hulls are now a quarter of a century old. The steam turbines might be worth salvaging, but new construction would be far more cost-effective.

The requirement is for three 1,500t light frigates or large corvettes. Plans to buy two A69 corvettes from France were aborted by the French Government in 1978, along with the two submarines.

The decision to buy the Israeli *Sa'ar 4* or *Reshef* class is now seen as less than satisfactory. Given the steep seas off the South African coast, a large corvette might be better suited than a 62m fast patrol boat.

The first three 'Minister' class missile boats were built in the Haifa Shipyard but

the next six were built by Sandock Austral in Durban (now Dorbyl Shipbuilders). Plans to build three more have been shelved, further proof that they do not entirely meet SAN needs.

The Strike Craft Flotilla is based at *SAS Scorpion* in Salisbury Island, where full maintenance facilities exist. A second squadron has been established at Simon's Town, and a mobile logistics system enables the strike craft to be deployed to other harbours and anchorages at short notice.

The Skerpioen anti-ship missile a locally manufactured variant of the Israeli Gabriel II, adapted to meet local industrial capabilities. Each 'Minister' class FAC has six missiles with an option for two more. Gun armament is two single 76mm L/62 OTO Melara Compacts, backed up by two single 20mm and two 12.7mm machine guns.

Only four of the British-built 'Ton' class coastal minesweepers are now in service. In 1987, a lack of trained personnel forced a reduction in the Mine Countermeasures Flotilla, but there are signs that it is being built up again. Four 'River' class coastal minehunters have been built in Durban. The design owes a lot to the West German Navy *Schutz* class, with wooden hulls.

The *Umkomaas* and her sisters are equipped with a hull mounted mine-hunting sonar, and two mine disposal vehicles. Reports suggest that more may be built and surprisingly the Turkish Navy has expressed an interest in the design.

### THE SUPPORT FLEET

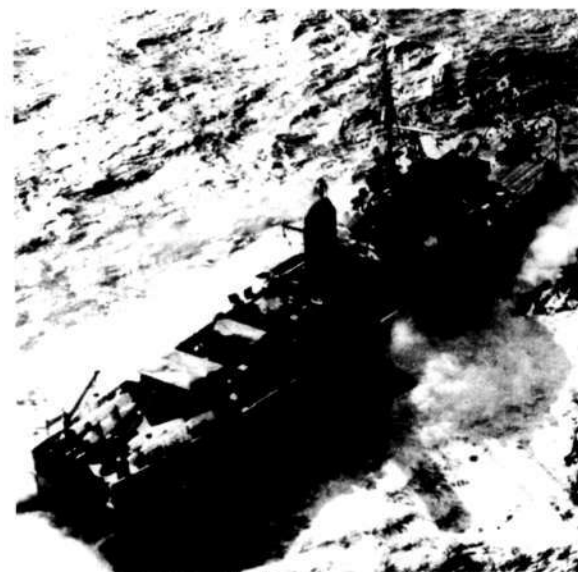
For a navy which has no out-of-theatre role, the SAN is well provided with auxiliaries. The 30-year old replenishment ship *Tafelberg* has been thoroughly overhauled and modernised. She is a converted tanker, built in Denmark in 1959. She now operates Super Frelon helicopters.

Pride of the fleet is the locally designed and built *Drakensberg*, which went to sea in 1987. Like the *Tafelberg*, she is fully equipped to transfer ordnance, fuel and dry stores underway. She has a hangar accommodating two Puma helicopters, and a locally designed securing and recovery system. The *Drakensberg* is the largest ship ever built in South Africa (12,500t at full load). In wartime she could function as a base ship for strike craft or MCM vessels.

The survey ship, *Protea* was built in Britain in the early 1970s. The design is very similar to the RNs *Hecla* class.

Minor auxiliaries include the locally-built torpedo recovery vessel and diving tender *Fleur*, now 20 years old. The training tender *Navigator* is attached to the Naval College in Gordon's Bay. For harbour patrol duties, there are 30 'Namacurra' type 9m launches. These twin hulled craft are equipped with radar and armed with rifle-calibre machine guns.

The Marine Brigade was established in 1979 to undertake harbour defence and



Ton class minesweeper.

protection of naval bases. Harbour Protection Units have been set up for each major harbour and naval base, and they operate the 'Namacurras' and Delta landing craft. There are also 'Vredenburg' type patrol craft, based on a West Coast fishing vessel design, flat bottomed craft powered by inboard motors.

### THE FUTURE

The SAN has always been the junior partner in the Armed Forces, and in the absence of clear maritime threat it is hard to secure the necessary funds. Moreover, the end to the war in Namibia and Angola will inevitably lead to a cutback of military funds. However, the long-term need for a balanced and capable navy remains.

Strengthening the submarine force remains a priority, but there is also a need for a light frigate, which can serve as an offshore patrol vessel in peacetime. Mine countermeasures is also a priority, with an ever-present threat of sabotage or clandestine mining against shipping. More of the 'River' class may replace the four remaining coastal minesweepers.

Reports suggest that the 'Minister' class fast attack craft are showing signs of wear and tear. Two are reported to have been laid up after severe corrosion; they may have been sunk as targets or merely scrapped. It is unlikely that they will be replaced as opinion seems to

have come round to a need for a ship displacing at least 1,500t. Local sea conditions are very wearing for small craft.

Strategically, South Africa has been lucky up to now in having no real maritime threat to her flanks. However, the growing Indian Navy is matched by a sense of adventurism, and it is not too far-fetched to imagine a time when an Indian carrier task force might be ordered to make a demonstration against the South African regime.

Such a scenario might be over-inventive in the short term, and the distances involved might impose unbearable strains on the Indian Navy, but it would call for some counter-action by the SAN. The submarine flotilla would be a powerful deterrent, but it would need back-up from a credible surface action group.

There is, of course, still the Soviet Navy to consider. The impact of *perestroika* may have little relevance to South Africa, but one risk is that a disarmament-minded West might care even less about intervening to stop Soviet action against South Africa. The risk is small for the moment, but the future trend of Soviet policies is unclear.

Whatever happens, the case for spending money on the South African Navy needs to be made. The arguments may not be obvious to everyone, but they are nonetheless valid.



Tanker TAFELBERG in the 1970s.

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## BOOK REVIEWS



### NEW ZEALAND NAVAL VESSELS

By R. J. McDougall

Published by

Government Printing Office,

New Zealand

Price \$39.95

*The recently published New Zealand Naval Vessels, is an A4 landscape book, spanning 186 pages. Like all good naval reference works, the author has presented the development of the Navy in New Zealand in a most sensible and informative style.*

A brief introduction, covering the political and naval developments of the Navy is followed by the first major section, the New Zealand Division, from pre-WWI to the formation of the RNZN in 1941. Some famous ships to be featured include the battlecruiser HMS NEW ZEALAND, the long serving PHILOMEL and 1895 gunboat HMS TORCH.

Despite the lack of an officially created force, New Zealand chartered three mine-sweepers and instituted a brief examination service during the Great War.

Newer and more powerful ships joined the NZ Division from 1921 with the arrival of the name ship of the Chatham class of light cruisers. She was followed by two modern D class cruisers and during the mid-war period, two Flower and then two Grimsby class sloops. The Division's first tanker, NUCULA supported the force from 1924 to 1937.

The RNZN was officially formed in September, 1941, but even before this, various new construction was implemented and a scheme to requisition a wide variety of civilian vessels had been implemented. Like the RAN, the RNZN

quickly expanded with these ad hoc ships fulfilling numerous roles, both in the front line and support.

New Zealand Naval Vessels provides extensive and well researched descriptions of the technical and historical careers of the Kiwi warships. The RNZN is presented via entries for cruisers, frigates, corvettes, minesweepers, patrol craft, supply ships and tankers, research and survey ships, port fixed defence ships, dockyard and auxiliary craft, launches, barges and lighters, bases and non-military vessels. Separate appendices describe the war vessels of the Maori wars, submarine mining steamers, torpedo boats, the examination service and Army and Air Force craft.

Last but not least, details are included of the Westland Wasp helicopters flown from the present day frigates.

Photographically, New Zealand Naval Vessels provides the most detailed pictorial coverage yet published on the Kiwi warships, past the present. The author has gone to great lengths to illustrate every possible unit, with modifications and post Navy profiles, if sold by the RNZN.

Many naval authors are contented to end the careers of the ships being described when they leave naval ranks. This book is an exception with detailed eventual fates, to provide a proper finale for all vessels.

In summary, New Zealand Naval Vessels, is highly recommended to the libraries of those who read this review. It has a few errors, including when the RAN is mentioned, but overall has provided this writer with many hours of interesting and enjoyable reading.

The book can be purchased from the Government Printing Office, Publications Division, Private Bag, WELLINGTON 1, New Zealand for NZ \$39.95.

### BRITISH WARSHIPS AND AUXILIARIES

By Mike Critchley

Published by Maritime Books

*The latest edition of this invaluable reference book is now available in Australia.*

Within 100 plus pages the author has successfully described and illustrated the entire scope of Royal Navy, Royal Fleet Auxiliary and Royal Maritime Auxiliary Service vessels. As well army craft are included plus the aircraft of the Fleet Air Arm.

British Warships and Auxiliaries is an A5 size book with glossy paper and a colour section. Each ship or class entry is described via the text and data with a black and white photograph.

As an instant reference to the current day British forces afloat, the book is an

inexpensive, yet well presented volume, a worthy addition to your bookshelf.

### SOVIET SUBMARINES 1945 to the present

By John Jordan

Published by Arms and Armour Press

Review copy from Capricorn Link,  
Australia.

Cost \$65.00

*The history of the Soviet Submarine arm is one which has been surrounded by mystery and intrigue. Very few foreigners, if any, have embarked in the boats, leaving it to the intelligence officers of the allied navies to surmise what their roles, and capabilities were and are currently.*

This book is the first popular attempt to place on record, both in narrative and photographs, the growth and development of the Soviet Submarine arm. Like his earlier book, Soviet Surface Warships Since 1945, the author has presented the reader with an easy to read, chronological description of the various submarine classes, supported by an extensive selection of black and white photographs with numerous line drawings.

Attack boats, ballistic missile and even trial and special purpose submarines are included. Data tables for all are attached to each boat or class and to conclude, specifications for missiles and maps depicting operating areas are throughout the book.

The major chapters are The Post War Era, Anti-Carrier Strategy, The New Generation, Alfa and Papa, The Bastion Concept, The Missile Giants and the New Attack Boats. In all about 40 classes are described in Soviet Submarines, 1945 to the present.

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## NAVY LEAGUE AND CADET NEWS

### NAVY LEAGUE COMMUNITY AWARD

The Federal Council of the Navy League selected the Naval  
Communications Station HAROLD E HOLT as winner of the  
1989 Community Service trophy. The award is made annually  
to the RAN ship or establishment considered "most worthy of  
recognition for service to the civilian community" The citation  
reads:-

The harmonious co-operation between the RAN and the USN at  
NAVCOMMSTA Harold E Holt has always extended to the  
local community at Exmouth. The close knit, isolated  
community on the North West Cape depends on the unselfish  
acts of committed people who freely give their time, attention  
and skills to benefit the community's welfare and quality of life.  
The commitment to those tasks shown by the Station's  
personnel has never been greater than during the past twelve  
months.

Through the wholehearted efforts of the military and civilian  
personnel at NAVCOMMSTA Harold E Holt, the Station's  
Command has been able to support and initiate worthwhile  
community programmes in the areas of safety, health, youth, the  
aged, recreation, entertainment, education, parks and the  
environment.

Through the generous gestures and helping hands provided by  
the Station's personnel to the local community throughout the  
past year, the Station is awarded the Navy League of Australia  
Perpetual Trophy for 1989.

The amount of "spare time" devoted by naval personnel to  
aiding civilian causes is not generally realised; foreign as well as  
Australian communities benefit from these voluntary activities  
which do much to enhance the reputation and standing of the Navy  
in the areas in which it operates.

Commodore Graham Stubington AM RAN, Naval Officer  
Commanding West Australia Area, presented the trophy on behalf  
of the Navy League to the Communications Station at a ceremony  
at Exmouth in December.

### NORTHERN TERRITORY

During February 1986, the NT Division of the Navy League  
sponsored and formed a Unit of the Australian Sea Cadet  
Corps. The Unit was named TS Darwin.

On 1 October 1988, the Unit was recognised as a Naval Reserve  
Cadet Unit and on 30 July 1989, a Commissioning Parade was held  
on board HMAS Coonawarra.

In his handover address, the President of the NT Division, Mr  
Colin Orr thanked all who had been involved in setting up the Unit.  
He also made reference to the importance of the month of July in  
RAN history.

RAN Ships, Perth, Townsville, Whyalla and Darwin all being



CDRE Stubington addresses station personnel.



CAPT Horner receives the award from CDRE Stubington

commissioned in various years, during that month. Now in July  
1989, TS Darwin was being commissioned as a Unit of the Naval  
Reserve Cadets.

Chief of Naval Staff, Vice Admiral M Hudson, inspected the  
Unit and handed over the Commissioning Certificate to the  
Commanding Officer of TS Darwin Lt S. Martin.





## NAVY LEAGUE AND CADET NEWS – Continued

Finally, Vice Admiral M. Hudson took the salute at a march-past of Officers, Insstructors and Cadets of TS Darwin.

The Unit is accommodated on board HMAS Coonawarra and recognition must be given to the Commanding Officer CMDR. R. Eames RAN and his staff for all the assistance given in establishing the Unit.

Cadet activities have included:-

- Camps at Lake Bennett
- Parading for Anzac Day
- Visits to various ships including the Unit's namesake HMAS Darwin
- Assisting in the Freedom of the City march through Darwin by contingents from RAN and USN ships, in port for the exercise K89.

The Unit is supported by an active Unit Committee led by Chairperson Mrs B. Kilver.

### FEDERAL COUNCIL MEETING

*Perth, Western Australia 1989. Text of speech by Lieutenant Governor at WA, The Hon Sir Francis Burt, AC, KCMG.*

As this is the first occasion that the Navy League of Australia has held its annual conference in Western Australia, may I firstly bid all of you a very warm welcome to Fremantle. In future years you will surely come more often as Fremantle and Cockburn Sound are destined to become the home port for a significant Australian Naval Force, or more particularly for a significant Australian submarine facility.

I served in the Royal Australian Navy for the first two years of the war and later I renewed my contact with the service when for a year I was counsel assisting the Royal Commission into the Voyager disaster. With that experience, limited as it was, I am very conscious of the importance of the navy in the protection of our Island Continent – the largest in the world – a nation "girt by sea". And I am very conscious of the limited resources which in times past were available to the navy to discharge its responsibility. By way of example in the early days of the war the naval presence in Fremantle consisted of three small minesweepers augmented from time to time by HMAS Adelaide. Nevertheless, these difficulties were overcome and the Royal Australian Navy has served the nation with efficiency, valour and with great distinction in two world wars, in Vietnam and in Korea.

I am sure that the great tradition is today in good hands and that the Royal Australian Navy will continue to be a strong energetic and effective arm of the defence forces. It must be so because our future as an island nation may well depend upon it.

To me, the remarkable thing is that although all that is transparently obvious it appears not be generally appreciated. That if true is a pity and it could be a disaster. As a people we appear to be attracted to the sea. We live by the sea and we find our recreations in and on the sea but no doubt because our survival in the first hundred years or so was dependent upon the discovery and the development of our enormous and hard land mass we seem now as a people to relate emotionally more to the land than we do to the sea. Australian as a people cling to the coast but their folk lore is land based – Waltzing Matilda, the man from Snowy River, Ned Kelly and the great island explorers. It is a strange paradox.

As it seems to me the Navy League of Australia is concerned to balance this up. The League's parent organisation was formed in Britain in 1895 by a group of citizens concerned about the state of Royal Navy. Branches of the League were soon thereafter formed in many parts of the world. In Australia the first branch was formed in Tasmania in 1901 and thereafter in each of the Australian states and in New Zealand, South Africa, in Canada and in the United States. They all flourish today and I express the hope that they will continue to do so.

The League appreciates that the future of the country may well depend upon the navy and it also appreciates that the future of the navy is in the last analysis dependent upon the enthusiasm and upon the dedication of young people. They must be introduced to the sea and so acquire an understanding of it and a love for it and, most importantly, the discipline which is necessary for all who operate upon it. The League has laboured hard and long in this area. Its work in introducing young people to service upon the sea has gone on for many years and with great and to a large extent unrecognised success.

I am pleased to have this opportunity to congratulate the Navy League in creating and preserving a broad base of support for the Royal Australian Navy in its important work. It is no doubt true to say that the creation and the maintenance of political and popular support for a country's defence forces is not easy to achieve in times of peace but to say that is only to point up and to emphasise the importance of the work which you are doing. It may at times appear to be a rather thankless task but I can assure you that it goes neither unnoticed nor unappreciated by those who give the matter any thought.

Lady Burt joins with me in thanking and encouraging each of you in the important work which you are doing. We wish you all a productive conference and an enjoyable stay.

It gives me much pleasure to now declare the 23rd Annual Conference of the Navy League of Australia to be officially open.



*Navy League 1989 Conference representatives.*

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