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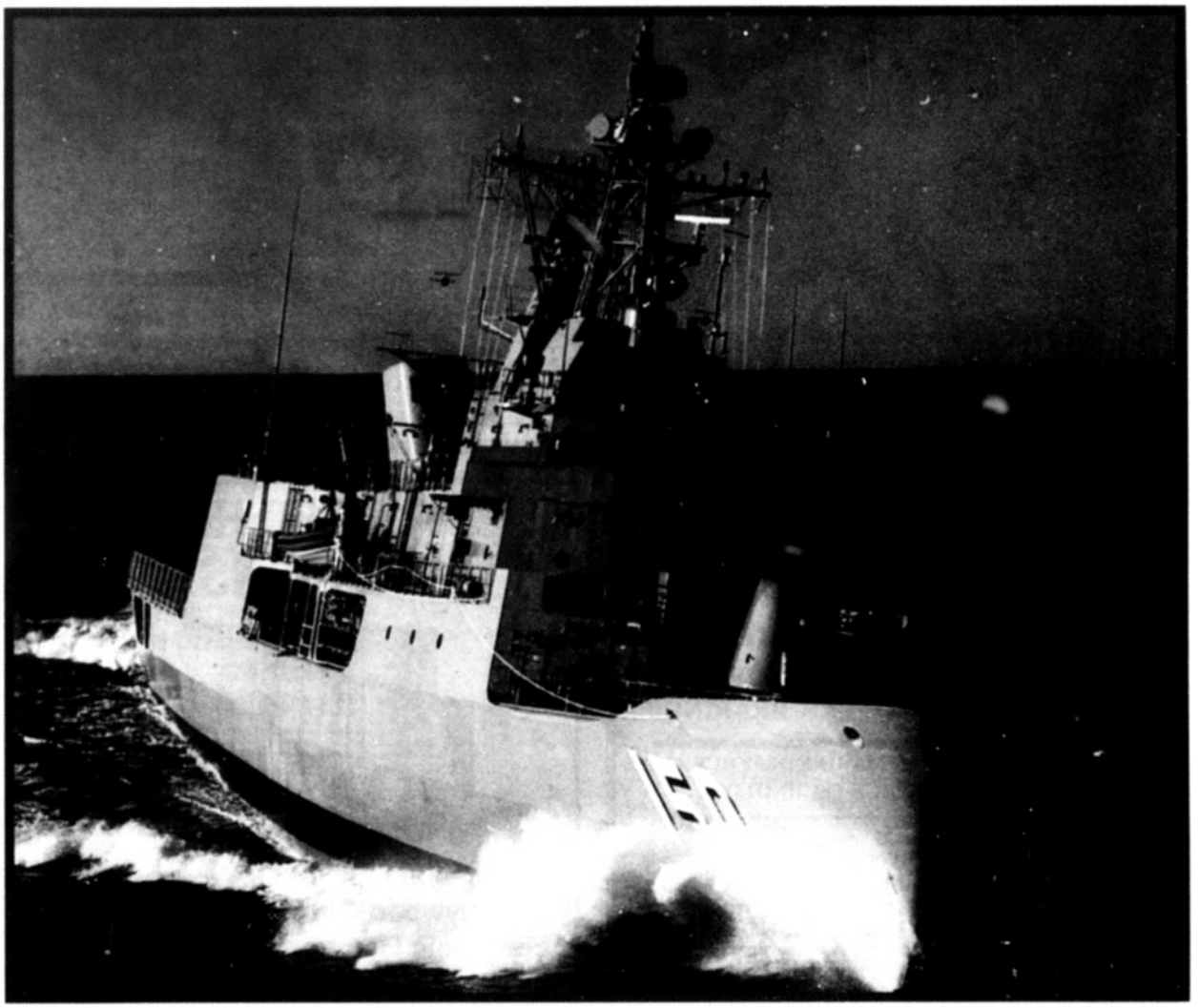

In this Issue

Regular Features

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viewpoint

NAVY 1996

Prior to the recent Federal election the Liberal-National Party opposition promised to maintain Defence expenditure at its present level of some $10 billion.

Upon coming into government the Coalition announced that there was an immediate need to get the budget back into balance. Since then a vigorous campaign has been conducted to discover where government expenditure can be cut. The stated aim is to achieve a reduction over 2 years of $8 billion.

Despite all the obvious pressures, Defence has been quarantined from the expenditure review process. The promise to maintain a defence budget of $10 billion has been met. This is an outcome which must be welcomed.

Of course, there is a sting in the tail. The fact that Defence has been exempted from the expenditure cuts which are, apparently, to touch all other Departments, means that it cannot afford any suggestion of ill judged expenditure or waste. The benefit of retaining its budget untouched carries with it the responsibility to ensure every cent is well spent.

☆ ☆ ☆

At the last Federal Council of the League concern was expressed as to Navy's commitment to the Naval Reserve Cadets. I have recently been told that such concerns or doubts are unwarranted. I am assured that Navy remains firm in its support for the Cadets.

☆ ☆ ☆

HMAS ANZAC commissioned on 18 May, 1996. As ever, a moving occasion.

It was interesting to walk around the ship. It so obviously has the capability to carry much more than the weaponry etc with which it is presently fitted.

In the not too distant future Navy will have to make a decision about replacing the three thirty year old DDGs. Rather than spend money on three new destroyers why not upgrade the eight ANZACs to their full potential. Then, instead of 3 new

CONTINUED ON PAGE 2

OUR FRONT COVER:
The new frigate HMAS ANZAC, photographed at speed off Jervis Bay in June 1996. ANZAC arrived in Sydney on Friday, 7 June.
(Photo - POPH Kym Degener).

THE NAVY

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viewpoint

NAVY 1996

CONTINUED

destroyers, 6 tier one FFGs and 8 less capable ANZACs, Navy could have 14 fully fitted frigates.

Graham Harris

Graham HARRIS
Federal President
Navy League of Australia

☆☆☆

viewpoint

FROM OUR READERS

The History of Australian Naval Aviation

Dear Sir,

The Australian Naval Aviation Museum has commissioned Robert Micheal Nicholls, a successful author of previous historical books, to write the History of the RAN Fleet Air Arm. The objective is to publicly launch the completed work on the 50th Anniversary of the RAN Fleet Air Arm, 28 August 1998, at the Australian Naval Aviation Museum, Nowra NSW.

Research is well under way but time is critically short to produce an appropriate book that we can all be proud of. The book is to be a balanced work of a fully annotated semi academic account of the history, combined with human event stories interspaced throughout with an ample photographic and illustration backdrop. The concept is to provide an introduction covering the period 1911 to 1948, the main body of the book will deal with the carrier fixed wing era 1948 to 1983, and a prologue will cover events to modern times.

The cost of the book will be $55 each. However, the following financial arrangement is offered to readers:

- persons making an early payment for pre launch sales- whether by instalments or in full - credit card, cheque or cash will attract:-
- 20% discount
- numbered book
- book signed by the author

☆☆☆

Urgently Required

We urgently require your stories and photographs to ensure we produce a well balanced account of events from all angles including, officers, support crews, ground crews, wives and sweethearts (of the time!!). There is no limit on the material, as we intend to follow-up this first book with a collection of stories as a second book if appropriate.

All material forwarded will require a covering letter giving us approval to print and full copyright. Authenticity is of the essence. This material will be the custodian responsibility of the Museum Director and should be forwarded to him as soon as possible by mail (no faxes please) to PO Box A15, Naval PO, Nowra NSW 2540. Australia.

Finally, any profits raised through this project will go towards the Museum Development Fund which is currently aimed at commissioning our 150 seat theatre by the same anniversary date.

Your sincerely

Mike Lehan

Mike Lehan
Museum Director

Australian Naval Aviation Museum, located at HMAS ALBATROSS.

HISTORY OF THE RAN FLEET AIR ARM ORDER FORM

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Anzac Commissions

By Ross Gillett

Expectations were high, the weather was perfect and the new frigate ANZAC was sparkling.

This was the scene at Melbourne's Station Pier on Saturday, 18 May as the RAN welcomed into its ranks, the lead and name ship of the new Anzac class.

The new frigate ANZAC, prior to commissioning in May.

More than 600 official guests, inquisitive onlookers and a swarm of Melbourne media had gathered for the formal celebrations to begin. Guests of Honour included: the Minister for Defence; The Honourable Mr Ian McLachlan AO MP; the Leader of the Federal Opposition, Mr Kim Beazley MP and the frigate's Launching Lady, LTCOL Vivian Statham.

Navy was represented by numerous personnel including: the Chief of Naval Staff, VADM Rod Taylor; RADM Chris Oxenbould; MCAUST; RADM David Campbell, FONSC; and the Director of the Anzac Frigate Project, CDRE Richard Lamacraft.

The recently formed Anzac Ship Association turned out in strength, along with the Victorian Naval Band, local NRC units and of course, ANZAC's 164 strong crew.

The Commanding Officer, Captain Les Pataky, read the Commissioning Order before Naval Chaplains began the commissioning service and blessing of the new ship.

At exactly 1110 the ship became HMAS ANZAC with the Australian White Ensign and National Flag hoisted and the commissioning pennant broken. CAPT Pataky was piped aboard before the guard and ship's company boarded ANZAC to take possession of the ship.

Now an active Fleet member, ANZAC is scheduled to undertake voyages to Sydney, Brisbane and Mackay in mid year, followed by missile tests in Hawaiian waters and a visit to New Zealand in late 1996.

The current HMAS ANZAC is the third ship of the name to serve in the RAN. ANZAC (I), a destroyer leader, was active from 1920 to 1933 and ANZAC (II), a Battle class destroyer served from 1951 to 1974. The public of Melbourne came out in large numbers the next day for their first opportunity to inspect the ship. By the close of proceedings, over 5,000 people had toured the frigate from stem to stern, ably supported by an embarked Seahawk helicopter, the local Naval recruiters, a large video wall portraying the frigate in the Bass Strait and onboard photographic displays.

ANZAC in Port Phillip, early 1996.

An Interview with Captain Pataky

By Ross Gillett

1. The Royal Australian Navy's first ANZAC class frigate is now a member of the Fleet. What do the next few months have in store for the ship and her crew?

The next few months are going to be very busy indeed. The ship will have to go through the standard trials and operational workup activities with the added complication that there is no corporate knowledge or experience in manning, operating or fighting this class of ship.

It will be a learning experience for us all, but the biggest challenge will be establishing the procedures, routines and class orders for this new class of ship. This is our opportunity to get it right.

2. When will HMAS ANZAC undertake her first foreign deployment and initial exercises with other navies.

ANZAC will deploy to Hawaii towards the end of this year to conduct advanced missile firings on the Pacific Missile Range Facility. The ship will visit Lautoka in Fiji enroute and return to Australia via Auckland. During the first half of 1997 ANZAC is scheduled to conduct a major deployment to the Far East and will participate in a variety of multinational exercises with regional navies.

ANZAC, flying the Blue Ensign at the stern.

3. With a ship's crew of only 164, will this affect life onboard?

With such a small crew operating such an advanced warship, we have had to devise many innovative solutions to some of the operating issues which are not a problem in ships with more personnel to draw upon. The net result has been that everybody has to pitch in to make the ship work and this means that a great deal of cross training has occurred. An example of this is that there are very few seaman category sailors in the watch on deck and we now have S&S and electrical sailors as helmsmen and lookouts. Most major evolutions are literally whole ship evolutions which means that operating the ship is very much a team effort and everybody can see tangible results for their efforts. This is true multi skilling.

4. HMAS ANZAC will be the first ship in the RAN armed with Sea Sparrow missiles fired from the new vertical launcher. How does ANZAC rate as a fighting platform and when compared to the River class destroyer escorts she is replacing?

ANZAC is a very effective fighting platform. The Sea Sparrow missile is a very good point defence weapon and the combat system it is connected to is fully integrated and has performed very well during contractor trials. If ANZAC is ever sent in harm's way I think that other ships not fitted with Sea Sparrow will be very pleased to have this weapon in the force to provide protection against the sea skimming missile threat.

The ANZAC class is a quantum leap in technology from the river class destroyer escorts which served us so well over many years. The ship is similar in many characteristics such as sea keeping and ship handling but has a greater array of weapons and more importantly a fully integrated combat system which has the capability to expand as the strategic requirements change.

The crew march onboard their newly commissioned frigate.

5. The frigate is also the first RAN unit to be fitted with the new Mk 45 five inch gun, with one mount located before the bridge superstructure. Is the new weapon a major improvement over the current guns now in service?

The gun has been in service in other navies for some time and has proven to be a highly effective weapon. It is a marked improvement on the other five inch guns in service on the DDG's, primarily in that it is fully automatic and requires no manual input inside the gun itself. It has a slightly longer range than its predecessor and can sustain a more rapid rate of fire. It does not have the same rate of fire as the 76mm gun fitted to the FFG's but has a much greater range and fires a larger and therefore more powerful projectile.

6. HMAS ANZAC is to establish a close relationship with the city of Albany in Western Australia. What is the background of this decision?

During the ship's construction a number of submissions from various cities around the country were forwarded to the ANZAC project office in Canberra seeking to adopt HMAS ANZAC. Albany was selected because of its unique ANZAC connections. The convoys with the original ANZACs embarked formed at Albany prior to departing Albany, the Light Horse memorial is on Mount Clarence overlooking King George Sound and the first Dawn Service, which has become a national ANZAC Day tradition, was first conducted at the Light Horse memorial.

A very close relationship has been established with the city and the ship's company have already adopted a local charity there as the ship's official cause. I visited the city recently for their ANZAC Day ceremonies and the people there are very excited about having ANZAC as "their ship" and are very much looking forward to our inaugural visit next year.

HMAS ANZAC's main passageway, is named by the Mayor of Albany, in honour of the city's main thoroughfare, York Street.

Commissioning Day, HMAS ANZAC, was conducted at Station Pier, Port Melbourne on Saturday, 18 May.

7. As the new class of RAN frigates, how has the crew adjusted to the changes and new requirements?

The crew has adjusted very well to the demands of introducing a new class of warship into the Fleet. To a person they are all pleased to be selected as part of the commissioning crew and have approached the preparatory courses with enthusiasm and vigour.

Some members, primarily engineering sailors, have been undergoing ANZAC specific training for over two years and now are very keen to go to sea to put their newly acquired knowledge to use.

8. What is the schedule for the frigate to receive a Navy helicopter?

A Navy helicopter will be attached to the ship from July this year. The ship is programmed to operate a Seahawk helicopter for the first 12 months of operations.

9. What is the average age of the crew and has special training been undertaken?

The average age of the crew is 24, with the youngest sailor aged 19 and the oldest crew member aged 45. A great deal of special training has been undertaken to prepare the crew for service in ANZAC. Much of the equipment in the ship is new to the RAN and is not used by any other navy in our region. As a result we have all had to learn about it together. The contractor has conducted a plethora of courses over the last year to provide specialist training on the wide variety of weapons, sensors and operating systems. This has provided a base level of knowledge sufficient to operate the ship safely, however we are always learning new things about the ship and I suspect we will continue to do so for some time to come.

IN BRIEF

By Geoffrey Evans

HMA Submarine AE2

***By coincidence the writer became involved with members of the submarine community on the very day he completed a review of* Stealth at Sea, a History of the Submarine. *Comments on this very interesting paperback are contained in the book review section of this issue of* THE NAVY.**

The occasion of meeting with the submariners was the dedication of a young oak, grown from the acorn of a Gallipoli oak tree, at the Shrine of Remembrance in Melbourne in memory of AE2 which was lost in action in the Sea of Marmora on 30 April 1915 after forcing the Dardenelles on 25 April. Her crew was taken prisoner.

The plaque was unveiled by Mr Geoffrey Haggard, son of AE2's second-in-command, Commander Geoffrey Haggard DSC RN, and a floral tribute laid by his daughter, Mrs Jenny Smyth, wife of Commodore Dacre Smyth AO RAN (Rtd.).

A Bugler and a serving submariner from HMAS CERBERUS were among those attending the ceremony which took place on the lawn close to the south-west corner of the Shrine.

HMVS CERBERUS

Reference was made in the last issue of THE NAVY to plans for the restoration of the old Victorian Monitor, currently being used as a breakwater at Black Rock.

Talks continue but no decision has yet been made.

Malaya Emergency

At the time this issue goes to print (late May) no decision has been made concerning recognition for personnel serving in HMA ships involved in the Emergency (January - March 1996 issue of THE NAVY Page 10).

The number of authorities, organisations and individuals involved in what the writer would have thought to be a fairly straightforward exercise is quite impressive and includes:

- Three Commonwealth Ministries - defence, defence science and personnel, veterans' affairs - all with new ministers since the Federal election on 2 March.
- Ministry of Defence, London.
- The Naval Association of Australia and a number of 'ship' groups.
- The RSL.
- Numerous individuals including Vice Admiral Sir Richard Peek, KBE, CB, DSC, RAN (Rtd.) who made a strong case in favour of recognition on national television and others who's support has been expressed in newspaper articles and letters.

The writer hopes commonsense will prevail and the matter resolved before the next issue of THE NAVY goes to the printer.

Shipboard Fire

A fire on board a ship is always potentially dangerous and lessons can usually be learnt or re-learnt from the inquiry that normally follows. A fire in the engine room of a livestock carrier berthed in the port of Adelaide in September 1995 and investigated by the Marine Incident Investigating Unit of the Transport Department, was no exception.

MAWASHI AL GASSEEM, a 46,256 dwt livestock carrier owned and operated by a Saudi Arabian Company and trading under the flag of Saudi Arabia, arrived in the port of Adelaide in ballast on 7 September 1995 on a voyage from Jeddah to Napier, New Zealand, to load a cargo of sheep for the Middle East. The Adelaide call was to take on water and fodder.

The MAWASHI AL GASSEEM carried a quite large crew - 61 including the Master, and 4 deck officers, a radio officer and an engine room complement of 16. The Master, Chief Officer and Chief Engineer were Indian nationals and the remaining officers and crew were Filipino nationals.

A number of personnel changes were made while the ship was in Adelaide; these included a new Chief Officer and replacements for 3 engine room staff, one of whom was an oiler who stood watch shortly after arriving from the Philippines and who was on duty again when the fire occurred the following morning. The oiler's duties included charge of an oil-fired boiler used to provide steam for deck machinery and domestic purposes while the ship was in harbour. The boiler was the cause of the emergency.

The trouble occurred on the morning of 9 September when a request was made for steam on deck; the oiler, unfamiliar with the boiler sought the assistance of the 4th Engineer who soon after arriving noted the low water level in the boiler and shut of the fuel supply to the boiler. 5 to 10 minutes later however in the words of the marine investigating unit's report " the 4th Engineer saw what he believed was still a fire in the furnace, but was, most probably the boiler internals glowing white hot".

In the event, after the boiler casing began to glow red and give off smoke, the alarm was raised and attempts made to cool the boiler with fire extinguishers; this was unsuccessful and at the direction of the Master water hoses were rigged and used more effectively (the Master was subsequently criticised for directing operations in the engine room and not from the bridge). In the meantime the Chief Officer had gone ashore to call the fire brigade from a public telephone as there was no telephone on board. The brigade arrived with commendable speed and assisted the crew until the boiler was no longer a danger. The boiler was badly damaged and replaced before the ship left Adelaide.

The Marine Incidents Inspection Unit concluded that the immediate cause of the trouble was the failure of one or more boiler tubes resulting in loss of water while the burner was still firing. Age, poor maintenance and operating procedures were among factors leading to the tube failure, together with lack of knowledge and experience on the part of personnel charged with maintaining and operating steam plant.

It would seem from reading the report that there were other departures from prescribed procedures, both international and local, while communication difficulties that often accompany ships companies lacking a common language were not helpful in running a 'tight' ship.

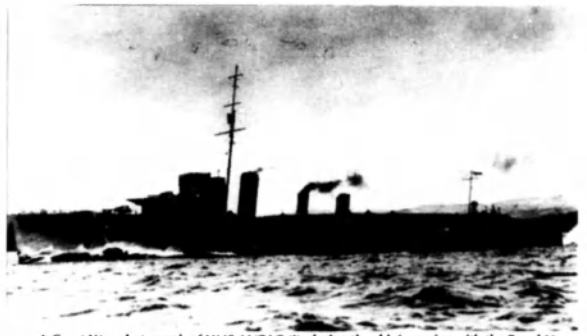
No doubt the report will be widely read by ship owners and seagoing personnel alike.

ANZAC Through Time

On a blustery spring day in September 1985, the first of a new generation of frigates was launched for the Royal Australian Navy.

The class of ships, designed to carry the Royal Australian Navy forward into the next century, bears the honoured name of ANZAC. The lead ship commemorates the Anzac tradition, forged in the crucible of Gallipoli and tempered in joint campaigns through the First and Second World Wars, the Korean and Vietnam conflicts and the Malayan Emergency. Today the Australian and New Zealand Navies are close partners in numerous exercises, providing disaster relief throughout the South Pacific and in making a substantial contribution to regional security.

Two earlier warships have carried the name ANZAC in the Royal Australian Navy.



A Great War photograph of HMS ANZAC (I), during the ship's service with the Royal Navy.

ANZAC I

The first ANZAC was completed for service with the Royal Navy on 24 April, 1917, as a unit of the Marksman class.

ANZAC was the only three-funnelled destroyer to serve in the RAN and the first Australian warship to mount superfiring guns in front of the bridge structure. Other guns were sited on a bandstand between the second and third funnels and on the quarterdeck. Pom-poms were carried aft and on a small platform abaft the larger funnel.

ANZAC was transferred from Britain to the Royal Australian Navy in March 1919. She arrived in Sydney on 29 April, 1920, after sailing from Plymouth on 26 February.

Most of the ship's commissions were spent in east Australian coastal waters, with short visits to New Guinea and New Britain in 1924, 1926, and 1930. Designed to act as a flotilla leader, she was the only destroyer kept in commission during the Great Depression, but was paid off on 30 July, 1933.

Sold for £1,800 on 8 August 1935, ANZAC was sunk off Sydney on 7 May, 1936, after being used as a target ship by other RAN vessels.

HMAS ANZAC (I) , after her transfer to the RAN.

ANZAC II
The Destroyer

The second ship of the name and the first major warship constructed in Australia after the Second World War, ANZAC was ordered in 1946, as the basis of the post-war destroyer fleet.

Following trials and exercises in Australian waters, ANZAC left Sydney for Japan on 30 July, 1951, to join United Nations Forces in the Korean War. ANZAC's initial task was to screen the US escort carrier SICILY off the Korean west coast. On 6 September, she opened fire for the first time at communist targets in the area around Haiju. The ship finished her first tour of duty on 17 October, when she returned to Fremantle.

ANZAC underwent refit at Williamstown until 14 December and spent the period up to May, 1952, exercising in home waters. She then teamed with the heavy cruiser AUSTRALIA for visits to New Guinea, New Britain and the Solomon Islands before undergoing a pre-tour refit at Williamstown during June and July.

ANZAC sailed from Sydney on 1 September, bound for Korea and her second tour of service. On the 28th she began coastal patrol duties along the west coast. Over the following months she operated with the Royal Navy aircraft carrier OCEAN, performing gunnery support actions in below-freezing conditions. Her second tour ended on 13 June, 1953, returning to Sydney on 3 July, after an absence of 305 days.

ANZAC began another refit on 12 November, 1953, after exercising with the aircraft carriers SYDNEY and VENGEANCE. She escorted the Royal Yacht GOTHIC to several north Queensland ports during the Queen's visit in early 1954.

Exercises in local waters and around New Guinea kept the destroyer busy in the first half of 1954. In October the ship participated in exercises around Manus Inland with units of the British Fleet.

In early 1955, she underwent refit in Sydney. In April, ANZAC visited New Caledonia and on 17 May, commenced exercises with ARUNTA, QUADRANT, TOBRUK and WARRAMUNGA. On 2 July ANZAC sailed from Singapore for Sydney. On 16 November, she made for the Strategic Reserve in Singapore, returning to Sydney in November 1956 after visiting Japan and Korea. ANZAC

HMAS ANZAC (I) in drydock at Cockatoo Island.

	ANZAC I	ANZAC II	ANZAC III
Length	325 ft (99m)	379 ft (115ml	118 m
Beam	31.1 ft (9.4m)	41 ft (12.5m)	14.8 m
Draught	12.1 ft (3.7m)	15.9 ft (4.8m)	4.4 m
Displacement (Standard)	1310 tons	2325 tons (1330 tonnes)	3600 tonnes (2362 tonnes)
Complement	122	290	164
Machinery	Brown Curtis steam turbines 3 screws	Parsons geared steam turbines 2 screws	GE gas turbine MTU desel's 2 screws
Speed	34 knots	31 knots	27 knots
Range	2500nm @ 15 knots	2980nm @ 20 knots	6000nm @ 18 knots
Armament	4 x 4 inch guns 2 x two pdr. guns 4 x Lewis MG 4 x 21 inch Anti-ship Torpedo Tubes	4 x 4.5 inch guns 12 x 40mm guns 10 x 21 inch Anti-ship Torpedo Tubes 1 x Squid ASW Depth Charge Mortar	1 x 5 inch 8 x Sea Sparrow Surface / Air Missiles 6 x 18 inch ASW Torpedo Tubes 1 Helicopter May be fitted with 8 Harpoon Surface to Surface Missiles and 1 x Phalanx Close In Weapon System for missile defence

proceeded to Tasmania in early 1957 and in April, returned to Singapore. April and May, 1960, saw the ship visiting Noumea, the Solomons, and Papua New Guinea.

The Training Ship

ANZAC continued in service as a front-line unit until March 1961, when she embarked midshipmen for her first training cruise. In September 1962, ANZAC replaced SWAN as a Fleet training ship and in 1966, a classroom replaced one of the ship's two twin 4.5 inch gun mountings. Over the ensuing years much of the original armament was removed and by 1966, ANZAC was armed with only two 4.5 inch guns and four 40 millimetre guns. In addition to the classroom forward another smaller structure was fitted atop the after deckhouse in place of the two twin 40 millimetre guns.

Launch of ANZAC (III)

HMAS ANZAC (II), fully armed as a frontline destroyer in 1955.

ANZAC visited Singapore in September 1962 and later sailed to Papua New Guinea in October. In February and March, 1963 she acted as escort for the Royal Yacht BRITANNIA throughout the Royal Tour. In the course of her duty, ANZAC circumnavigated Australia.

The training of cadet midshipmen occupied the majority of her life after 1963. In May 1964, she hosted the Governor-General Viscount de Lisle, on a cruise around New Guinea waters. In August, 1964, she visited New Zealand.

In June, 1968, ANZAC escorted the troop carrier SYDNEY to Vietnam and in the following September visited Tahiti, Apia, Western Samoa, and New Zealand.

HMAS ANZAC (II), after conversion to the role of training ship. Photograph taken in November 1969. (John Mortimer)

End of the line! The Battle class destroyer is towed from Sydney for scrapping.

During 1970, the ship participated in the Captain Cook celebrations at Possession Island, Queensland the site of Captain Cook's last departure from Australian shores. New Zealand was again visited in September and October. In March, 1972, ANZAC acted as command ship for exercise "Planti Manua," a large patrol-boat exercise (10 boats) held in northern Australian waters.

In January, 1974, ANZAC visited New Zealand and later Fiji, returning to Sydney on 11 August, flying her paying-off pendant. She was sold on 24 November, 1975, to the Hifirm Corporation Ltd, of Hong Kong, for $41,780, and left Sydney under tow on 30 December, 1975.

ANZAC III

The current ANZAC commissioned into the RAN on 18 May, 1996, with the second ship, New Zealand's HMNZS TE KAHA, to follow one year later. ARUNTA, the third of the class and the second of the Australian ship will commission in November 1997 with the other ships commissioning at yearly intervals. The eighth and final Anzac class frigate, PERTH, is expected to commission in November 2004.

Australia's Patrol Pocket Battleship

By Mark Schweikert

OPC, JPV or OPV. What is this 'alphabet Corvette' that we are going to spend our money on and what can we expect for our dollar?

Much has been written on the economic and regional advantages of the Joint Patrol Vessel (JPV) or Offshore Patrol Combatant (OPC) or Offshore Patrol Vessel (OPV), which ever terminology you subscribe to, but not on the ship itself. On the surface it would appear that the Royal Australian Navy (RAN) is relying on the Royal Malaysian Navy's (RMN) tendering process to choose, thus validating, the Transfield design intended to replace the Fremantles. This would justify the theory of regional commonality and co-operation, which I support, but it would be nice to know more about the ship before we commit part of our small defence budget.

In regard to terminology the JPV is the ship at the centre of the RAN and RMN's joint project. The OPC is the combatant for the RAN and an OPV defines any ship designed for the role of offshore patrolling.

The terminology, OPV, is a new and interesting one. These vessels could be more accurately described as Corvettes. The standard NATO agreement 11 of 1966 (STANAG 11/66) defines a Corvette as a "small escort in size range 60 to 100 metres," our OPC is 80 metres long. An OPV is designed to be less capable than a Corvette. Corvette's were generally used for single roles such as Anti Submarine Warfare (ASW) with anti-ship and anti-air handled by Frigates and Destroyers. But with miniaturisation, increased power outputs from propulsion units and automation, an OPV could substitute for a Corvette which could, by applying the same theory, substitute for a Frigate. Finally OPV's and Corvettes can and do carry helicopters for ASW, over the horizon targeting, search and rescue and anti-shipping. This is something never envisaged for these ships and which enhances their emerging capabilities.

Little has been released on the JPV or OPC design as Transfield is justifiably concerned about releasing information whilst in competition with other international shipyards. But what has been released is the subject of this article. I do not intend to study the other competitors designs as the Australian product is the only one being considered for the RAN at this stage.

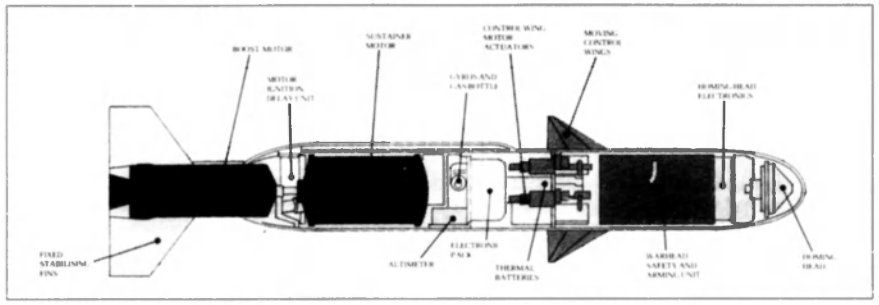
There are however some interesting consequences and options for the RAN if Malaysia does not choose the JPV. The first is to take the Transfield product without calling for tenders. The second is to call for tenders in an open OPV contract competition and the third is to use the Transfield design but tender the building contract.

If the latter two are chosen then our replacement of the Fremantles will be delayed and the Fremantles will require an extra refit or retire without replacement. Which ever, if the JPV is not selected, we will either be spending money or losing capability. The Fremantles are not getting any younger and doubts about continual hull integrity are starting to emerge.

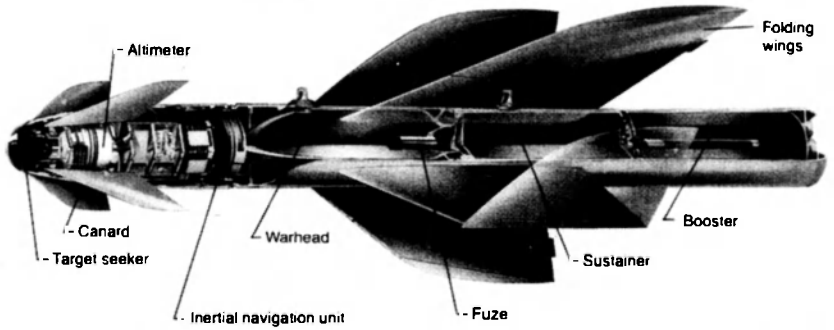
Actual details regarding weapons, design, propulsion and electronics for the ship were never specified by the RAN but rather that the design meet a performance based criteria.

The 57mm gun is one of the best anti-missile defence weapons on the market today. It fires 220 rounds per minute at air or surface targets changing ammunition automatically in a fraction of a second. The gun has also been designed with stealth in mind evidenced by the angled and rounded sides of the turret.

The Kaman SH-2G Sea Sprite helicopter is one of the contenders for the ANZAC/OPC helicopter contract.



The Sea Skua missile has a range of 15km and a 20kg warhead. It is guided to the target by the helicopters radar. The Lynx helicopter carries four.



The AGM-119B Penguin missile has a range of 34km and a 120kg warhead. It is a fire and forget missile using an Infra Red sensor and can be fired from a Sea Hawk helicopter.

DESIGN

During the design and development of the OPC the RAN had an ongoing involvement to ensure it met with its standards and able to perform in the waters around the region. Extensive tank testing undertaken by the Maritime Research Institute of the Netherlands found the design to have excellent sea keeping qualities as well as meeting the Det Noske Veritas classification rules for high speed with zero restrictions.

The ship weighs between 1300-1500 tonnes, is 81.5 metres long and 12.05 metres in the beam with accommodation up to 100.

The hull is a round bilge, stiffened longitudinally and supported by transverse web frames. The hull and superstructure are of welded steel construction using D36 grade high tensile steel. The ship has also been designed with stealth in mind to reduced acoustic and radar reflective signatures.

PROPULSION

Propulsion of the vessel is achieved by four diesel engines in two separate watertight compartments for a total power output of 16,000 kilowatts. The four diesels are connected to two controllable pitch propellers via two reverse reduction gearboxes to produce a top speed of 30 knots. Advantages of using diesels are reliability and cruising range. In this case the OPC has a range of 6000 nautical miles at 12 knots.

Other propulsion packages available to the customer include two diesels, four diesels (CODOD) or two diesels and two gas turbines (CODOG). On gas turbines the ship's power output rises to 24,000 kilowatts.

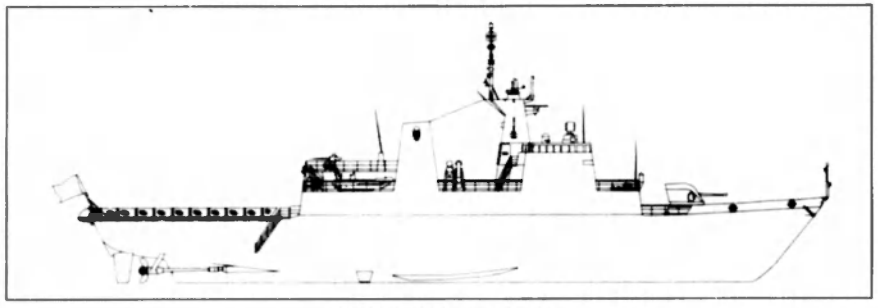
Electrical power is supplied by four generators in two compartments with each one being able to provide peacetime cruising load and any two providing peak requirements.

This last point was found to be essential in ship combat survival. During the Falklands campaign one of the problems of fighting the fires in HMS Sheffield was the lack of generator power and availability.

SURVIVABILITY

One of the least recognised survivability features of this ship is its size. Originally the RAN had decided on a smaller ship in the area of 50 metres but the RMN required a larger vessel. The larger a ship, the more damage it can absorb as missiles and projectiles only destroy a segment at a time, not all of it.

Other survivability features include: independent vertically integrated



(BELOW): A top side view of the JPV.

ventilation within each watertight sub-division and independent fire fighting zones which contain fire by virtue of the ship's design. The design also takes in to account the ability to withstand flooding in two adjacent compartments with retention of at least 50% power generation.

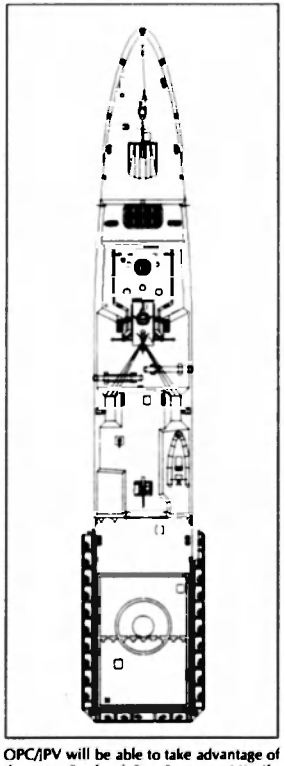
SEA KEEPING

As mentioned before the OPC has already passed a number of tests of sea keeping. The design allows the OPC/IPV to operate in and around the waters of our region, being the Area of Operations for the RAN and RMN. It is designed for unrestricted operations including all weapons, sensors and other equipment (including helicopter operations) in sea state 5 conditions.

WEAPONS AND ELECTRONICS

The weapons and electronics currently depicted on the OPC/IPV are those chosen by Transfield and generally accepted as suitable. Mounted on the foc'sle in 'A' position is a Bofors 57mm gun. This gun is considered one of the best Close In Weapon Systems (CIWS) available and can be used in any role. It fires 220 rounds per minute at an air, surface or sea skimming target using different types of ammunition for each target. The gun mount is un-manned and can change ammunition types automatically in a split second, i.e. HE for surface targets or HE-Proximity fused pre-fragmented rounds for an airborne threat. The gun receives fire control data from the fire control radar but can also take fire control information from the optronic sensor/director. The gun mount itself is also designed with 'stealth' in mind with the turret sides being angled and the edges rounded.

Mounted behind the 57mm gun in 'B' position is an eight cell Mk-41 Vertical Launch System (VLS) for eight Sea Sparrow anti-aircraft missiles. These missiles can also be used against anti-ship missiles out to a range of 14 km. The



OPC/IPV will be able to take advantage of the new Evolved Sea Sparrow Missile (ESSM) which allows four missiles per vertical launch tube thus increasing the Sea Sparrow capacity to 32.

On top of the bridge is a fire control radar for the gun and Sea Sparrow missiles. A navigation radar and air and surface search radar are located behind on an enclosed main mast. The latter may turn out to be a 3D radar but that is yet to be decided. A 3D radar would certainly improve the ships combat capability and thus survivability.

The ship will be fitted with four Harpoon Surface to Surface Missiles (SSM) mounted amidships with a range in excess of 130 km.

It will have space and weight allowances for a towed array sonar but as ASW is not a concern for both navies at this stage (but will no doubt be in the future) it will not be fitted.

Above the helicopter hanger is a Rigid Inflatable Boat (RIB) and a 30 mm gun.

The helicopter for the OPC is yet to be decided but currently the contest is between the Westland Lynx Mk 8 and the Kaman SH-2G Sea Sprite. The helicopter is expected to carry Air to Surface Missiles (ASM), either the AGM-65 Maverick, the Sea Skua, the AS-15TT (although with Eurocopter no longer in the competition the missile may to be withdrawn) or the AGM-119 Penguin ASM.

The hanger facilities onboard the OPC/IPV are designed for an intermediate sized helicopter although the landing pad will be capable of accommodating a Sea King helicopter. The helicopter haul down and recovery system is to be completely automated and require no crew assistance until in the hanger.

Chaff launchers, an ESM suite and Nulka off board ECM decoys are all part of the ship's design and when coupled with its stealth features, Sea Sparrow missiles and 57 mm gun will certainly provide a capable survivable small warship.

The final number of OPC/IPVs to be acquired for the RAN has not been decided. And although their capabilities are far greater than the Fremantles they are replacing, thus requiring less to do the same job, it would be a massive boost to coastal and coastal convoy protection to have 15 or possibly even more.

Tomahawk for the ADF?

By Navy Leaguer

Now that the United States is prepared to sell the Hughes Tomahawk submarine launched high explosive tipped precision guided cruise missile to Britain for their submarines, there is reason to believe that these missiles would be available to Australia for our submarines and surface ships.

From a position unknown to the defenders, submarines can position themselves many hundreds of miles from a high value shore target and launch Tomahawk in surgical strike operations against vital hostile defence installations.

Although Tomahawk can also be launched from surface warships ,it is the long range and inherent covert nature of submarines that is attractive to the Australian Defence Force.

Although they would require integration with the ships' combat systems, the mark 41 vertical missile launching systems in the Anzac class frigates are basically capable of launching Tomahawk.

The weapons handling systems in the Collins class submarines are designed to handle Tomahawk. Again, integration into the submarines' combat systems would be required.

Indications are that the cost of integration and of the missiles themselves would not be high by major defence project standards.

Outstanding questions include whether the six Collins class submarines would be enough to undertake their current assigned roles and to provide Australia's strategic strike capability in succession to the RAAF's F111s. An extra two submarines could be provided by ordering two further Collins class boats.

In recent months, the general media have given increasing publicity to the possibility of the Government taking up their contractual option with Australian Submarine Corporation to build two further Collins class submarines.

The arguments in favour of doing this are:

- ASC needs work to keep its capabilities available for the RAN;
- An additional order would create more employment in South Australia (and other areas which would be major suppliers) and there would be multiplier effects through the economy;
- The Collins class submarine could be used as a launch vehicle for Australia's strategic strike capability for which the Tomahawk missile is a prime candidate.
- Two additional submarines would increase the Australian Defence Force's general warfare capabilities.

The arguments against the proposal are:

- Diverting funds to additional submarines would require cancellation of other defence equipment projects and distort the balanced force;
- It would not be possible to obtain crews for the additional submarines;
- The Defence Budget is for the defence of Australia and not for creating employment. If the Defence Budget is to be used for creating employment, such schemes should receive additional funding.

The negative arguments are strong until the addition of the strategic strike capability is considered.

At present the ADF's major long range strategic strike capability is provided by the RAAF's and F111Cs and F111Gs, armed with guided bombs and precision guided missiles.

These aircraft are due to be phased out during the second decade of the next century. No new generation of long range strike aircraft, of a size suitable for the ADF, is currently in development by western nations. In other words, Australia cannot replace the F111s with new aircraft of similar range.

For range is crucial for a strategic strike capability. With the old World War 11 srategic bombing capability in mind, the F111s were ordered in the 1960s. Then, Australia's relations with Indonesia were close to limited hostilities. Today, our relations with Indonesia are good. If it is needed, and ADF strategic strike capability would require the range to operate much further away than Indonesia, the other ASEAN powers, and our close northern neighbours.

That extra distance, with its overflying requirements, limits the suitability of aircraft per se for the ADF's long range strategic strike capability. This applies both to the strike aircraft and refuelling aircraft.

For the additional range requires a substantial air to air refuelling capability for the F111s. With their much shorter range, the air to air requirement for the F/A-18s (and their successors) would be very substantial indeed - probably prohibitively so.

A further point against aircraft is the overt nature, and consequent easy location, of their threat of attack. A target area's defences would know the direction, speed and range of the threatening aircraft.

The arguments in favour of aircraft, if a suitable type were to become available. are the weight of ordnance and speed of turnaround. A number of aircraft could deliver more high explosive on the target than one submarine. Secondly, the aircraft could return to base and rearm in a much shorter time (hours compared with days) than a submarine armed with Tomahawk.

Although these are undoubtedly factors, in these days of very high accuracy precision guided weapons such as Tomahawk, sheer weight of high explosive is of less significance than it was when spreads of bombs were required to improve the chances of one bomb hitting the target.

The points in favour of two more submarines and Tomahawk are:

- Submarine launched Tomahawk would provide a covert strategic strike weapon at much longer range than the overt F111s;
- The Tomahawk/submarine option would be much cheaper than any available aircraft and weapons to succed the F111s;
- Submarine launched Tomahawk would provide a better strategic strike capability than the F111s.

The points against submarine launched Tomahawk are the difficulty of getting sufficient crews for additional submarines and the lower weight of high explosive deliverable by the Tomahawk/submarine option.

Just as the RAN has difficulty raising sufficient crews for submarines, so the RAAF's difficulties in recruiting and retaining air crew are well known.

It can be argued that the conclusive factor is that there is no aircraft type to succeed the F111s. Tomahawk is the only long range strategic strike option available for Australia.

Boom Defence in Fremantle

From Vic Jeffery, Navy Public Affairs Officer (WA)

The US Navy submarine depot ship USS CLYTIE, passes through the Port of Fremantle's boom defence in 1945.

The Port of Fremantle's inner harbour was protected by a boom defence net during World War Two. The boom defence net was erected between the North and South Moles at the entrance to the harbour. The first of its kind in Australia, it was designed to stop midget submarines or fast patrol craft entering the harbour and was a protection against torpedo attack.

Site of the Fremantle boom defence net seen from the North Mole in 1996. Associated concrete ramps are visible on the South Mole.

Electrically - operated winches opened and closed the gate - a steel net supported by metal drums. When open the net formed a large 'V' against the North Mole and when closed, the cable was secured to a chain mooring to take the strain off the winches.

A bustling wartime port, and also the largest Allied submarine base in the southern hemisphere between 1942-45, Fremantle presented as an attractive target.

Rumours have persisted about an attempted Japanese midget submarine attack on the port, but there is no documentary evidence to support this claim.

During the war many famous ships passed through the boom and a number of US Navy submarines made there last patrols from the area.

Postwar the boom defence net, chains, and associated equipment was placed in reserve and later removed from the inner harbour.

Today at least one building, crumbling concrete ramps and blocks, fittings, and rusting pulleys remain, unknown by many and remembered by few.

A massive boom defence net was also erected across Cockburn Sound between 1942-44 ranging from Woodman Point on the Mainland to the northern end of Garden Island.

Financed by the British Admiralty after the fall of Singapore in 1942, it was to be a secure anchorage for the British Eastern Fleet.

A tubular steel hurdle net was erected between the southern section of Garden Island and Cape Peron.

This mammoth task went on around the clock, 365 days a year for the two years it took to construct. By then the war had crept closer to the Japanese mainland and it was of little strategic value.

HMAS KARANGI in Fremantle.

Working with a boom, HMAS KARANGI.

The Secondhand Naval Ship Market

By Mike James

HMS BATTLEAXE, seen before her purchase by Brazil as the RADEMAKER.

The fall of the Berlin Wall in 1989 has rightly been said to be one of those pivotal moments in history, when an empire has fallen and the face of the world has been re-written. The globe's two superpowers had glared at each other across Berlin's Checkpoint Charlie for more than forty years, each backed by an array of allies, nervously fingering their stockpiles of nuclear weapons and uneasily eying the opponents similar arsenal of destruction. Whilst for the general populace and many observers, the stand-off across the border between the divided Germany's seemed to symbolise the Cold War and the possibility of conflict, most experts pointed to the worlds oceans as the most likely source of conflict. Far out to sea, away from the ubiquitous gaze of the camera and isolated from possible civilian casualties, was where many respected analysts suggested would be the most likely venue for 'tests of strength', 'display's of resolve' and even 'limited warfare'.

Out of sight of the worlds media, the navies of the East and West played their dangerous games of hide and seek, threat and counterthreat across the globe.

The Knox class frigate USS COOK, now the Taiwanese Navy's HAE YANG.

While the Cuban Confrontation and the naval manoeuvring in the Mediterranean during the Arab-Israeli Wars were the most publicised of these encounters, the constant observation, evaluation and harassment of the "other sides" forces continued unabated. Even less visible were the silent probing missions undertaken by submarines of all navies, often inside the territorial waters or even the harbours, of unfriendly nations. Navies were built to support the national interest, with ever more new and powerful ships and submarines, aircraft and weaponry constantly being produced to prowl the worlds oceans, the most potent collection of firepower ever to have sailed the seas.

Today, the navies of Russia and the United States, together with many of their European allies, are a shadow of their former selves. The effects of what is often euphemistically called 'downsizing' have gutted the inventories of many of the worlds strongest navies. The cuts have struck deep at the former Soviet Union, but the West has not been spared. Millions of tonnes of warships, crafted at great expense and containing the best that their builders and nations could supply, that once proudly flew their nations colours, now dolefully join the procession to the breakers yards to be broken down for their scrap metal. Many others have found new homes around the world, flying a diverse range of flags.

An indication of the scope of these cuts can be gathered by the fact that in the years since the fall of the Berlin Wall, the United States Navy has decommissioned, sold, transferred or otherwise disposed of more ships than the order of battle for any other navy, with the singular exception of the Russians (who have their own problems), more than 2.2 million tons of navy-grey metal. Including the USNs decommissioned submarines adds another 300 thousand tonnes. When taken together with reductions in the Russian, Navy, the Marine Nationale of France, the Royal Navy and their Warsaw Pact and Nato allies, the total far exceeds 3 million tonnes. So where have all these ships gone?

HMS AMAZON, now the Pakistani BABUR, was one of six sister ships purchased

Not all of these ships have ended their lives as razor blades, a large number have found their way into the order of battle of smaller navies, providing a windfall to these nations and introducing technology and capabilities that were formerly out of reach of many third world countries. The United States has been in the forefront of this trend, making available a wide range of vessels to friendly nations, but the United Kingdom, France and others have also been forced to shed tonnage and have pursued the same policy. The following is a short overview of these transfers.

The United States Navy has, in the years since 1989, divested itself of six carriers, four battleships, four nuclear and eighteen conventional cruisers, thirty-three destroyers, more than fifty frigates, thirty-five amphibious vessels, six hydrofoil missile boats, twenty-one minesweepers, four destroyer tenders, four ammunition ships, six combat stores ships, three replenishment oilers and two repair ships, in addition to a vast array of smaller vessels such as tugs. It has also decommissioned and scrapped twenty-seven ballistic missile and thirty-two attack submarines of various classes. Of these retired vessels, it has been the destroyers, frigates and amphibious ships that have proven most attractive to new owners.

Many of the deleted destroyers have been scrapped, however a number have been transferred, with Greece receiving four of the CHARLES F ADAMS class destroyers, together with a fifth to act as a source of spares. Another ADAMS class DDG, the former USS GOLDSBOROUGH, was purchased by the Royal Australian Navy for $3.3 million dollars to provide DDG spares and training equipment for technicians, being towed to Sydney for stripping before being sold for scrap. The only reason that more of these capable ships were not taken up by foreign navies was their large crew complement (360), complex steam plant, and age (the ADAMS class were commissioned from 1960-64, while the COONTZ class were even older, entering service from 1959 to 1961).

The KNOX class specialised anti-submarine escort frigates have proven to be very popular with navies looking to improve their capabilities in this area at modest cost. The USN operated forty-six of the class, commissioned between 1969 and 1974, but budget cuts saw them withdrawn from active service, first to the Naval Reserve Forces, and then retired completely. Given their relatively short careers in the USN they rapidly found homes in a number of allied navies with Turkey the most enthusiastic recipient, operating eight of the class with a further vessel acquired for spares. Other operators include Greece (three), Thailand (two), Egypt (two) and Taiwan (six with an option to take a further six). Brazil was originally considering acquiring several KNOX class to supplement the four ex-USN GARCIA class frigates acquired in 1989-90 but eventually chose to acquire surplus ex-UK frigates. Four other GARCIA class, together with four BROOKE class, were leased to Pakistan in 1989, however political pressure from the United States over Pakistan's nuclear weapons programme saw the ships returned at the end of the lease in 1992.

Several countries that were originally considering acquiring KNOX class have instead chosen ex-USN OLIVER HAZARD PERRY class FFG's. Fifty-one multi-purpose frigates were commissioned from 1977 to 1989, with the bulk commissioning between 1982-84. This class is particularly attractive to smaller navies as it incorporates an area anti-aircraft capability, 36 Standard missiles, capable out to 45 km. In addition to the US Navy, ships of this class were built for the navies of Australia (six) and Spain (six) with Taiwan building seven more. Currently, the United Arab Emirates, Greece, Oman and Bahrain each hope to acquire at least one ship while Egypt will receive two and Turkey three. Several other navies have expressed interest in acquiring ships of this class if they should become available. Meanwhile the Mexican Navy snapped up the two BRONSTEIN class frigates for a song to bolster its aging surface fleet.

Another class that has proven popular upon its withdrawal from US service has been the NEWPORT class tank landing ships. Twenty ships were commissioned between 1969 and 1972, with three remaining in active service today, with another four in reserve. Of the remainder, one was leased to Brazil, another two leased to Spain, one transferred to Morocco, one was sold to Malaysia and two more sold to Australia for conversion to training and helicopter support ships (HMAS KANIMBLA and MANOORA). Venezuela, Taiwan, Chile and Argentina have all expressed an interest in acquiring some of the remaining six ships.

The United Kingdom has also followed the United States lead and has reduced the size of the Royal Navy significantly. Included in the deletions were two destroyers, twenty-five frigates, twenty-five mine warfare vessels, one antarctic patrol ship, six patrol craft, two survey ships, four tankers and a replenishment ship. The submarine arm has been similarly hit, with four ballistic missile and seven nuclear attack submarines paying off. It has also seen the end of conventional submarine operations with the deletion of fifteen submarines including the four brand new UPHOLDER class.

While the UPHOLDER class remain on offer for sale to Canada, with Chile also showing an interest, two of the OBERON class submarines have been purchased by the Royal Canadian Navy to provide spares and alongside training to support Canada's three operational OBERON class subs. Of the surface fleet, a number

Indonesia's ARUN, formerly HMS GREEN ROVER, seen in Sydney in 1993.

HMAS KANIMBLA, formerly the USS SAGINAW. Sisters serve in the navies of Brazil, Spain, Morocco, Malaysia and the U.S.

have been snapped up at bargain basement prices. Brazil purchased four of the Type 22 BROADSWORD class frigates in preference to KNOX class frigates from the US while all six of the AMAZON class frigates were purchased by Pakistan, replacing the returned ex-USN BROOKE and GARCIA class frigates in 1992. Two countries have procured LEANDER class frigates, with Chile acquiring two in 1990 and 1992, while India is purchasing ex-HMS ANDROMEDA for use as a training ship.

The RIVER class minesweepers have proved popular with Brazil acquiring three RIVER class in 1995 which have since had their minesweeping gear removed, it being declared superfluous in their new role as large buoy tenders. Bangladesh also received four RIVER class in 1994 for use as minesweepers and patrol craft, together with an ISLAND class patrol vessel, currently used as a training ship. Also taking advantage of the chance to acquire cheap replacement vessels was the Lebanon which purchased five ATTACKER class and two TRACKER class coastal patrol boats in 1993-94 to supplement their small patrol boat fleet. The vessels of the Royal Fleet

The French COMMANDANTE BOURDAIS before her transfer of Uruguay.

Auxiliary have also proven attractive to new owners. The name ship of the APPLELEAF class of support tankers was sold to the RAN in 1990 and is now operational as HMAS WESTRALIA. Two of the ROVER class small tankers have also been acquired by smaller navies, with one each going to Portugal and Indonesia while Singapore has acquired the former SIR LANCELOT, a logistic landing ship.

The United States and United Kingdom are not the only navies undergoing "downsizing". Many of the European navies have shed tonnage that has found new homes around the world. Perhaps the best known, and certainly the largest of these transfers has been the thirty-nine ships of the former East German Navy purchased by Indonesia. This comprised sixteen PARCHIM class corvettes, twelve FROSCH I mechanised landing ships, nine KONDOR class coastal minesweepers and two FROSCH II mechanised landing ships currently being utilised as support ships, in total, more than forty thousand tonnes of warships.

Other navies to have benefited from the downsizing largesse include Uruguay which has acquired three COMMANDANTE RIVIERE class frigates courtesy of the French Navy, the Turkish Navy which received an intelligence collection ship, two RHEIN class depot ships used as training ships, the Greek Navy which acquired three Dutch KORTENAER class frigates together with five type 240 class corvettes, four type 148 missile-armed fast attack craft, a small survey ship, two LUNEBERG class support ships, eleven mechanised landing craft and six utility landing craft, all from Germany.

Pakistan purchased the former Netherlands Navy replenishment ship POOLSTER and while Peru has purchased a DOKKUM class minesweeper from the Netherlands for use as a survey ship.

Perhaps the most interesting case of "downsizing", albeit forced, has been the Iraqi navy. A number of vessels were under construction in Italy when the Iran-Iraq war commenced. Iraq was not willing to try and bring the ships through the Persian Gulf during the war but wars end saw Iraq make slow progress towards completing the ships (and paying the builders, Fincanteri) and bringing them home. Unfortunately Iraq's invasion of neighbouring Kuwait put paid to that idea, as the ships were impounded. The tanker AGNADEEN had actually made it as far as Alexandria in Egypt before being impounded, while four LUPO class frigates and six ASSAD class corvettes remained in Italy. Eventually, to settle the mounting debt to Fincanteri, the Italian Navy took all four LUPO class into service after extensive modifications to bring them up to an acceptable standard, while two of the ASSAD class have been purchased by Malaysia and another two by Morocco who have an option on the last two. Needless to say, Iraq protested loudly but when asked to pay their debts, were strangely silent.

The recent transfers of tonnage from the large to small navies is of a scale not seen since the end of the Second World War. Many of those earlier ships are still in service across the globe, some forty years later. Give these examples of longevity, it may not be surprising to find KNOX class frigates or NEWPORT class landing ships soldiering on under their new ensigns well into the twenty first century.

First DDG 51 Visits

USS JOHN S. McCAIN arriving Fremantle. (LSPH Peter Lewis)

One of the United States Navy's most modern ships, USS JOHN S. McCAIN arrived in Newcastle on Thursday, 18 April at the start of a eight day goodwill visit. The 8,422 tonne Arleigh Burke Class guided missile destroyer entered service in July 1994. She was the first ship of her class to visit Australia.

Commanded by Commander Michael C. Vitale and crewed by more than 300 officers and sailors, JOHN S. McCAIN was on a six month routine deployment, before returning to her Pearl Harbour, Hawaii, homeport in May. The destroyer recently left the Arabian Gulf where she was involved in the enforcement of United Nations sanctions against Iraq.

Prior to Newcastle, the ship called at Fremantle in Western Australia.

Trial of Submarine Escape and Rescue Service

The Royal Australian Navy and the Australian Submarine Corporation (ASC) have trialled the new Submarine Escape and Rescue Service.

The trial was known as Exercise BLACK CARILLON 96, the third in the Black Carillon series which have in recent years focussed on different aspects of submarine escape and rescue.

Whereas the previous two BLACK CARILLONs have tested response times and command and control arrangements, BLACK CARILLON 96 was merely a trial of the Service's ability to deploy and use new equipment built by ASC.

The Submarine and Escape Rescue Service equipment was transported by road from where it was stored and maintained at the Australian Submarine Corporation in Adelaide to Sydney. The equipment includes the Australian Submarine Rescue Vehicle (ASRV) *Remora*, decompression chambers for up to 72 survivors, and a remotely operated vehicle (ROV) for delivery of underwater stores.

An RAN ship and submarine were used in the trial to begin with the vessels deploying south from Sydney to Jervis Bay.

The former Soviet Navy Foxtrot class submarine, now berthed alongside ex HMAS VAMPIRE at the National Maritime Museum. (Brian Morrison)

RIMPAC 96

Four of the Royal Australian Navy's major Fleet units sailed from Sydney on 15 April 1996, to participate in RIMPAC 96, a six nation naval exercise to be held around Hawaii in May/June 1996.

The RAN task group comprised the guided missile destroyer HMAS PERTH, the guided missile frigates HMA Ships SYDNEY and NEWCASTLE, and the fleet replenishment ship HMAS SUCCESS. A Navy clearance diving team also took part in the exercise.

Manned by almost 1,000 officers and sailors, the Australian ships were joined by more than 40 other warships from the United States, Canada, Chile, Japan and the Republic of Korea. Coast guard, air force, army and marine corps elements from those countries were also involved.

Fifteenth, in a series of naval exercises conducted every second year since 1971, RIMPAC 96 spanned from 20 May until 30 June. The exercise was designed to enhance the tactical capabilities of ships and personnel in major aspects of maritime operations at sea.

Refit Begins

The Royal Australian Navy's amphibious ship HMAS MANOORA, commanded by Commander Rod Dudfield, arrived in Newcastle on Thursday, 23 May to begin an extensive conversion at the Forgacs Shipyard.

The ship arrived in the Port under charge of local tugboats from Hunter Towage Services who had been contracted to tow her from Sydney.

Conversion of the vessel by Forgacs to a 'Training and Helicopter Support Ship' configuration will begin in the near future.

The 'new' MANOORA will emerge from Newcastle in the latter half of 1997, equipped to carry 450 troops, four helicopters and two landing craft. Additional facilities to be provided during the conversion work will include a 40 bed medical facility.

USS JOHN S. McCAIN departing Newcastle. (Brian Morrison)

HMAS KANIMBLA is shifted into the Captain Cook drydock on 7 June, prior to her refit in Newcastle to the training and helicopter support ship role. (Brian Morrison)

The new coastal minehunter HUON, under construction in Newcastle, May 1996. (Brian Morrison)

HMAS ANZAC arrives in Sydney for the first time, 7 June. (Brian Morrison)

Submarine tender USS FRANK CABLE visited Sydney and other ports in April. (Brian Morrison)

Australia and US Agree on Production of Nulka Decoys

The Minister for Defence, Ian McLachlan, MP, has announced that Australia has signed a Memorandum of Understanding (MOU) on the joint production of Nulka decoys for the Royal Australian Navy (RAN) and United States Navy (USN).

The Nulka decoy, designed to provide protection against anti-ship missiles, is derived from the Defence Science and Technology Organisation's hovering rocket, and was jointly designed by Australian and US industry.

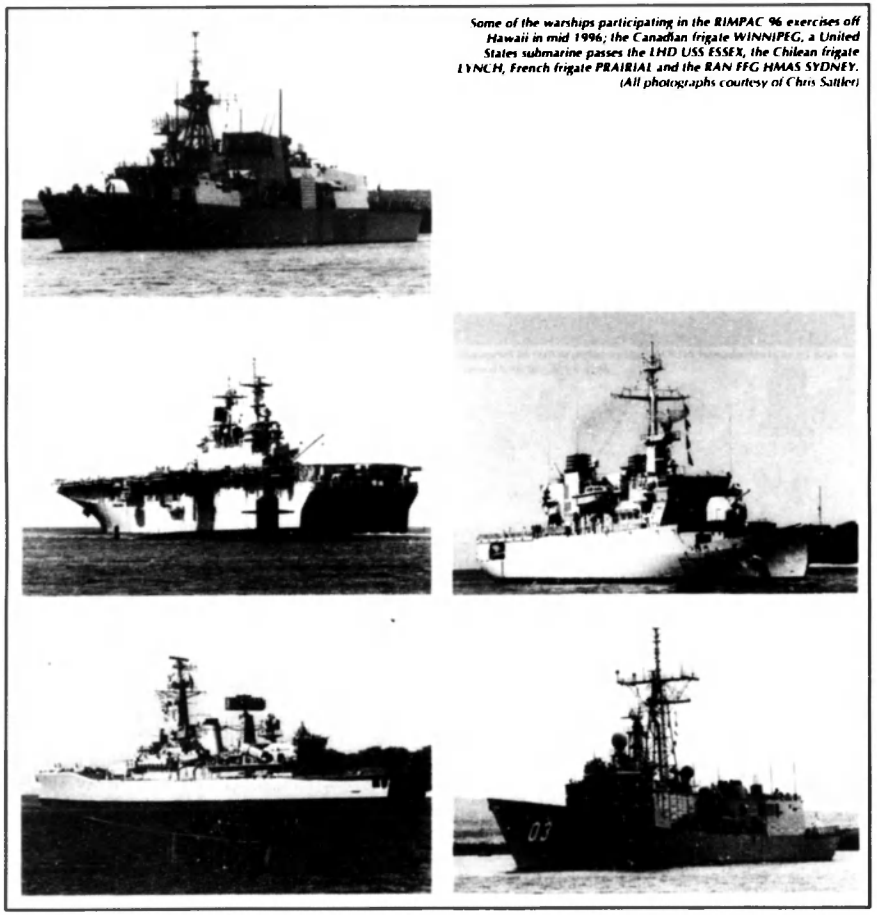
The initial joint production run under the MOU will be carried out by British Aerospace Australia Pty Ltd, and will involve a number of Australian and US companies as sub-contractors.

Mr McLachlan said "The agreement to enter into joint production demonstrates that Australian industry has now achieved world standards in an area of highly sophisticated technology."

He said the purchase of Nulka by the RAN and USN shows the confidence that the Australian and United States Defence organisations have in Australian designed and produced high technology products.

It is expected that Nulka will be in service with the RAN for more that twenty years from late 1998 onwards. The RAN intends to carry the Nulka decoy onboard its FFG guided missile and ANZAC Class frigates.

RIMPAC 96 navies at sea.



Some of the warships participating in the RIMPAC 96 exercises off Hawaii in mid 1996; the Canadian frigate WINNIPEG, a United States submarine passes the LHD USS ESSEX, the Chilean frigate LYNCH, French frigate PRAIRIAL and the RAN FFG HMAS SYDNEY. (All photographs courtesy of Chris Sattler)

History Revisited

Photographs courtesy John Mortimer

British aircraft carrier HMS FORMIDABLE in Grand Harbour, Malta at the close of the Second World War.

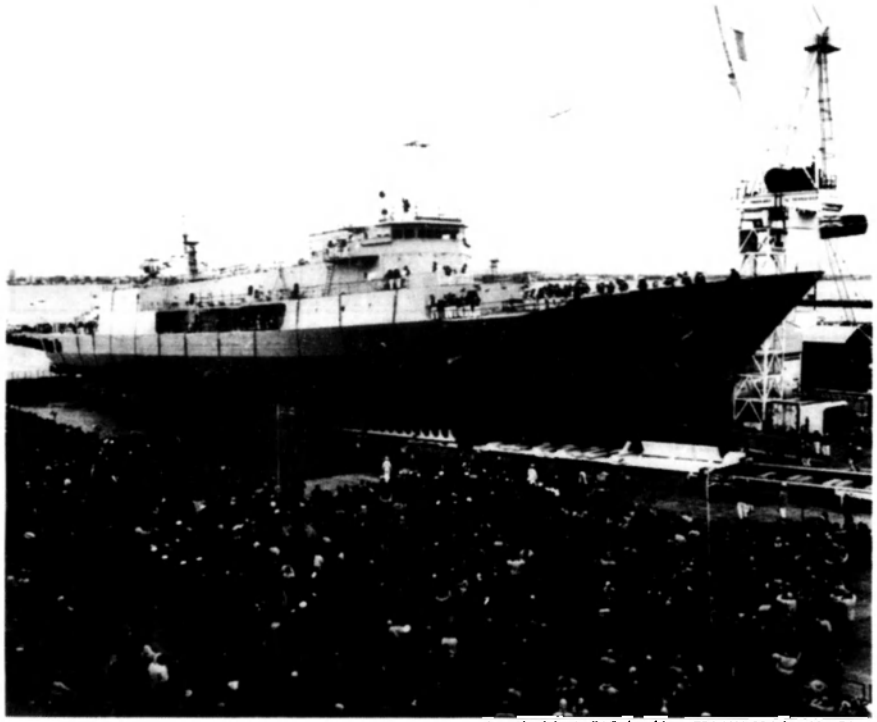
Monitor HMS ROBERTS, was fitted with a main armament of two 15 inch guns in one twin turret. The weapons were originally mounted in an earlier monitor during the Great War.

Starboard quarter view of the R class battleship HMS RAMILLES. A seaplane is carried above the aft Y turret.

The Royal New Zealand Navy

REPRIEVED From "Rust-out"

By Mike James



Launch of the ANZAC class frigate TE KAHA 22 July, 1995 (RAN)

The Royal New Zealand Navy (RNZN) was formed in 1921 as 'The New Zealand Division of the Royal Navy', following more than a decade of New Zealand contributions to the Royal Navy, most notably the funding of the battlecruiser NEW ZEALAND for the RN in 1911. The actual designation Royal New Zealand Navy was enacted in 1941, allowing New Zealand warships to carry the appellation, His/Her Majesty's New Zealand Ship, all previous having had the HMS prefix. The Navy played an active role in several theatres during the Second World War and later in the waters off the North East Asia during the Korean War.

To maintain the fleet after the Korean War, new vessels were acquired to maintain the RNZN at an operational force of four frigates and auxiliary vessels, culminating in an order for ROTHESAY and LEANDER class frigates from the UK in the 1950's and 1960's. Unfortunately this was the high water mark for the RNZN, with no new construction of major warships being undertaken for more than two decades. Acquisition of second hand RN frigates temporarily postponed the replacement question but for several years it appeared that the Navy would be a victim of government neglect, left to soldier on with obsolescent and increasingly maintenance intensive vessels.

With the 90's however their appears to have been a greater appreciation of the Navy's role in government circles, resulting in the ordering of new frigates, a replenishment vessel and a sealift ship. These acquisitions appear to have staved off the imminent onset of block obsolescence, however the future of the Navy is by no means completely assured. The existence of a number of vocal and well organised 'peace' groups opposed to the spending of any money on defence could leave the continuing expansion and modernisation of the Navy vulnerable to the vagaries of political opinion and budgetary cutbacks.

FRIGATES

The RNZN has determined that a force of four frigates is necessary for the service to carry out its assigned role in support of the New Zealand Government's policies. Unfortunately the current frigate force has shrunk to a low of three ships, the fourth

HMNZS MANAWANUI in Sydney Harbour (RAN)

having paid off in March 1995. The current force consists of three LEANDER class frigates, two of which were bought new with the third being a second hand purchase from the Royal Navy. The oldest vessel is the 3000 tonne WAIKATO, which was built by Harland and Wolff of Belfast, commissioning in 1966 and arriving in New Zealand in mid-1967.

In 1995, WAIKATO's obsolescent Sea Cat surface to air missile (SAM) system was removed, leaving her vulnerable to surface to surface missiles, reliant on a twin 4.5 inch gun turret and several light machine guns for anti-aircraft defence. Two triple anti-submarine (ASW) homing torpedo tubes and a single Wasp helicopter round out her armament. In effect, WAIKATO is really little more than a large patrol vessel, unsuited for operations against even a modest threat, however she is likely to pay off when the first of the new ANZAC class frigates commissions.

The remainder of the frigate force is made up of two "broad-beamed" LEANDER class (so called because at 13.1 metres beam they are 0.6 metres wider than earlier vessels of the class, providing increased internal space). CANTERBURY was completed in the UK at Yarrow's Clyde yard, commissioning in 1971 and arrived in New Zealand in late 1972. WELLINGTON was originally commissioned at Vickers Armstrong's Newcastle yard in 1969 as HMS BACCHANTE, serving with the Royal Navy until purchased in October 1982, arriving in New Zealand in December of that year.

Both ships have undergone substantial modification to their electronics, having been fitted with new radar, sonar, communications and fire control systems. Today, both vessels are armed with a twin 4.5 inch gun turret, several light machine guns, two triple tube mounts for ASW homing torpedoes and a single utility helicopter. The Sea Cat SAM system has been removed and is to be replaced with a single Phalanx Close-In Weapon System (CIWS), a 'Vulcan cannon' style anti-missile system capable of firing up to 3000 rounds per minute, placing a 'wall of lead' between the ship and an attacking anti-ship missile.

All three ships are now more than 25 years old and have crew requirements of more than 250 each, a serious constraint to a navy of only 2400 personnel. The situation will be alleviated somewhat when the Navy's new ANZAC class frigates come into service. Under construction at Transfield Shipbuilding's yard at Williamstown in Victoria, the two ships building for New Zealand will each require crews of only 160, while being far more useful vessels.

The first of New Zealand's two frigates, TE KAHA, was launched on 22 July 1995. The second, not yet named, will be laid down on 30 June 1996, the day after the launch of HMAS ARUNTA frees up the slipway for construction to begin. Built in modules constructed and fitted out in Australia and New Zealand and then transported to Williamstown for assembly and integration, the ten ships of the class are launching at roughly yearly intervals, far more rapidly than would be allowed by traditional methods.

When completed the new frigates will be armed with a single 5 inch gun forward, an eight cell vertical launcher for the 15 km range Sea Sparrow surface to air missile, two triple tube mounts for ASW homing torpedoes and will carry a single helicopter. Provision has been made in the design to fit a Phalanx CIWS, Harpoon surface to surface missiles and additional electronics if required. This would bring them up to approximately the same standard as their sisterships in the Royal Australian Navy.

The decision to purchase the two new frigates was a controversial one in New Zealand, with a vocal 'peace' lobby claiming that the frigates were variously; too expensive, too well armed, too big or just not needed. Eventually some sanity arose in the debate with impartial observers pointing out that the vast majority of the countries trade travelled by sea, and that relying on the good offices of other nations to protect that trade would be foolish in the extreme. The RNZN was eventually successful in selling its case to the government, pointing out that their then-current frigate force needed replacing, and that the ANZAC class

HMNZS CANTERBURY (RAN)

would be built to New Zealand requirements, require less maintenance, smaller crews and would restore interoperability with the RAN, saving even more money.

Unfortunately, the RNZN is not completely out of the woods yet. The two LEANDER class frigates are both more than twenty-five years old, and refits can only do so much, eventually they will require replacement. The Royal Navy has scrapped the last of its LEANDER class, resulting in spares support drying up. The best option would be to purchase two additional ANZAC class, following on from the current order. This would allow standardisation on a single class, resulting in considerable savings in spares inventories and training. Unfortunately the 'peace' lobby have stated that they will vehemently oppose the purchase of any more frigates.

One possible solution may be at hand in the Offshore Patrol Combatant contest to supply the Malaysian Navy with up to twenty-seven corvette sized vessels. Transfield Shipbuilding, builders of the ANZAC frigates, have submitted a design which is backed by the Royal Australian Navy. If selected by Malaysia, the RAN would also acquire the OPC as its Tier Three surface combatant, requiring at least nine to replace the FREMANTLE class patrol boats for lower level naval activities such as policing of Australia's 200 km Exclusive Economic Zone.

Transfield's 1200 tonne design may be suitable for policing New Zealand's EEZ and South Pacific deployments, freeing up the ANZAC frigates for deployments to South East Asia. Capable of 25 knots, armed with a medium gun and a smaller secondary gun system and operating a helicopter, they would be well suited as a 'second tier' combatant for the RNZN. Three or

HMNZS MONOWAI in Sydney Harbour (RAN)

perhaps four OPC's may be affordable for the cost of two ANZAC frigates, while still reaping the benefits of commonality with the RAN. In addition the OPC complement of only 60 would be a substantial saving for the RNZN.

NAVAL AVIATION

The RNZN currently operates six Westland Wasp helicopters from the frigate force the tanker ENDEAVOUR and the survey ship MONOWAI. With the first acquired in 1962, the Wasp fleet is getting 'long in the tooth', with the state of the art in naval helicopters having well and truly passed them by. The Navy has recognised this and has called for tenders to supply six replacement medium helicopters. At time of writing the choice had narrowed down to either the Kaman SH-2G Super Seasprite or the Westland Super Lynx, with the Sikorsky S76N an outside chance. A decision expected in late 1996.

Complicating the selection process is that the same helicopters are competing for the RAN Intermediate Helicopter Project, as well as the Malaysian Navy's requirement for a replacement for their aging Wasp's. It seems unlikely that New Zealand would 'go it alone', more probable is that the RNZN and RAN requirement for six and fourteen helicopters respectively will be coordinated, taking advantage of commonality of spares, training and interoperability. The RAN decision is also due in late 1996 and a joint decision is possible, with the two navies evaluation teams working closely together.

PATROL CRAFT

Four MOA class inshore patrol craft are operated by the four Reserve Divisions of the RNZN with one each based at Wellington, Auckland, Dunedin and Christchurch. Commissioned in the mid-1980's and displacing 105 tonnes, they share a common design with the TAKAPU class inshore survey ships and the training ship KAHU. Armed with a single 12.7 mm machine gun and capable of 12 knots, they are useful for training and policing of New Zealand's territorial waters and EEZ and have a secondary minesweeping role, with a side scan sonar system and mine warfare data system being fitted as finances allow.

AUXILIARIES

The largest ship in the RNZN is the replenishment tanker HMNZS ENDEAVOUR. Built in South Korea in 1988, the 12,300 tonne ENDEAVOUR provides the RNZN with the capability to deploy a task group over long distances, providing several accompanying ships with water and fuel for both ships and their embarked helicopters. Constructed to a modified commercial design and with a liquid cargo capacity of 8000 tonnes, ENDEAVOUR is capable of 14 knots and has a complement of 30 and can operate a single helicopter.

The next largest vessel is the recently acquired Military Sealift Ship CHARLES UPHAM. Under conversion from a roll-on, roll-off ship, the MSS will provide the New Zealand Defence Force with the capability to deploy an Army force of up to 150 troops and their equipment throughout the Asia-Pacific region and beyond. The need for CHARLES UPHAM was made plain by the requirement to charter commercial shipping to transport a battalion of troops and their equipment to Europe to take part in United Nations in the former Yugoslavia. Initially it was hoped to acquire the RAN Heavy Landing Ship HMAS TOBRUK, however the acquisition was turned down, ostensibly due to the large crew required (144 in RAN service) however it is also believed that the two Navy's were unable to come to a mutually agreeable timetable for transfer.

The solution was to acquire the 7200 tonne MERCANDIA QUEEN II, a German-built stern-loading, roll-on, roll-off ship completed in 1984, for US$9 million. Initially the MSS underwent minimum modifications to render her suitable for naval service, initial training, modifications to firefighting and pollution control systems, the fitting of appropriate communications equipment and, of course, painting the ship RNZN grey. Once these modifications were complete she was commissioned and commenced trials, crew familiarisation and training with the Army to prepare both services for joint operations. In mid-1997 CHARLES UPHAM is scheduled to begin an extensive refit to fit her out for her new role, including fitting of facilities to operate two helicopters, upgrading of

HMNZS MOA (RNZN)

damage control capabilities to RNZN standards and accommodation for her crew of 65 and up to 150 troops.

When modifications are complete the RNZN will have acquired the capability to deploy ground forces worldwide, provide support to United Nations operations and the ability to provide rapid assistance throughout the South Pacific in case of natural disaster, all for a very modest cost to the New Zealand taxpayer.

As a maritime trading nation New Zealand is reliant on the safe transport of that trade through her waters. One aspect of this is the provision of safe charts for mariners. To provide these a small fleet of survey vessels are in service providing hydrographic services in home waters and throughout the South Pacific. The largest vessel in service is the 3900 tonne survey ship MONOWAI. A former cargo vessel, she was acquired in 1974 for conversion to her new role, being fitted with appropriate survey gear, facilities to operate a helicopter, improved electronics and machinery, and enlarged accommodation for her complement of 130, finally commissioning in 1977.

Assisting in the survey task are two smaller inshore survey vessels, the 105 tonne TAKAPU and TARAPUNGA. Sharing a common design with the MOA class inshore patrol craft and the

A mid-1980's view of a RNZN/RAN Task Force (RAN)

training vessel KAHU, they have been specially equipped to operate in conjunction with MONOWAI, having been fitted with side scan sonar's, precision location equipment and a Hydlaps hydrographic data processing system compatible with that on MONOWAI. Both ships were commissioned in 1980 and have complements of 11.

The RNZN operates a former US research ship, HMNZS TUI, on acoustic research, conducting experiments throughout the Southern Pacific for the NZ Defence Scientific Establishment. Originally operated by the United States as the USS CHARLES H DAVIS, TUI has been on loan since 1970. Displacing 1400 tonnes and capable of 14 knots, TUI has a complement of 50 (including 15 scientists and researchers).

The 105 tonne training craft KAHU was originally built as the diving tender MANAWANUI in 1979. Experience however proved that she was too small for the task and she was reassigned to the navigation and seamanship training role in 1987 operating out of Auckland. Sharing a common design with the four MOA class inshore patrol craft and the two inshore survey vessels of the TAKAPU class, KAHU has a complement of 16 and is capable of 12 knots. To rectify the shortcomings that became obvious in KAHU, a former North sea oil rig diving support ship, the STAR PERSEUS, was acquired in 1988 and commissioned as the new diving tender HMNZS MANAWANUI.

Purpose built to support extensive diving operations over a wide range of depths, MANAWANUI is fitted with a deep-diving bell, two remote control submersibles, a large decompression chamber, side scan and hull-mounted sonar's and extensive workshops and equipment rooms to support embarked divers over a range of tasks. Displacing 900 tonnes at full load and capable of 11 knots, MANAWANUI has a crew of 24, including an embarked detachment of clearance divers, and can support additional diving and medical specialists if required.

The Royal New Zealand Navy is a small but professional force, with a long and proud history spanning seven decades. Under threats to its viability as a viable force in the early and mid-1980's, it has undergone something of a renaissance in recent years, with new construction and cost effective second hand purchases having added new and upgraded capabilities. Continuing close links with the Royal Australian Navy continue to pay benefits, with RNZN ships training and operating closely with RAN units, benefiting from the RAN experience in the Gulf War, the use of RAN facilities such as the Beecroft Gunnery Range and utilising Australian logistic support while on deployment to areas such as South East Asia.

The remaining years of the 1990's are important ones for the Royal New Zealand Navy, with hard decisions necessary for replacement of the two remaining LEANDER class frigates, the survey ship MONOWAI and the research ship TUI, all of which are over twenty five years old. The politically powerful "peace" lobby has signalled that it remains opposed to additional spending on defence, especially on equipment that it sees as being to 'capable' for New Zealand needs. While the Navy has had a number of successes over recent years the fight to remain a viable and operational service is not over. In the words of the ancient Chinese curse, "may you live in interesting times". For the RNZN the next few years should prove very interesting.

Arsenal Ship for USN

Artists impression of the new Arsenal Ship.

WASHINGTON - The US Navy's futuristic, heavily armed Arsenal Ship could be a fortified version of the stealthy Sea Shadow ship, a new ship design with a wave-piercing bow, an adapted commercial cargo ship or an extrapolation of a variety of existing ship designs.

US shipbuilders are drawing up myriad designs for the Arsenal Ship, which is envisioned by Navy officials as a missile-laden forward-deployed ship to support commanders ashore in striking enemy forces.

Service officials eventually intend to station the missile-armed warships overseas, and periodically rotate minimal crews to man the ships, service officials said. That way the Arsenal Ships, equipped with up to 500 missiles each, would be instantaneously available to support missions ashore.

"We think it is a good idea to get firepower in theater to support the ground commander," Adm. Mike Boorda, chief of naval operations, said in an April 4 interview. "If we can get a ship to stay overseas, we can get a lot more bang for the buck."

In cooperation with the Defence Advanced Research Projects Agency (DARPA), Arlington, Va., the Navy intends to issue an industrywide solicitation for proposals on how to meet the requirement for the futuristic warship, industry officials said.

All four of the major US shipyards are interested in pursuing the multibillion dollar Arsenal Ship program and probably will pursue teaming in some form with other missile and combat system developers and manufacturers. However, those relationships are still in an exploratory phase, shipyard officials said.

A five-ship fleet currently is envisioned with the cost to design, develop and construct the first ship not to exceed $520 million. The Navy intends to contribute $150 million for the project, while DARPA will chip in another $170 million.

One contractor will be selected and construction is expected to begin by 1998 with the first Arsenal Ship deployed by 2001, Navy officials said. If more funding is available, the service would like to speed fielding by 2000.

Bath Iron Works, Bath, Maine, is proposing a low silhouette design with an elongated bow that pierces waves, allows good control in rough seas, and provides a high speed, company officials said.

The hull design is a direct result of work the shipyard did under a contract awarded from the Pentagon's Technology Reinvestment Program, company officials said, whose objective was to develop a highspeed commercial cargo ship. Bath also is looking at a proposal that includes significantly lengthening the hull of the DDG-51 Arleigh Burke-class destroyer to serve as a platform for Arsenal Ship.

Ingalls Shipbuilding, Pascagoula, Miss., intends to offer both modified warships and new designs for Arsenal Ship, Kevin Jarvis, director of business development, said. Modification proposals under consideration by Ingalls include altering early versions of the Navy's CG-47 Ticonderoga-class cruisers or DD-963 Spruance-class destroyers.

Likewise, Lockheed Martin Government Electronic Systems, Moorestown, N.J., will leverage off the company's Sea Shadow work for Arsenal Ship Sea Shadow was a long-classified effort to inject stealthy features into combat ships. Lockheed Martin's design also adds more armor to protect vital portions of the ship.

Newport News Shipbuilding, Newport News, Va., also plans to compete for Arsenal Ship, company officials said, noting that the company may propose a new design or a modified version of a commercial product tanker.

Key attributes for Arsenal Ship that have been identified by the Navy and DARPA were contained in a joint memorandum signed March 25. Critical capabilities include:

- Provide up to 500 Vertical Launching System cells to house a variety of missiles for use against land targets;
- Ensure the ship's combat system is linked to the service's Cooperative Engagement Capability;
- Ensure the design can accommodate additional ship self-defense and survivability features in the future;
- Lower costs by using innovative maintenance and operational procedures, methods and technologies.
- Limit crew size to no more than 50 personnel.

Given the amount of new technology and automation expected to be designed into the Arsenal Ship the Navy expects the program to serve as a bridge to its next-generation warship program, dubbed SC-21.

Worldwatch

Launching of HMS OCEAN.

•New Delhi is exploring the option of leasing the 35000 tonne KIEV class carrier ADMIRAL GORSHKOV (ex-BAKU) for ten years with an option to buy. Reports indicate that the vessel is in poor condition after a February 1994 boiler room explosion and fire and would require a hugely expensive refit to be brought back into service. The Indian Navy desperately needs replacements for their current carriers, both of which are over 30 years old.

•The US government has agreed to supply three P-3C Orion maritime patrol aircraft to Pakistan. Already paid for, the Orion's, together with 50+ F-16 fighters, had been stranded in the US by an American congressional ban on military sales to Pakistan after the US government could not guarantee that Pakistan was not pursuing a nuclear weapons programme. A personal appeal by Pakistan's Prime Minister, Benazir Bhutto, to President Clinton resulted in the Orion's delivery. It is reported that the Indians are not amused.

•Reports emerging from China indicate that the Peoples Liberation Army Navy (PLAN) have lost one of their ROMEO class conventional submarines. Apparently lost during a commanding officers qualification course during the last year, this is the second Chinese submarine to be lost in recent years, following a fire on board a MING class boat in 1992. China is taking delivery of four Russian KILO class subs and may build more under licence to replace these losses and upgrade their fleet.

•The Brunei Navy has reopened the competition for Offshore Patrol Vessels. The initial contract, signed with Vosper Thornycroft in the UK for three 1000 ton VIGILANCE class corvettes, has been allowed to lapse. It is believed that Brunei wants a larger, better armed and more seaworthy vessel. Given that the initial contract with VT was signed in 1989, don't hold your breath expecting a quick decision.

•On the subject of delays to new projects, the South African Navy's plans for up to four new patrol corvettes in the 1500-3000 ton range also seems to have come unstuck. The Navy had evaluated tenders and eliminated several contenders, only to have government ministers telling the same contenders that they would get the contract. In the end the government told the Navy there wasn't enough money and to go back to the drawing board for something cheaper.

•The Royal Navy apparently suffered a minor (?!) mishap during the launching of HMS OCEAN. The 20,500 tonne amphibious helicopter carrier (LPH) was being launched down the slipway when she apparently partly fell off her supporting cradles, punching a hole in the ships hull. The remaining supports held OCEAN upright long enough for her to enter the water (blind-siding a waiting tug as she did so) where she rapidly started taking on water, flooding several compartments. A spokesman for the shipyard stated that there was no danger of the ship sinking and that the incident would not delay OCEAN's completion. OCEAN is designed to operate up to 15 Sea King sized helicopters and 4 Landing Craft (Vehicle / Personnel) in support of 480 embarked marines, their equipment and some 40 vehicles. For short trips up to 800 troops can be embarked. Designed to be operated with the new amphibious assault ships (LPD) currently building to replace the aging FEARLESS and INTREPID, OCEAN will commission in 1998.

•Pakistan is reported to be having discussions with China for the supply of several 'escort-type' vessels. The exact type is not known but an educated guess can be made. Both the LUDA and LUHU class destroyers are possibilities based on China's eagerness to export both designs. In the past China's Peoples Liberation Army Navy (PLAN) has had to wait for new ships while export orders have been satisfied first, so important are foreign orders and the foreign exchange it brings in. Given Pakistan's chronic funding difficulties, an older (and cheaper) frigate design may well be selected.

•The US Navy fire sale continues unabated. The latest to go are eight OLIVER H PERRY class FFG's. Turkey will receive three and Egypt two. The United Arab Emirates, Bahrain and Oman will each receive one ship, despite doubts about these navies ability to fully operate and man them. All are being transferred either by grant or soft leases. Maybe a polite word in Washington will get us a couple as well?

•The Russian Navy is suffering under all

Japanese Training ship in Sydney Harbour, June 1996.

sorts of problems. Reports indicate that late last year several nuclear-powered submarines lying alongside at Murmansk and connected to shore power had a major scare when the power was suddenly cut off, leaving the subs in darkness and with no power to the submarine's reactors. Apparently the auxiliary diesel engines could not be started as their fuel had been sold on the black market and the boats had not been keeping the batteries topped up. One submarine was reported to have come close to a reactor meltdown before emergency battery power could be restored. Why was the power cut? The Navy had not been paying its electricity bills for more than six months!

•The Bangladesh Navy has found a novel way to fund new warship purchases. Get someone else to pay for them! Reports indicate that Saudi Arabia is to offer a $100m gift to Bangladesh to cover the cost of purchasing a new multi-role frigate. The ship (which has not yet been selected) is to be armed with a 76mm or larger gun, at least 4 anti-ship missiles and appropriate defensive gun armament. Bangladesh stands in dire need of new ships, with its current inventory comprising 3 ex-UK SALISBURY and LEOPARD class frigates, all dating back to the Fifties, and a single Chinese built JIANGHU class of dubious build quality delivered several years ago. Exactly what the House of Saud gets in return is not known.

•The Thai Navy is reported to be unhappy with the frigates that they have purchased from China. Four JIANGHU III and two JIANGHU IV class frigates were ordered in 1988 with the first, HTMS CHAO PHRAYA, delivered in 1991, the others following at six monthly intervals. Reports suggest that the build quality is, quite frankly, abysmal. Major problems reported include dissimilar metal corrosion, totally inadequate damage control and firefighting facilities and a standard of build on the level of the craftsmanship and attention to detail evident in the fine products of the Soviet Union of the 1950's. In one typical example of the standard of construction, major wiring throughout the ship is apparently fed through steel piping completely lacking in access panels, requiring the pipes to be cut open whenever maintenance is required.

•The initial contenders for the Thai Navy's submarine acquisition project have been announced. Six designs are on offer for the Thai requirement of two, possibly three boats, the German Type 209, Russia's Kilo class, the UK and the Netherlands are combining to offer the Moray 1400 design while Sweden's Kockums have submitted the A19. Bazan of Spain is offering the Scorpene design in conjunction with DCN of France while in an interesting arrangement, DCN are offering the Agosta 90B in conjunction with Bazan! Seems it's not just politics that makes strange bedfellows.

•In amongst all the doom and gloom hanging over the Russian Navy, what with stories of ships sinking at their moorings, potential 'China syndrome's' on board nuclear submarines and crippling budget problems, the Navy did get one piece of good news. The fourth KIROV class nuclear powered cruiser, PETER VELIKIY (Peter the Great) was recently handed over at Kronstadt in the Baltic. Originally to be named Yuri Andropov, the 1989 change in Russian leadership saw the ex-KGB chief and Premier fall out of favour and the former Tsar's reputation as a great Russian naval visionary and war leader get a quick buff and polish. The new ship will be attached to the Atlantic Fleet based at Murmansk.

•The US Navy's Office of Naval Intelligence has issued its latest report on 'the submarine threat'. No prizes for guessing that their old friends, the Russian Navy, come in for a bagging, with fingers being pointed at the new classes of submarine under construction; improved versions of the AKULA, the OSCAR and KILO, as well was completely new generation submarines such as the SEVERODVINSK SSN (now building) and the 4th generation follow up to the TYPHOON and DELTA class ballistic missile subs (under development). The US is worried that more and more of these new submarines are appearing, all of them so quiet that they will be a real threat to US submarine superiority. (Some might argue that the current Russian subs are so quiet that the US no longer has a superiority to worry about)

•The Russian Navy has begun decommissioning comparatively young vessels to save scarce funds. Latest to go is a KRIVAK class frigate and the KIEV class VTOL carrier NOVOROSSIYSK. The frigate, the DEYATELNY, was only 19 years old and is not expected to be the last such modern frigate to go as the Russian Navy desperately attempts to make the most of the inadequate funding available. NOVOROSSIYSK, the third carrier of the KIEV class, has been towed to South Korea to be broken up for scrap. Commissioned in 1982, she had spent almost her entire career assigned to the Pacific Fleet. She follows her sister MINSK, scrapped in South Korea last year. Despite being only 14 years old her condition was reportedly described as being 'very poor'.

•The United Arab Emirates has taken steps to create the nucleus of an ocean going navy through the purchase of acquired two ex-Dutch KORTENAER class frigates, the PIET HEYN (commissioned 1981) and the ABRAHAM CRIJNSSEN (commissioned 1983). Originally hoping to acquire one or two ex-USN OLIVER HAZARD PERRY class FFG's, the UAE has decided to acquire the former Dutch Navy vessels as an interim measure, while they negotiate with the Dutch Shipbuilder Royale Schelde for an undisclosed number of the projected 4400 tonne multi-national LCF frigate. Given that the UAE Navy only has a total complement of 2200, the question needs to be asked as to where they will find the personnel to man their new acquisitions (180+ crew required for each).

•The Malaysian Navy has delayed making a decision on a new helicopter type to replace its current fleet of 12 antique ship-borne WASP helos. As in the Australian and New Zealand Navy's medium shipboard helicopter competitions, the contest is a two horse race, between British Aerospace's SUPER LYNX and Kaman's SEASPRITE. The Malaysian's may be delaying a decision until they learn which type has been selected by the exhaustive selection process run by the RAN and RNZN. Having the same type operated by three regional navies has the potential to open up economies of scale in production, support and training.

BOOK REVIEWS

OPERATION SEA DRAGON

By Ron Bojtschuk

Reviewed by Greg Swinden

Operation Sea Dragon is the story of the Destroyer HMAS HOBART during her six month deployment to Vietnam in 1967, told from the point of view of a 19 year old Able Seaman serving in her.

This is a"warts and all" account although some of the names of the characters have been changed to 'protect the innocent', and guilty as well!

Books about the RAN's activities in Vietnam are few and far between and this is the only one written by a sailor which makes it a unique account of life in a destroyer, on the lower deck, in wartime. It also provides a rare insight into the views of ordinary Australians and the unpopular war in Vietnam.

Apart from being a good story it provides an insight into the life of the men in the RAN during the 1960's and what it was like in the messdeck of a ship at war. Operation Sea Dragon provides a realistic and interesting account of life on the Vietnam gunline; the moments of tense action, boredom and routine, humour and tragedy.

Previously published in 1986 this reprint cites that the book will soon be a major film. If it does then it will make excellent viewing but don't expect something in the vein of 'In Which We Serve'.

The book is spoiled slightly by a plethora of spelling errors and some very poor typesetting - the fault of the printer and the proofreader. I am also sure the author means when he says the crew went to 'leaving ship stations' he actually means 'leaving harbour stations' as leaving ship stations is the preparatory order prior to abandoning ship!

At 190 pages this paper back is well worth the $14.00 ($11.00 plus $3 postage and handling) and is available from Sea Dragon Enterprises PO Box 1055 Beenleigh QLD 4207. A must for all those interested in the Navy, and particulary those concerned with the RAN's social history.

AUSTRALIAN AIR POWER

By Ross Gillett
Published by:
The Book Company Pty Ltd

Cost: $29.95

Reviewed by Brian Alsop

AUSTRALIAN AIR POWER is an encyclopedia of the nation's military aircraft flown by the Royal Australian Air Force since 1921.

Presented in chronological format to effectively portray the development of the RAAF, the book covers all its aircraft from front-line fighters and bombers to small aircraft impressed for war service.

Army aircraft are also included, this being appropriate given the close links that have existed between the RAAF and Army Aviation over time.

Not only have several Army aircraft types also been RAAF operated, but the Australian Army Aviation Corps grew out of the RAAF's air observation post flights and army light aviation squadron.

Following an 18 page introduction, each aircraft type is described with individual narrative and a data table, highlighting important dates, armament, specifications and performance.

A comprehensive range of photographs is used to illustrate the book. With more than 330 black and white and colour images, *Australian Air Power* is one of the few publications I have read where the photographs are not crowded together. The result is a book that visually is very appealing and easy on the eye. While some of the photographs are well known, this does not detract from the volume.

Available from all good bookshops, *Australian Air Power* represents good value at only $29.95. The book will make a valuable addition to the library of any aviation/military enthusiast.

THE ROYAL AUSTRALIAN NAVY IN WORLD WAR II

Edited by David Stevens
Published By:
Allen & Unwin

RRP $34.95

In September 1939 Australia entered the Second World War with a fleet of only thirteen effective ships and just over 5,000 naval men in uniform. Nevertheless, of the three services, the Royal Australian Navy was the most ready for war and by 1945, its strength had grown to 337 ships in commission and almost 40,000 serving men and women. However, for over fifty years the contribution of the Navy has been overshadowed by Australian operations on land and in the air, yet without the constant struggle to win security at sea, victory in Europe and the Pacific could never have been achieved.

At last, this imbalance has been redressed. The Royal Australian Navy in the Second World War is the topic for a new book launched aboard the guided missile destroyer HMAS BRISBANE on Wednesday, 24 April at the Fleet Base, Woolloomooloo.

Edited by David Stephens and simply titled *'The Royal Australian Navy in World War II'*, the book is based on papers presented at the Naval History Conference organised in 1995 by the Navy's Maritime Studies Programme.

In this ground breaking new work, written by sixteen leading naval historians from Australia and overseas, the part the RAN played throughout the six years of global conflict is meticulously examined. Drawing on the latest academic research and recently released documents, the authors shed new light on the vital importance of the Australian role in supporting maritime campaigns in every theatre.

The comprehensive coverage ranges from broad issues of strategy and naval policy to the exploits of individual ships and portraits of outstanding personalities. In operations that ranged from the Atlantic through to the Mediterranean to the Pacific, both the triumphs and the tragedies of war at sea are critically considered.

Fully illustrated with many fascinating and previously unpublished photographs and maps, this book represents a unique attempt to encapsulate Australia's naval war in one volume.

AUSTRALIAN SEAPOWER - CRUISERS Photofile No. 4

Published by Topmill Pty Ltd

Price $9.95
Reviewed by Joe Straczek

The fourth in the current series from the Topmill stable, *Cruisers*, is an 80 page monograph which describes and illustrates the era of the "cruiser" in both Australian and New Zealand waters.

Divided into four parts, the book begins with the colonial era, including the South Australian light cruiser HMCS PROTECTOR, the Royal Navy's Auxiliary Squadron, the seven cruiser Flagships of the Australian Station and last but not

least, the Second and Third class cruisers, a total of 21 ships, varying in size, role and firepower.

Cruisers commissioned by the RAN, including the auxiliaries operated in both world wars, are brought together in part two of the book. All individual ships and classes are presented in a chronological format, in both the Australian and New Zealand sections, with an informative narrative and excellent selection of mostly unpublished photographs. The Kiwi cruisers are equally well covered. One of the longest serving was the 1890s vintage PHILOMEL, which did not end her service, albeit, in the depot ship role, until the mid 1940s.

One of the pleasing aspects of *Cruisers* is the quality of the black and white photographs, the early glass plate images of the Royal Navy ships, a delight to the warship enthusiast and shiplover alike. Many photos have also been enlarged to full page size.

Following on from the earlier Submarine, Aircraft Carrier and Battleship books, the new volume is highly recommended to all readers.

CONWAY'S ALL THE WORLD'S FIGHTING SHIPS 1947-1995

Published by: Conway Maritime Press, London

Reviewed by Joe Straczek

The latest publication to emerge from the renowned Conway Maritime Press, *All the World's Fighting Ships 1947-1995*, became available in Australian bookshops early this year.

Fourteen years have elapsed since the initial two 1947-1982 volumes were published. The new book now encompasses the profound changes in the makeup of the world's navies and the aftermath of the break up of the Warsaw Pact.

The new 1947-1995 volume spans 640 pages, with 570 photographs and 530 technical drawings. All of this, plus the massive amount of narrative describing the technical and historical aspects of all of the warships is packed into a 310mm x 216mm hard cover book.

Particularly important in the updating of the new volume was the release of additional information after the breakup of the Warsaw Pact; the unification of Germany and the takeover of the former East German ships. A whole range of recent technical developments are

chronicled, including the commissioning in the USSR of the first large-deck carriers; the arrival in Britain, Holland, Sweden and Japan of a new generation of high-tech conventional submarines; the revival of interest in close-in air and missile defences, and the adoption of stealth technology at sea. It covers the Gulf War which involved the biggest naval deployment since 1945.

Conway's All The World's Fighting Ships is now up to date, making it a complete core reference book for all those who follow naval affairs.

Highly recommended.

STEALTH AT SEA The History of the Submarine

Dan van der Vat
Published by Orion Books (London) and distributed in Australia by Allen & Unwin.

RRP $16.95 (Paper Back)

Reviewed by Geoffrey Evans

This account of the development of 'a submersible vessel' in 1578 to the monster nuclear-powered and nuclear-armed submarines of the present day will undoubtedly be of great interest, not only to submariners past and present, but to many others because of the tremendous influence the submarine has had on maritime warfare and, especially in modern times, on world affairs; to the technically-minded professional, the maritime historian and to anyone with an eye to the future.

The book, of 421 pages, falls naturally into a number of clearly defined periods - 1465 to 1900 (ideas, the experimental years); 1900 to 1918 (the events leading up to and including World War One); 1919 - 1938 (between the wars including breaches of the peace); 1939 - 1945 (World War 2); 1946 - (the nuclear age). The book includes an extensive alphabetically listed bibliography, a list of submarine-owning nations in 1993, a very good index, illustrations and maps.

By and large informative passages and the large number of statistics quoted in the text are not attributed to any particular source; this makes for easier reading even if it means taking their accuracy for granted; given that Dan van der Vat is an award-winning naval historian, the author of a number of books and quotes over 100 mostly well-known sources, this reviewer had no difficulty in accepting the veracity of the information.

Not so easy to accept, at least not

without questioning, is the author's criticism of political and military leaders with worldwide reputations in both peace and war, partly for not recognising the potential of the submarine until it was too late to take full advantage of the vessel's capabilities. An exception was Britain's Admiral Sir John Fisher (later Admiral of the Fleet Lord Fisher, 1st Sea Lord 1904 - 10, 1914 - 15) who is on record as foreseeing the offensive potential of the submarine and is described by van der Vat as 'the greatest Admiral of the day', an assessment with which few students of naval history would disagree. The Author's criticism does not extend to those who fought the war at sea.

Perhaps because he served in the RAN during WW2, this reviewer was particularly interested in the section of "Stealth at Sea" dealing with this period: Not for the first time he was saddened to be reminded of the appalling loss of merchant shipping and of the lives of seamen due to submarine attack: WW1 losses were equally mind-boggling and provide a timely reminder that now as then the principle function of navies is to defend a nation's trade.

The final part of the book, an epilogue pertaining to the nuclear age and speculating on the future of nuclear submarines is also of particular interest given worldwide concern about the subject. According to the author the United States Navy was advised six or so months prior to the outbreak of WW2 to consider the practical application of uranium fission, leading naval research scientists to study the possibility of using nuclear energy to provide steam for a turbine-driven submarine. The story of the ensuing delays and frustration experienced before the keel of the first 'true' submarine, NAUTILUS, was laid in June 1952, makes fascinating reading.

Dan van der Vat concludes his book by querying the cost-effectiveness of the present generation of immensely expensive nuclear-powered and -armed submarines when a diesel powered boat with the latest electronics and stealth technology can carry out most of the tasks performed by their nuclear sisters.

Stealth at Sea can be recommended with confidence.

LATENEWS

American Couple Plucked from the Pacific by Navy

By Tony Underwood

Petty Officer Shane Pashley pushed off from the Navy Seahawk helicopter 24 metres above the mountainous sea and 100 miles from the nearest land. Six metre waves were pounding the 13.4 metre ketch *GOODWIND*.

The wind was still gusting to about 25 knots when the two 816 Squadron aircraft spotted the yacht at about 1000. They and the aircraft were about 400 nautical miles east of Port Macquarie.

The two helicopters staged through there last night (24 June). They left at about 6am this morning and refuelled at Lord Howe Island before pressing on towards the disabled yacht.

Shane had the task of rescuing George and Dianna Goodwin, US citizens, caught in gale force winds and huge seas.

The Goodwins had a hand-held radio. It allowed them to discuss the rescue options with the crew the Officer-in-Charge of the Navy Detachment, Lieutenant Commander Tony Dalton, explained. Putting a flight crewman on board the heaving yacht was too dangerous.

Instead, Dr Goodwin launched the yacht's rubber dinghy on a painter, trailing some three or four metres behind the yacht, with Mrs Goodwin in it.

Shane was lowered on the winch and she was picked up and winched back into the aircraft and placed in a seat.

Shane went back for Dr Goodwin but there was a delay while he set about opening sea-cocks to scuttle *GOODWIND* -so as to avoid leaving a navigation hazard. He too was eventually lifted off.

"But not until I had taken a bit of a swim," said Shane. "It was a bit harder the second time."

The Goodwins were described as 'apparently unharmed, in good spirits but somewhat tired and quite relieved to get off'.

LCDR Dalton said that the helicopters had been given an accurate position because attention had been brought to the Goodwin's plight by a satellite electronic position indicating beacon which had been activated yesterday afternoon (24/6).

That and the attendance of Air Force Hercules and Orion aircraft, had provided an accurate position fix on the yacht. The Seahawk crews left the Goodwins asleep at Lord Howe Island and proceeded back to Naval Air Station Nowra.

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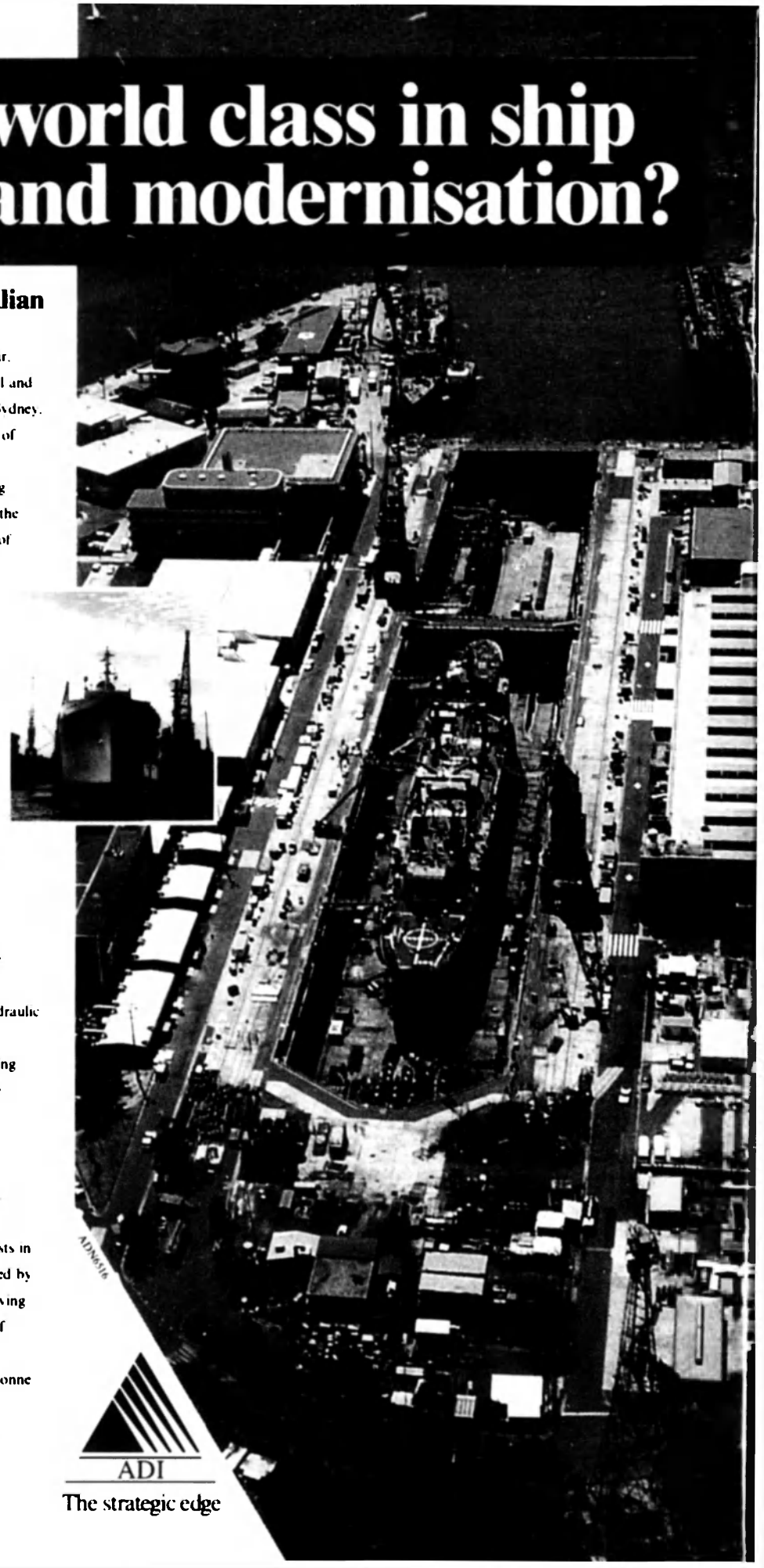

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The strategic edge

THE NAVY

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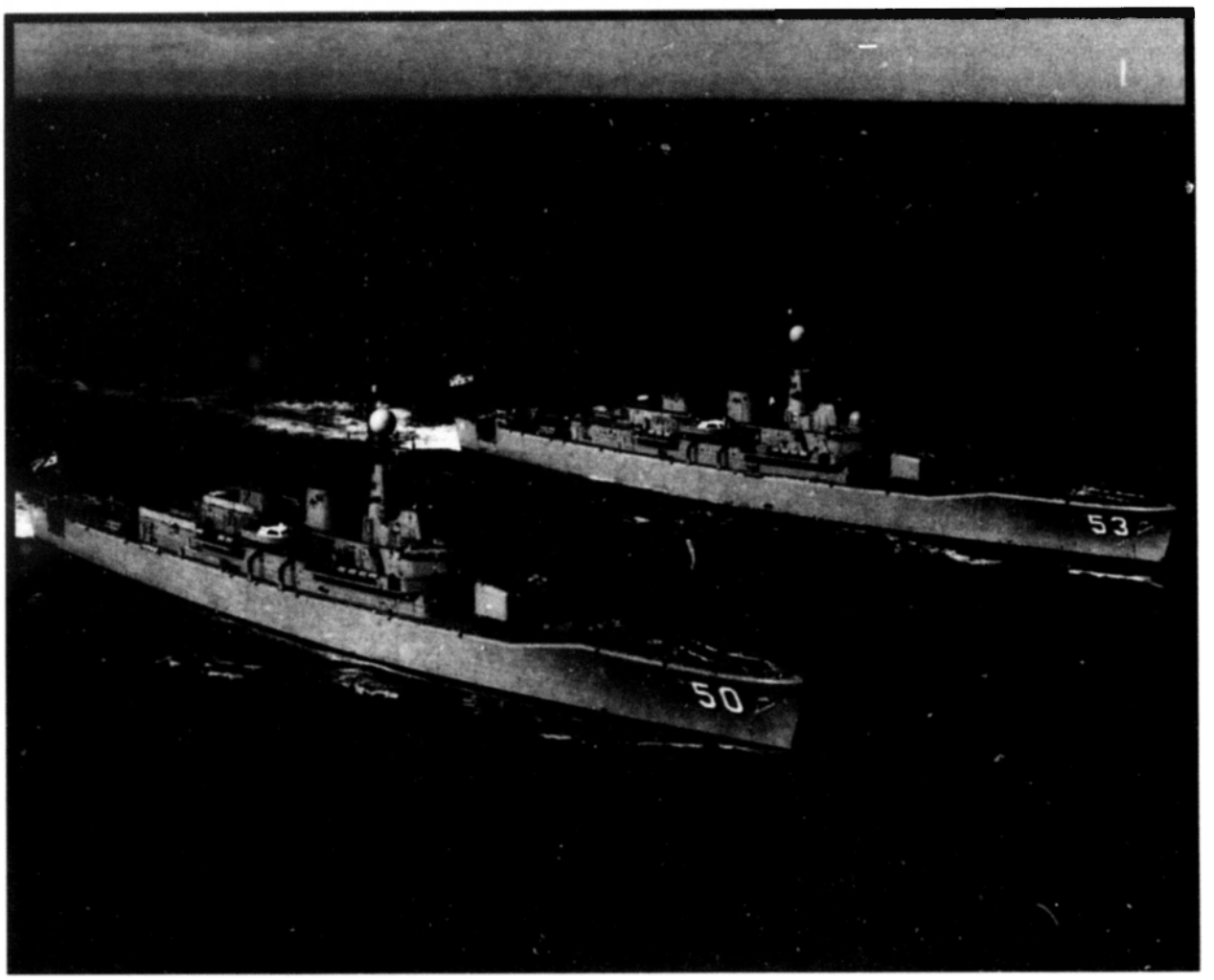

In this Issue

Regular Features

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viewpoint

FROM THE EDITOR

This October edition of* The Navy *will arrive at your home and in the news agencies only a brief time after the previous July magazine. Delays with editorial and then printing and distribution, meant that our last issue eventually 'hit the streets' about six to seven weeks late.

In the current magazine, we have maintained our focus of reports on the new ships and equipment, currently entering service with the RAN in 1996, with the first article describing the recent commissioning of HMAS COLLINS. In the next magazine, we hope to include a pictorial of life aboard the new submarine, similar to the Sea Riding ANZAC contribution in this edition.

The second of the Anzac class frigates was recently launched at Williamstown in Victoria and a description of the colourful event is published, courtesy of Navy Public Affairs Officer Antony Underwood. From the west, Vic Jeffery describes the last two RAN destroyer escorts in service, SWAN and TORRENS, together with plans to scuttle the former as part of an artificial fish breeding reef.

From abroad, is a resume of the trials of the new and very costly USS SEAWOLF, the first of a three submarine class, designed to counter recent improvements in Russian submarine technology.

In the next edition of *The Navy*, the major articles will include a tribute to the Daring class destroyer, HMAS VOYAGER and a detailed historical description of the early Australian colonial gunboats in service in the late 19th century.

viewpoint

FROM OUR READERS

Dear Sir,

I recently had the pleasure to visit HMAS PLATYPUS, the submarine base in Neutral Bay. The occasion was, what I think, the first open day held there for many a long year.

The Navy had two of the old Oberon class submarines open for inspection and a whole range of wharfside displays and other activities. I don't know how many people visited there for the day, but it must have been in the thousands.

Why can't the Navy have more of these 'people days' to enable us taxpayers to see what we are paying for. Anyway, we all had a great visit and I hope that one day the family can have a look inside the new COLLINS.

Yours faithfully,

M. Stevens
Newcastle NSW

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OUR FRONT COVER:
The Royal Australian Navy's last two River class destroyer escorts, HMA Ships Swan (foreground) and Torrens, sail from Western Australia for their final deployment in company.
(Photo - LSPH Shaun Hibbitt)

THE NAVY

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Copy Deadline for next issue: 9th November 1996

FROM OUR READERS

Dear Sir,

It was sad to read the Volume 58 No.2 "In Brief" report by Geoffrey Evans on the not unexpected deterioration of "Cerberus".

It was interesting to learn that yet again there are proposals afloat to rehabilitate the hulk in situ. Like past schemes the cost will probably be a determining factor. It seems to me that the option of removing the turrets and guns should be considered in this review.

They could be taken ashore, rehabilitated, and well looked after at say HMAS Cerberus and perhaps near "Polly Woodside". Thus something would be saved.

Yours sincerely
John Whitelaw
Red Hill ACT 2603

A photo of the crew of HMS TELEMACHUS.

Dear Sir,

I am sure that fellow readers of The Navy will be interested in three photographs I recently uncovered at home. Maybe someone can identify the date and location of each print.

Keep up the good work with the magazine. I always look forward to receiving my Navy League journal each quarter.

All the best.
D. Ley
Potts Point NSW 2010

Above: Shipboard scene, in summer. What ship and when was it taken.?

Left: Obviously the launching of the motor water lighter 256, but where!

HMAS Collins

By Vic Jeffery

Commissioning

Blessings, flags and a Navy Band featured in a unique cere-mony on Saturday, 27 July, at the Australian Submarine Corporation (ASC) at Osborn, South Australia, when the new submarine COLLINS was commissioned into the Royal Australian Navy.

Handed over to the Navy on 15 July by the ASC, COLLINS had the distinction of being the first submarine to be built in Australia.

The start of COLLINS' naval career began when the Commanding Officer, Commander Peter Sinclair, read the Commissioning Order before naval chaplains carried out the commissioning service and blessed the new submarine.

The boat became HMAS COLLINS when the Australian White Ensign and Australian National Flag were hoisted and the commissioning pennant was broken.

COLLINS was welcomed into the Australian Fleet in the presence of the Governor General, Sir William Deane, Minister for Defence, Mr Ian McLachlan, Chief of Defence Force, General John Baker, Secretary for Defence, Mr Tony Ayers, Chief of Navy, Vice Admiral Rod Taylor, and many other Australian and overseas dignitaries.

Commander Sinclair was piped aboard before the guard and ship's company boarded the boat to take possession of the vessel.

COLLINS is the first of six submarines being built for the Royal Australian Navy in a project worth an estimated $5020m at December 1995 prices, taking into account the contract with ASC and the cost of other project elements including integrated logistic support administration and the provision of Australian Government resources.

Collins to Date

In 1981 the Royal Australian Navy initiated a program to specify and procure a new class submarine incorporating an integrated combat system to replace the ageing Oberon class submarines.

Australia has one of the longest coastlines in the world, almost 23,000 kilometres, and practically all trade to and from this island continent is by sea. Some form of insurance is therefore necessary and the submarine with its ability to deploy unseen for long periods provides this insurance.

The Collins class submarines have been designed specifically to be capable of meeting the Royal Australian Navy's requirement of enhanced operational effectiveness, rapid response time, reduced manning and flexibility for improvement throughout their lifetime.

More than 100 Australian companies are participating in the program. The work being done in Australia is introducing significant new skills to Australian industry such as specialised steel production, complex welding, fabrication and machining techniques, software development, and processes associated with producing electronic and electro-optical systems.

This activity resulted in the award on 3 June, 1987 of a contract with the Australian Submarine Corporation for the design and construction of six submarines with associated services.

COLLINS has the distinction of being the first submarine to have been constructed in Australia and is the 18th submarine to have entered service with the Royal Australian Navy since 1914.

A major milestone was reached on 14 February 1990, when the Minister for Defence laid the keel for COLLINS at the Australian Submarine Corporation.

The submarine was launched by Lady Collins, widow of the submarine's namesake, Vice Admiral Sir John Collins KBE CB, before an audience of over 5000 guests on 28 August 1993.

The new submarines honour the names of men whose courage and devotion to duty epitomise the spirit and proud traditions of the Royal Australian Navy. The five follow-on submarines have been named FARNCOMB, WALLER, DECHAINEUX, SHEEAN and RANKIN.

Crest

The boat's crest represents the history of the submarine's namesake, Vice Admiral Sir John Collins KBE CB, and his achievements during the course of his naval career.

The Maltese Cross on the blue background represents the distinguished wartime service of Vice Admiral Collins in the Mediterranean Sea during the Second World War. The Double fouled anchor, is the symbol of Office of the Chief of Naval Staff in the Royal Australian Navy. British officers up until this time had held the position.

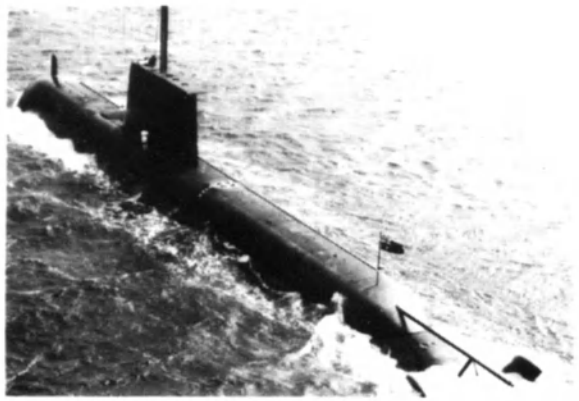
The motto "VANGUARD" is defined as "At the forefront". This represents that COLLINS is the leading submarine of the class, and at the forefront of technology.

The Boat

This submarine's operational characteristics and range have been tailored specifically for its defence and two-ocean surveillance role in the Royal Australian Navy.

Designed to be as quiet as advanced technology can achieve, COLLINS has been developed from five generations of submarines designed and built over the last 20 years for the Swedish Navy.

One of the first submarines to be totally designed using computers



COLLINS boasts a vast range of features. These include a high performance hull form, highly automated controls, low indiscretion rates, high shock resistance, optimal noise suppression, efficient weapons handling and discharge, and an operational air-independent propulsion system.

The single propeller submarine will move silently on electric power supplied to the propulsion motor by banks of new technology lead-free batteries. The batteries are recharged by three diesel generator sets.

The sophisticated combat system which gather intelligence from its sensors, computes the input and then launches and direct weapons - is an advance on any currently available.

Based at HMAS STIRLING, Fleet Base West, in Western Australia as a unit of the Australian Submarine Squadron, COLLINS is a now a formidable element in Australia's defence capability.

Sir John Collins

Vice-Admiral Sir John Collins was born on 7 January, 1899 and entered the Royal Australian Naval College as part of the initial intake in 1913. Graduating in 1916, he saw service with the Royal Navy's Grand Fleet in the battleship HMS CANADA during the Great War.

After his return to Australia, Lieutenant Commander Collins held various gunnery appointments and, following promotion, commanded the destroyer HMAS ANZAC. Promoted Captain in 1937, at the outbreak of the Second World War, he was Assistant Chief of Staff and Director of Naval Intelligence at Navy Office, Melbourne.

In November, 1939, Captain Collins assumed command of the light cruiser HMAS SYDNEY which played a significant part in operations against the Italian Fleet by the British Mediterranean Fleet in 1940. For his service, Captain Collins was made a companion of the Order of Bath.

He returned to Australia in May, 1941 and was appointed Chief of Staff to the Commander-In-Chief, China. On 16 January 1942, he became Commodore Commanding the British Far Eastern Squadron, changed to China Force on 20 January, with the rank of Commodore 2nd Class.

Commodore Collins was responsible for the evacuation from Java of British civilians and shipping. In recognition of his work Queen Wilhelmina of the Netherlands conferred upon him the honour of Commander in the Order of Orange Nassau. In March, 1942, following the Allied defeat in the Dutch East Indies, Commodore Collins was appointed Commodore-In-Charge, Fremantle and Senior Naval Officer and Sea Transport Officer, Western Australia.

In 1941 he departed for the United Kingdom to assume command of the cruiser SHROPSHIRE. On 13 June, 1944, Commodore Collins was made Commodore 1st Class and given command of the Australian Squadron which was then operating as Task Force 74 with the US 7th Fleet. He was the first RANC graduate to command the Squadron, hoisting his flag in the cruiser HMAS AUSTRALIA. On 21 October, 1944, whilst taking part in the American landings in the Philippines, AUSTRALIA was struck by a Japanese suicide aircraft. Thirty officers and men were killed and 64 died of wounds. Commodore Collins was seriously wounded and evacuated to Australia for recuperation.

He resumed command of the Australian Squadron in July 1945. In August that year, as Australia's naval representative, he attended the surrender of Japan aboard USS MISSOURI. In 1946 the United States Government conferred on him the Legion of Merit (Degree of Officer) for his service in the South West Pacific area.

In November, 1946 he left for the United Kingdom to attend the Imperial Defence College and with Commodore H.B. Farncomb was appointed Rear Admiral. They then became the first graduates of the RANC to attain flag rank.

In 1948 Rear Admiral Collins was appointed First Naval Member of the Australian Commonwealth Naval Board and Chief of Naval Staff, a position he held until February 1955. He was created a Knight Commander of the Order of the British Empire in the New Year Honours List of 1951.

Following his retirement from the Navy in 1955 Vice Admiral Collins was appointed High Commissioner to New Zealand, a position he held until 1962.

Vice Admiral Collins died on 3 September 1989.

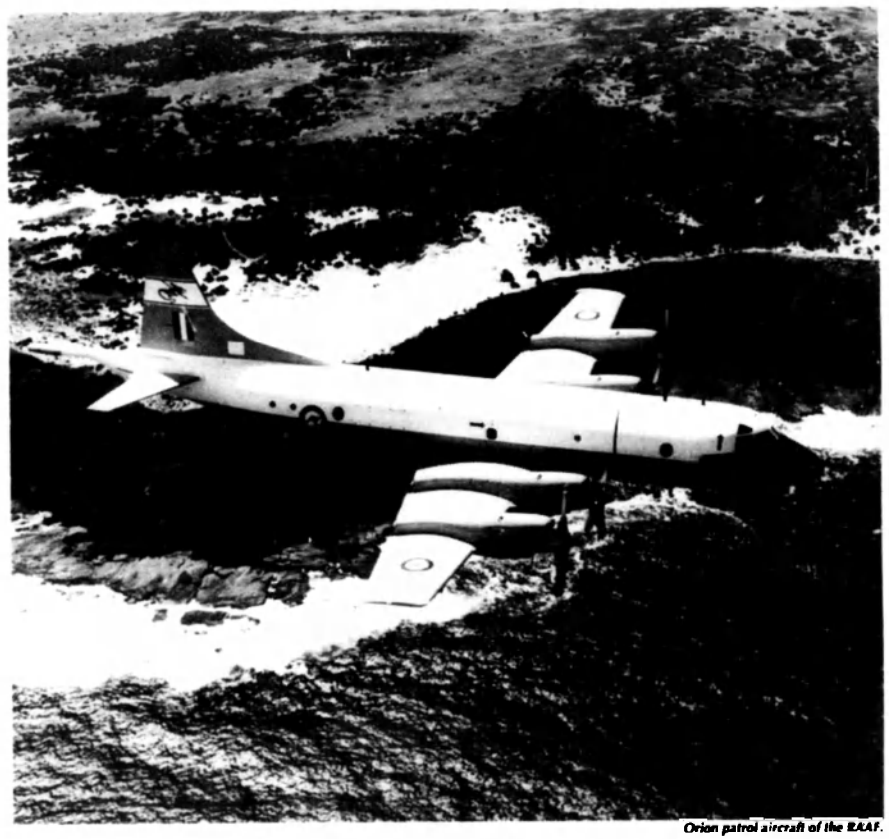
HMAS COLLINS (SSG-73) in Brief

Laid Down:	14 February 1990
Launched:	28 August 1993
Commissioned:	27 July 1996
Length:	77.8 metres
Diameter:	7.8 metres
Draught:	6.8 metres
Displacement:	3350 tonnes (submerged) 3050 tonnes (surfaced)
Propulsion:	Diesel Electric, 3 Hedemora VB 210 18 cylinder diesels; 5.4 MW Jeumont Schneider main motor; single shaft
Diving Depth:	in excess of 180 metres
Range:	In excess of 9000 nautical miles
Speed:	In excess of 20 knots (submerged) In excess of 10 knots (surfaced or snorting)
Complement:	42 (6 officers & 36 sailors) plus 5 trainees
Weapons:	Six forward tubes for Mk 48 wire-guided torpedoes and Sub Harpoon missiles

Australian Defence: Sea-Air Gap Isolationism Is Obsolete

By Navy Leaguer

The Australian Defence Force faces some tough decisions over the next seven or eight years.

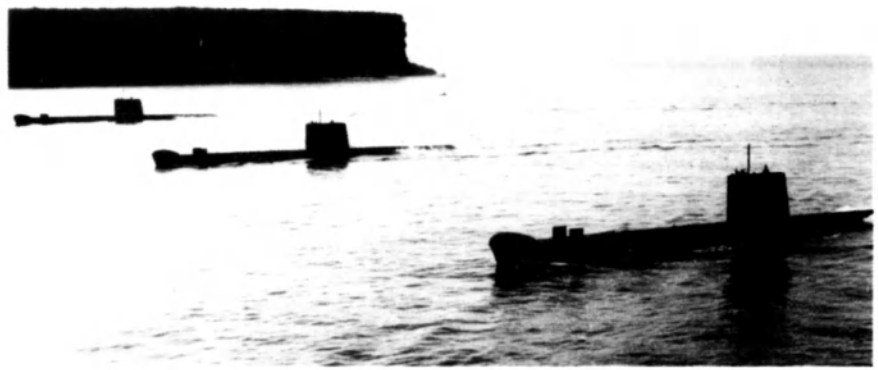


Orion patrol aircraft of the RAAF.

The prime reason for this is the major block obsolescence problem that has been allowed to develop in the RAAF. This coincides with a need to put the Army on a tooling for twenty first century land warfare in Australian circumstances and the requirement for a steady naval ship building programme to ensure continued maritime capabilities.

All this will coincide with what most of Australia's authoritative strategic experts see as a period in which the regional strategic situation may deteriorate dangerously.

The impending major problem of insufficient funding for capital equipment is already showing up in professional and bureaucratic debate within Defence and the ADF.



Australia's defence strategy will have to be subjected to penetrating review. This is the essential prerequisite for rigorous evaluation of every capital equipment project that will be presented over the next ten years.

The RAAF's P3C Orion long range maritime patrol aircraft, F111 long range strike aircraft, F/A-18 strike fighters, and C-130H Hercules transports will all fall due for replacement.

The justification for keeping the first three aircraft types in service inventory is the defence of the sea-air gap around Australia. The Orions detect an approaching surface enemy, apply some very long range striking power and participate in the defence of our overseas trade. The F111s strike them as far out as possible. Nearer home, the F/A-18s deal with any air attack on Australia itself and strike surface threats that get through the outer chain.

The C-130 Hercules role in supporting RAAF forces in their forward bases is also essential to the defence of the sea air gap.

The RAN also plays an essential role in the defence of the sea air gap. The submarines' prolonged covert reconnaissance capability can detect approaching surface and submarine forces and, if appropriate at that stage, strike at them.

Surface forces, with their helicopters, defend our overseas and coastal trade and provide a constant presence in our maritime approaches long and close range detection and strike capabilities.

It is important to recognise that air, submarine and surface forces complement one another in the defence of the sea air gap. Surface forces provide a long term constant presence capable of a range of actions (graduated responses) from deterrence by presence, through low level gun action, to full scale action with anti-ship missiles. The RAAF provides hard hitting power that can arrive very quickly, but whose only option is all out high level war. We need both.

Closer to shore, naval surface forces keep our ports and coastal trade routes clear of mines and support the Army logistically and with tactical and strategic troop movements.

Under the defence of the sea-air gap strategy, it is the Army's job to locate and neutralise any forces that penetrate successfully our sea-air gap defences.

The sea-air gap strategy is based on the fact that, with Australia's wide maritime approaches, defence technological edge and huge land mass, it is practicable to neutralise an enemy before they get here.

The sea-air gap policy evolved in the period following the end of the Viet Nam war to full scale implementation in the mid-1980s.

In itself the policy makes sense. How-ever, as implemented the sea-air gap policy assumed that as long as we could defend the sea-air gap no one could invade Australia so it did not matter what happened to the nations to our north.

The ADF force structure was developed solely to defend Australia and our area of direct military interest. No new equipment, no reorganisation, could be justified in whole or in part on its need in operations outside Australia's area of direct military interest.

This was an isolationist policy.

Even at its start it was offset by Australia's continued membership of the defence agreement with Malaysia and Singapore. Although this was diluted by the withdrawal of the RAAF strike fighter squadrons from Malaysia with the retirement of the Mirages, the RAAF maintained involvement in the five power air defence command structure. RAAF Orions deployed regularly through the area and other aircraft participated in joint exercises.

The RAN deploys regularly in south-east Asian waters and has access to support facilities.

The extent of all these activities has increased steadily to the point where there is now a series of bilateral exercises with several regional powers. The RAN has very close professional relations with a number of regional navies.

This steady increase in regional involvement has the support of both main stream Australian political parties. In developing regional defence relationships, Defence and Foreign Affairs have worked together.

The time is fast approaching for the realities of our foreign affairs and defence policy to be reflected in the force structure of the Australian Defence Force.

This means a balanced force, with the ability to provide governments of the future with a range of options varying in strength from patrol forces to strike forces.

These options should recognise Australia's inherent and established strengths and weaknesses. These strengths are technological and our weakness is a large sparsely populated area with a small recruiting base.

Thus the best and most cost effective way we can contribute to regional military security is with maritime forces - forces that operate on, under and over the sea. We do not have, and our small population (in addition to other factors) will ensure that we never have, sufficient land forces to make a major contribution to regional security with land forces.

IN BRIEF

By Geoffrey Evans

Change of Owner

Earlier in the year the UK magazine SHIPS MONTHLY reported the sale of the Trafalgar House group of companies to a Norwegian engineering and shipbuilding firm, Kvaerner. To those unfamiliar with the shipping industry this would not have meant much if anything at all, but it so happens Trafalgar House is the parent company of one of the world's most famous shipping lines - Britain's Cunard Line.

It is hard to believe that a company founded in 1839 and which has for so long operated a line of great passenger ships, the best known perhaps being the Queen Mary and Queen Elizabeth and which still operates a number of fine ships, should pass from British hands; however, along with Britain's decline as a major shipbuilder and her reduced status as a maritime power, it is only one of the trials and tribulations that have beset Britain since World War 2.

Most of Cunard's passenger fleet is engaged in the cruise trade at the present time and this is expected to continue for the time being, however Kvaerner is not a cruise operator and it is anticipated the fleet will eventually be sold.

Shipping Reform

Reform of the Australian shipping industry which has been underway - barely - for many years, proceeded a little further when the Coalition took office in March and introduced a Bill to repeal the 7% taxable capital grants and the PAYE grants, effectively removing support for the industry.

A further move was made in mid-August when the Minister for Transport and Regional Development (Hon. John Sharp) announced the formation of a new reform group headed by the chief executive of the Perkins Shipping Group (Mr. Julian Manser) and consisting in the main of representatives of major firms with a stake in an efficient industry.

An interesting appointment is the New Zealand manager of BHP Transport" to provide the group with an important perspective on New Zealand's successful shipping reforms".

Also of interest is the exclusion of the Maritime Union of Australia. The Australian Shipowners Association is represented by its chairman (Mr John Hurlstone).

According to the Minister's statement, formation of the group" allows industry to have an input into the government's election commitment to make Australia's shipping industry internationally competitive by removing cabotage protection of Australia's coastal fleet and examining a second register for the international sector".

Whether or not the group, essentially an advisory body, will have a significant effect on the government's current shipping reform plans remains to be seen; governments come under all manner of conflicting pressures.

The group has been requested to report by the end of the year.

HMVS CERBERUS

Further to previous "In Brief" references to the former Victorian monitor, "*The Age*" newspaper in August carried an article on the gradual subsidence of the wreck at Half Moon Bay under the heading:

"Mighty war ship finds its nemesis: a hungry worm". It was reported that the teredo worm was destroying the waterlogged timbers of the new submerged wooden decks.

The article went on to report the chairman of the National Trust saying "the Cerberus was the most significant wreck in Victorian history and the world's finest battleship in its time".

While the last part of the chairman's statement might raise a few eyebrows, the National trust is to be commended for working with the Bayside Council (owners of the Cerberus) on a $10 million 5 year plan to partly restore the old ship and connect it to the shore with a walkway.

ARUNTA Launched

The sun smiled from a blue, Melboume winter sky as ARUNTA, second of our Anzac class frigates, slid easily down the Williamstown slipway on 28 June.

By Antony Underwood

The third of the ANZAC ships, ARUNTA, heads for the water at Williamstown in mid year. The new RAN frigate was launched by Mrs Dulce Morrow on 28 June. (Photo - ABPH Dean McCorkelle)

The sky clouded briefly as the haunting, sad sounds of Arrernte tribal women was carried by the public address system across the empty slipway.

The songs were a sharp contrast to the cheers of jubilation by all, particularly Transfield Defence Systems (TDS) artisans, as the 1980 tonnes of metal - the displacement of ARUNTA to date - headed for the water, to be 'rounded up' by waiting tugs. And the displacement is a long way short of what will be the new ship's lightship weight of 3600 tonnes after TDS has carried out the final 33 per cent of the work on superstructure and internals to ready her for sea trials.

ARUNTA is a proud name in RAN history. The first of the name earned the respect of both the enemy and those who served in her during the period she was in commission, barring refits, of well over 20 years. Many of the 'old and bold' - some 200 of the ARUNTA Association veterans - welcomed the opportunity to witness and celebrate the launch of the new frigate bearing the name.

CNS comparison

The Chief of Naval Staff, VADM Rod Taylor, drew comparisons between the two ships of the name.

ARUNTA I was one of the fastest and most aesthetically appealing warships to be designed in Britain. Like her sister ships, BATAAN and WARRAMUNGA, she was built at Cockatoo Island Dockyard in Sydney and was considered fast and capable from the outset.

VADM Taylor said a comparison between the two ships, apart from the change in weapons systems and addition of a helicopter, reflected the vast changes over the past half century.

"The first ARUNTA was 2600 tonnes, had an all-male complement of 261 and cost some 500,000 Pounds to build," he said. "ARUNTA II will displace 1000 tonnes more but will only be about four metres longer and will be crewed by a total of 163 men and women and will cost approximately $500 million to build."

"She is being built by Australians to be crewed by Australians and I am keen to add these fine new ships to the Fleet. I look forward to seeing ARUNTA in her natural element."

Greater capability?

"Significantly the ship has been designed with the challenges of the 21st century in mind," Mrs Bronwyn Bishop, Minister for Defence, Science and Personnel said. "Defence is considering a warfighting improvement program which would enhance the capability of the ships."

Mrs Bishop also described the alliance with Australia's ANZAC ship partners as 'one of our most important'. "No two countries in the world have a closer identity of fundamental strategic interests than Australia and New Zealand," she said, "and few have such long traditions of close military cooperation, nor such diverse and

intimate contact in the day-to-day business of maintaining and developing defence capabilities.

"The ANZAC Project is one example among the many that encapsulate the objectives that form the basis of the closer defence relationship."

Mrs Bishop said she was 'particularly pleased' that about three quarters of the total contract price of the ANZAC Ships Project is being spent in Australia and New Zealand.

"Most of this work is being allocated to a wide variety of subcontractors - over 1300 I understand - and will be disseminated to most areas of the construction, electronic and computer industries," she added.

"This high level of local industry involvement also makes a significant contribution to our policy of self-reliance. However, we cannot hope to become truly self-reliant until we can support platforms like these throughout their operational lives. The evolution of the support arrangements over the next few years will be critical."

The slipway clanked and creaked ominously through the interdenominational service by Navy chaplains as chocks were removed. The congregation responded in the Naval Psalm and sang the Naval Hymn before the benediction was pronounced.

Launch Lady was Mrs Dulce Morrow, widow of the late Commodore James Cairns Morrow, who as a Commander was the first CO of ARUNTA 1, a command distinguished by the fact that she became the only Australian ship ever to sink an enemy submarine, the Japanese boat RO33, off Port Moresby while acting alone. The (then) Commander Morrow was subsequently awarded the Distinguished Service Cross for the feat.

"God bless her and all who sail in her," said Mrs Morrow in a ringing voice, before curring the ribbon to smash the bottle of (Australian) champagne on the bow a split second before ARUNTA started to move.

Perhaps the bravery award of the day, however, went to the dancers of the Arrernte Tribe who came to Melbourne from their home in the Northern Territory to perform a traditional corroboree to protect the new ship from the evil influences from sky or sea.

Aboriginal dancers and singers from the Arrente tribe of Alice Springs in central Australia, carried out the traditional corroboree on the slipway after the launch. (Photo - POPH Scott Connolly)

Commanding Officer Designate of ARUNTA, Commander Greg Yorke and the Launch Lady, Mrs Dulce Morrow (wife of the first CO of the first ARUNTA).

Corroboree

Five singers chanted a haunting melody punctuated with traditional percussion instruments while the five dancers braved the winter chill to perform bare to the waist with spears in a five minute rendition of the ancient ritual on a platform near the slipway.

Transfield's Managing Director Mr Paul Salteri said the launch combined Australia's Naval and cultural heritage with an expanding industrial capability.

"I welcome the ARRERNTE people on hand to witness the launch and bless the ship with this traditional ceremony," he said. "Your presence today reminds us to appreciate our heritage and look to our future."

Mr Salteri said TDS's Williamstown Shipyard has now 'hit top gear' in production of ANZAC frigates.

"Mrs Bishop cut the first steal for the sixth ANZAC Class ship," he said. "Today we are working on five ships simultaneously."

Delivered with functional systems

ANZAC was delivered on schedule, within budget and with its ship and combat systems functional, believed to be a world first for this type of ship.

"HMAS ANZAC, the first of the Class has proven a strong and capable ship in sea trials and has met or exceeded contract specifications." The keel of the second New Zealand ANZAC ship, TEMANA, was laid shortly after ARUNTA was launched.

The Royal Australian Navy In The Vietnam War

By Joe Straczek, Senior Naval Historical and Archives Officer

HMAS DUCHESS, enroute to South Vietnam, as an escort for HMAS SYDNEY.

Early Goodwill Visits

Though the RAN did not become operationally involved in the Vietnam conflict until 1965, HMA Ships VAMPIRE and QUICKMATCH were the first ships in the area when they made a goodwill visit to Saigon in 1962. They were followed the next year by the Q Class frigates HMA Ships QUIBERON and QUEENBOROUGH. These were not operational visits, but designed to show Australian government support for the government in Saigon, and members of the ships company visited the Vietnamese Special Forces training centre and carried out other 'flag showing' activities. During the 1963 visit the small Vietnamese naval vessel KYHOA accidentally rammed and holed QUIBERON whilst coming alongside her.

Vung Tau Ferry

As the overall role of Australia's military increased in Vietnam so did the involvement of the RAN. The converted aircraft carrier HMAS SYDNEY had been transporting Army personnel and equipment from Australia to Vietnam since May 1965. This ship was to become a familiar sight and temporary home to some 16,000 Australian military personnel as they deployed to Vietnam or returned to Australia. Because of these troopings runs SYDNEY was affectionately known as the 'Vung Tau Ferry'.

During these deployments SYDNEY was escorted and protected by other units of the RAN. On one such trip her escort included the aircraft carrier HMAS MELBOURNE, though MELBOURNE did not enter Vietnamese waters.

Clearance Diving Teams

In May 1966 the RAN's underwater Clearance Diving Team 1 (CDT1) spent a short period in Vietnam working with USN divers. Almost a year later the Australian government announced the deployment of Clearance Diving Team 3. This team was made up of personnel from the RAN's two existing diving teams, CDT1 and CDT2, and after a period of additional training arrived in Vietnam on 6 February, 1967.

RAN CDT 3 was primarily employed in clearing rivers and shipping channels of mines and booby traps laid by the Viet Cong. This normally dangerous task was made especially so by the murky conditions under which the divers had to work. Other tasks assigned to the divers included salvage work and assisting in trawler and ship searches.

Regular searches were also conducted of Australian Army water transport and other ships. This task was known as Operation STABLE DOOR and was intended to protect and secure South Vietnamese ports and military shipping from sabotage by the Viet Cong. As part of this operation RAN clearance divers conducted about 7500 ship searches.

While the Clearance Divers operated as a distinct unit a number of personnel were attached for short intervals to USN diving teams. Such attachments provided the RAN clearance divers with valuable experience and exposure to other operating techniques. Perhaps the most unusual request for assistance received by the RAN clearance divers came from the US Army 36th Evacuation Hospital: they had just admitted a patient who had eaten some C-4 explosive.

On The Gunline

In March 1967, one month after the announcement of the deployment of the Clearance Diving Team to Vietnam, the (then) Minister for the Navy, Mr Don Chipp, announced that the RAN's newly commissioned guided missile destroyer HMAS HOBART would be deployed to join the US Seventh Fleet to support operations off the coast of Vietnam.

HMAS SYDNEY at sea, with the embarked troops and helicopters.

HOBART departed Sydney on 7 March 1967 and joined the US Seventh Fleet on 15 March. Her arrival at the US Naval Base in Subic Bay began the six monthly rotation of RAN destroyers which was to last until October 1971.

All of the RAN's guided missile destroyers deployed to Vietnam as did the Daring Class destroyer HMAS VENDETTA. HOBART and PERTH made three deployments each and BRISBANE made two. During the course of these operations the destroyers fired over 100,000 rounds of ammunition in support of military operations and steamed 397,484 miles.

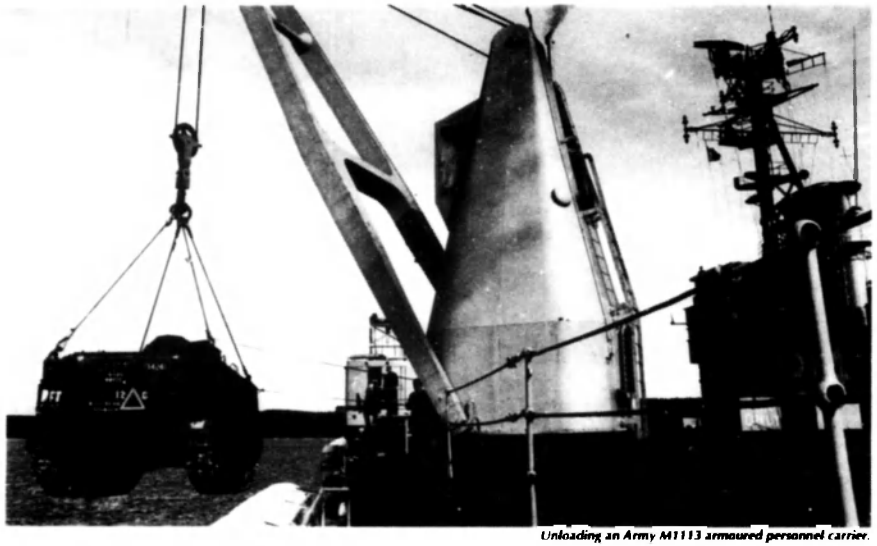
Typically the destroyers were operating on the 'gunline' providing fire support to Allied forces. They also took part in Operation SEA DRAGON, the name given to surface ship operations against North Vietnam. At various times the commanders of RAN ships were delegated command of the 'gunline' and SEA DRAGON operations. Other tasks performed by the destroyers included screening the US carriers on YANKEE Station and, in the case of PERTH, supervising an abortive return of POWs to North Vietnam.

VENDETTA, which served in Vietnam from September 1969 to April 1970 was the only Australian-built destroyer to deploy. With her six 4.5 inch guns and 40 mm Bofors she was more like a light cruiser than the typical American destroyer.

On several occasions the destroyers operated close inshore and were fired upon by North Vietnamese shore batteries. However, the only fatal casualties onboard these ships occurred when HOBART was attacked, on 17 June, 1968, by an aircraft later identified as belonging to the USAF. Two sailors were killed and a number wounded. HOBART returned to Subic Bay for repairs.

While they were in the operational area the RAN destroyers were supported

Army vehicles, LARCs and Iroquois helicopters share HMAS SYDNEY's flight deck.



Unloading an Army M113 armoured personnel carrier.

by USN replenishment ships. At regular intervals the ships visited Singapore, Hong Kong and the Philippines. This was to allow maintenance to be carried out and to provide shore leave and rest for the ship's crew.

Logistic Support

General logistic support to the Australian military forces operating in Vietnam was provided by SYDNEY supported by the merchant-ships JEPARIT and BOONAROO. The latter two were initially manned by civilian crews but had to be commissioned into the RAN due to union bans. BOONAROO was the first ship to commission into the RAN under the distinctive Australian White Ensign. These ships transported almost 200,000 DWT of cargo to South Vietnam with JEPARIT making a total of 42 trips. As well as providing logistic support for the Australian Army and RAAF other RAN personnel served ashore in Vietnam.

RAN Helicopter Flight Vietnam

Members of Australia's Fleet Air Arm served with the US Army's 135th Assault Helicopter Company based at Vung Tau and with the RAAF's 9 Squadron. Known as the RAN Helicopter Flight Vietnam (RANHFV) the first contingent of pilots and support personnel arrived in Vietnam on 16 October, 1967. These personnel were quickly integrated into the 135th which was designated as an Experimental Military Unit or EMU. On the 22 February, 1968 the RANHFV suffered its first fatality when LCDR PJ Vickers died as a result of wounds received when his aircraft was hit by ground fire.

Throughout their service in Vietnam members of the RAN Fleet Air Arm provided tactical airlift and gunship support to Australian and allied forces.

Medical and Support Personnel

Members of the RAN also served at the Headquarters Australian Forces Vietnam and as detached medical officers. This second group were RAN doctors who served with 1st Australian Field Hospital and US Army and Navy hospitals. While serving in this capacity the Navy doctors were also involved in the Medical Civil Action Program which provided medical support to the local civilian population.

Withdrawal

In April 1971 the (then) Prime Minister Mr John Gorton announced that Australian forces in Vietnam would be reduced. This led to the withdrawal of the clearance divers in May and the RANHFV in June. The final RAN destroyer on the gunline, BRISBANE, returned to Sydney on October 15, 1971.

The Whitlam Labor government withdrew all Australian forces from and stopped military aid to South Vietnam. JEPARIT returned to Sydney from her final voyage on March 11, 1972 and was followed the next day by SYDNEY.

During the 10 years that the RAN was involved in the war, eight officers and sailors were killed and another 46 were either wounded or suffered other injuries. The dedication and professionalism shown by members of the RAN earned the Service the respect of our Allies and continued the traditions established by Australian sailors in other wars.

RAN SHIPS IN SUPPORT OF THE VIETNAM WAR

Gunline Destroyers
HOBART
BRISBANE
PERTH
VENDETTA

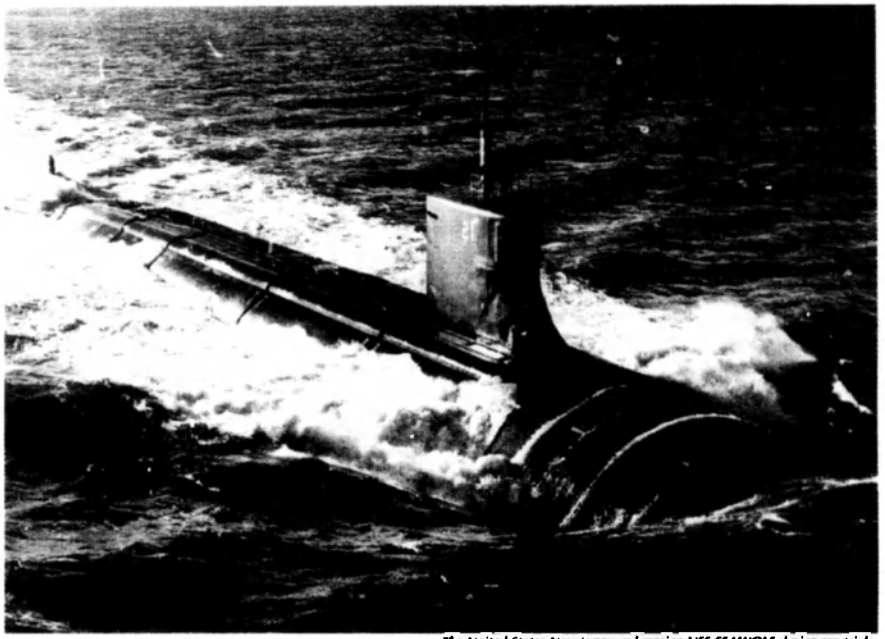
Logistic Support
SYDNEY
BOONAROO
JEPARIT

Escorts
ANZAC
DERWENT
DUCHESS
MELBOURNE
PARRAMATTA
STUART
SWAN
TORRENS
VAMPIRE
VENDETTA
YARRA

New USN Submarine At Sea

US Navy and shipbuilding industry officials have reported that the initial trials of the service's SSN-21 Seawolf attack submarine herald a new era in undersea warfare.

By Robert Holzer



The United States Navy's new submarine USS SEAWOLF during sea trials.

The combination of the speed and the stealth and the weapon-carrying capacity of this ship really makes it the most powerful warship in the world: not just the most powerful submarine," Admiral Bruce DeMars, director of naval nuclear propulsion, described the initial sea trials.

Designed for the Cold War, the Seawolf has proved politically controversial in the American Congress, where debate raged throughout the early years of this decade over whether the submarine should even be completed. Ultimately, the Pentagon and Congress decided to fund three Seawolf-class submarines to protect the submarine industrial base until a new, lower-cost submarine can begin construction by 1998. Policy-makers also wanted to ensure the Navy received some capability for the investments it made in the Seawolf for more than a decade.

On 5 July, the submarine concluded her trials four hours earlier than planned because the voyage was almost completely uneventful, Navy officials said.

"It was a truly remarkable sea trial," DeMars said. "There is virtually nothing that's of any importance that is not working on board."

Seawolf is built by General Dynamics Corporation's Electric Boat Division, Groton, Conn. Design, development and construction of the submarine has been under way since the early 1980s, with two additional submarines of the class are still under construction at Electric Boat. The shipyard will deliver the Seawolf to the Navy in October, Neil Ruenzel, Electric Boat spokesman, said. Future trials will test the submarine's combat and weapon systems, he added.

Seawolf's capabilities, particularly its level of quietness, are important because the Russian Navy is building a new class of attack submarine, called the Severodvinsk, that is expected to be more quiet than the SSN-688 Los Angeles-class submarines the US Navy operates today.

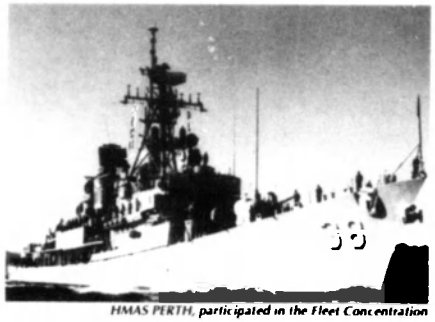
"When a 688 is making 30 knots underway, that submarine is much, much noisier than this ship is", DeMars said. "So with the stealth of this ship, and with its big magazine, it can carry out missions with great flexibility and can be places in the world without people knowing that they're there."

The Russian Severodvinsk submarine is thought to be under development know and could be fielded as early as 1997, according to estimates by naval intelligence.

Other upgraded Russian submarines, like the Improved Akula, also are challenging the under-sea superiority the US Navy has long enjoyed.

Russian submarines also have renewed their shadowing of US Navy aircraft carrier battle groups over the last year. The Russians had abandoned this practice in the late 1980s because of budgetary and political difficulties at home.

Navy in Darwin



HMAS PERTH, participated in the Fleet Concentration

New Zealand frigate, HMNZS WAIKATO.

About 2400 sailors and ten major ships from the Royal Australian Navy and Royal New Zealand Navy arrived in Darwin on Friday, 9 August prior to one of the Navy's main training activities of the year.

The Fleet remained in port for four days before departing 12 August for the RAN's Fleet Concentration Period, an intensive sea training activity involving the Royal Australian Navy, Royal New Zealand Navy, Royal Australian Air Force and Royal New Zealand Air Force.

The Fleet Concentration Period occurred in the waters off Northern Australia until 23 August. A squadron of Royal New Zealand Air Force A-4 Skyhawk fighter aircraft operated from RAAF Darwin during the daylight hours of the Fleet Concentration Period, while Royal Australian Air Force strike and fighter aircraft flew both day and night missions from RAAF Tindal.

The Commanding Officer of Darwin's HMAS COONAWARRA Fleet Support Base, Captain Andy Mackinnon, said all Navy men and women based in Darwin worked at full capacity to ensure those at sea obtained the maximum support and training value from it.

The fleet visit also proved to be a significant boost to the local economy, with many of the ships stocking up on stores and giving their crews leave in the city.

Visiting Australian ships included the guided missile destroyers PERTH and BRISBANE, guided missile frigates ADELAIDE and NEWCASTLE, destroyer escorts SWAN and TORRENS, the replenishment ship WESTRALIA, submarine ORION and patrol boats FREMANTLE and TOWNSVILLE.

The Darwin based patrol boats HMAS CESSNOCK, GAWLER, DUBBO and WOLLONGONG and the landing craft BALIKPAPAN were also involved.

New Zealand ships included the frigates HMNZS CANTERBURY and WAIKATO and the replenishment tanker ENDEAVOUR.

Australia and US Agree on Nulka Decoys

The Minister for Defence, Ian McLachlan, MP, recently announced that Australia has signed a Memorandum of Understanding (MOU) on the joint production of Nulka decoys for the Royal Australian Navy (RAN) and United States Navy (USN).

The Nulka decoy, designed to provide protection against anti-ship missiles, is derived from the Defence Science and Technology Organisation's hovering rocket, and was jointly designed by Australian and US industry.

The initial joint production run under the MOU will be carried out by British Aerospace Australia Pty Ltd, and will involve a number of Australian and US companies as subcontractors. Mr McLachlan said "The agreement to enter into joint production demonstrates that Australian industry has now achieved world standards in an area of highly sophisticated technology."

He said the purchase of Nulka by the RAN and USN shows the confidence that the Australian and United States Defence organisation have in Australian designed and produced high technology products.

It is expected that Nulka will be in service with the RAN for more than twenty years from late 1998 onwards. The RAN intends to carry the Nulka decoy onboard its FFG guided missile and Anzac Class frigates.

Navy Clears Harbour Minefield

The Royal Australian Navy's inshore minehunter (MHI) HMAS SHOALWATER made history on Friday, 9 August, when she conducted the first "lead through" of a submarine between North Head and South Head.

The exercise involved the twin-hulled 178 tonne minehunter leading the Oberon class submarine HMAS ONSLOW through a swept channel within a minefield into the Pacific Ocean.

Under the command of LCDR Barry Jones, SHOALWATER rendezvoused with ONSLOW at Middle Head, to travel at 6 knots to clear the Heads at 0930.

"Lead through" exercises are held about six times a year, normally in the Jervis Bay and Shoalwater Bay areas.

HMAS SHOALWATER, leads the submarine HMAS ONSLOW through Sydney Heads in August.

Navy Week 1996

For the Naval Support Command, its largest public event in Australia, is undoubtedly the annual Sydney based Navy Week. This year it is being held at the Fleet Base East between Tuesday, 1 and Monday, 7 October.

The week commemorates the arrival in Sydney of the infant RAN Fleet, when seven warships, led by the flagship and battlecruiser HMAS AUSTRALIA, sailed into the Harbour for the first time.

RADM David Campbell, the Flag Officer Naval Support Command, will officiate at the first formal event, the Navy Week Cenotaph service in Martin Place on 1 October, with representatives from the RAN and various ship associations present.

For the Sydney public a number of new attractions and innovations have been planned for the Fleet Base East on both Sunday, 6 and Monday, 7 October. As a start, the new frigate HMAS ANZAC will open her gangways to the public and when onboard, a giant video screen will bring the ship to life for all visitors. As well as ANZAC, three other ships will be open for inspection including the DDG PERTH and the FFGs MELBOURNE and NEWCASTLE.

Naval aviation enthusiasts will be well catered for, with examples of Seahawk, Sea King and Squirrel helicopters present onboard the frigates or performing aerial displays with the clearance divers.

For the kids, the Command has arranged free displays by a "fleet" of powered model warships, inflatable jumping castles, nautical clowns, boat rides and the always popular Naval police dogs from HMAS Albatross. Other attractions will include the Naval Aviation Museum, Historical Collection, Recruiting, Photographic Unit, Hydrographic Branch, mine warfare, submarine community and the naval gymnasium.

Musically, the RAN band and the ever popular jazz player Don Burrows will be performing in concerts on the wharfside. Performances will be held at 1130, 1400 with a ceremonial sunset at 1615.

All four ships will remain open to 1700, with a laser light show likely to be projected onto the side of a frigate's helicopter hanger, the finale for each of the open days.

LOTE

The first Sea King helicopter from HS 817 Squadron to receive a Life of Type Extension, with the patrol boat HMAS WARRNAMBOOL.

The first HS 817 Squadron aircraft to complete the Life of Type Extension (LOTE) program has conducted its first operational sortie. Sea King 907 completed a passenger transfer sortie with HMAS WARRNAMBOOL off Jervis Bay. This represented the culmination of many months work on the $55 million contract being completed between December, 1995, and December, 1996. The serial was the first passenger transfer serial to be conducted by a Sea King with an FCPB in almost 15 months and provided an excellent training opportunity for ship and squadron staff alike.

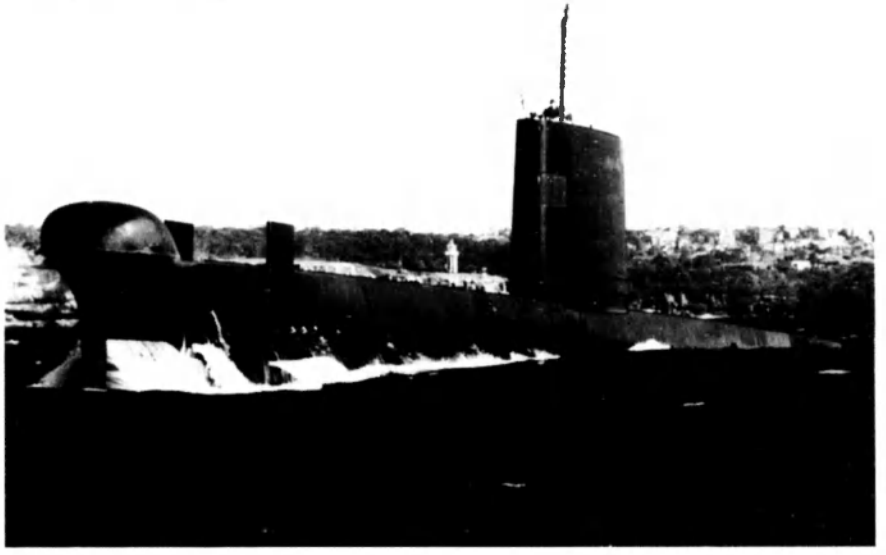
HS 817 Squadron operates 5 Sea Kings in the Maritime Utility role from the Naval Air Station at Nowra. One Sea King also forms a flight in HMAS SUCCESS recently operating in Hawaiian waters during Exercise RIMPAC '96. The Squadron also regularly embarks in HMAS TOBRUK and maintains its skills in ASuW and ASW weapons training.

The post LOTE aircraft has received updated avionics, including radios, radio navaids, doppler navigation equipment and a new radar display. Further internal cabin enhancements now mean the aircraft can carry up to 18 passengers 'comfortably' seated. Extemally, the most obvious feature is the Engine Air Particle Separator (EAPS) located on top of the forward cabin. This system removes airborne particles via a scavenge system and protects the engine compressor blades from damage. With these new enhancements, the Sea King will serve the Navy well into the next century.

The auxiliary minesweeper, BROLGA, departing Sydney for mine countermeasure trials along the NSW coast.

PSS PRESIDENT H. I. REMELIK, the 21st Pacific Island patrol boat, running trials in Cockburn Sound, Western Australia. The boat has since been handed over to the Republic of Palau. (Photo ABPH Darren Yates)

The last of the original four Oberon class submarines ordered for the RAN, HMAS ONSLOW sails for exercises from her base, HMAS PLATYPUS on 9 August 1996. The previous Sunday, both OTAMA and ONSLOW were opened to the public, with more than 7000 visitors boarding the boats and inspecting the shore facilities.



The guided missile frigates, HMAS ADELAIDE and HMAS CANBERRA (rear) have recently undertaken a deployment to South East Asia. (Photo - ABPH Stuart Farrow)

Sea Riding ANZAC

By Graeme Andrews

Things have changed quite a lot since I signed on in 1955 and no-where was this better illustrated than when I found myself in Brisbane, gazing at the new frigate HMAS ANZAC (3) as she lay at the Cairncross Dock wharf.

Pre-commissioning view of the new ANZAC.

ANZAC had been in commission less than three months and is the first of eight similar ships of the German-designed Meko 200 type which will be built for the RAN by Transfield in Willimstown, Victoria.

Today's RAN is no longer the most powerful indigenous force in Australia's areas of interest and influence, as it was in the 1950s and 1960s. Over the last decade or so, it has slipped considerably in capability, specifically since aircraft carrier MELBOURNE retired without replacement, when compared to local neighbours. ANZAC and her sisters, combined with the six FFGs are intended to stop this qualitative slide.

The ANZACs will act as an extension to the more capable FFGs, while bringing certain additional attributes, such as a naval gunfire support capability by means of the single 127mm (5in) gun. The ships were completed with about half its intended weapon fit, thus allowing the RAN to get eight ships afloat rather than having four fully equipped frigates. It is to be hoped that our politicians don't forget the rest of the gear before making service commitments as did Prime Minister Thatcher at the Falkland Islands, in 1982.

ANZAC is 118m overall (about the same length as the RAN's now-retired Daring class). She is very beamy at 14.8m, being a little "fatter" than the much longer FFGs and DDGs. The Darings were 13.1m. This combined with a full length superstructure, gives the new ships the internal feeling of being aboard a small cruiser and provides a great amount of space for accommodation. The accommodation is intended for only 164 people of which some 15 or so are females who have their own fully-equipped messdeck.

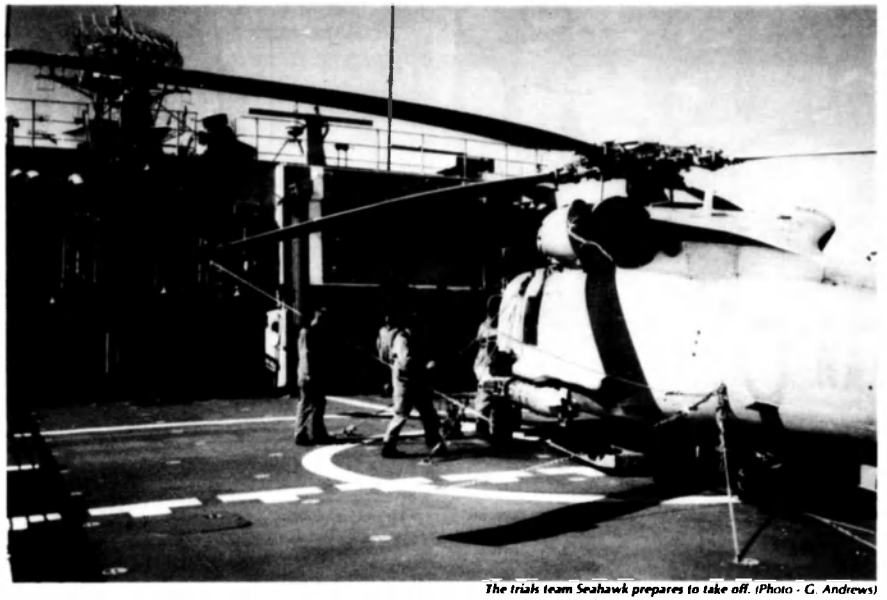
The big improvers in the accommodation stakes are the lower deck sailors, particularly Chiefs and Petty Officers, but junior ranks are much better off in most ways, although that point of view is hard to accept until you've tried the earlier version.

One down-side, to me personally, was the complete air-conditioning of the ships. Those of our readers who have enjoyed the proximity of an open scuttle and wind-scoop in the tropics, will know just how good that is, until a slop of salt water spoils the feel! There are no scuttles in the ANZAC and, oddly enough, when the VOYAGER disaster is recalled, no hull-side escape hatches. All escape hatches are vertical. The ship is sub-divided into many more compartments than my memory can recall on the Darings or the "Q" class frigates, particularly in the vicinity of the machinery spaces. This should improve the ship's survival chances in action and these have been enhanced by lessons learnt from the Falklands actions.

For example; all the ship's company sleep on inner spring mattresses! The covers are of fire retardant material, as are the issued doonas, which have replaced the old naval blankets and bed spreads. Mess rooms are carpeted while passages are still washed and polished. There are short-term breathing masks in many accessible racks.

Washrooms (Heads?) in ANZAC are a revelation. It seems that all showers and toilets have been built uni-sex. The result are wash rooms of the standard of a well-planned caravan park. To this 1950s sailor with images of rows of shower roses and toilet seats in a row with at best minimal privacy, the ANZAC began to look a little like a down-market cruise liner.

ANZACs machinery spaces are unlike anything from the days of steam and she does not have a set of evaporators struggling to find enough fresh water over and above the demands of the boilers. ANZAC uses an osmotic system whereby salt water and ship's waste water are separated into waste and fresh water by means of a membrane system. The engineers claim that the ship



The trials team Seahawk prepares to take off. (Photo - G. Andrews)

is unlikely ever to need to have water rationing - even in the tropics. This remains to be seen but they are probably right.

Sailors live in messes of around 30 bunks in ANZAC. The bunks (racks) are three high and each has a curtain around it so that those off-watch can find privacy. Sailor's lockers are about twice the capacity of those of the earlier ANZAC but then, no-one goes ashore in uniform these days unless it is a ceremonial matter.

Chief Petty Officers have two berth cabins (MUCH superior to those in the soon to be sold FAIRSTAR) and have a roomy small cafeteria cum recreation space. Petty Officers do nearly as well, usually having a six berth cabin, one of which I occupied in comfort as ANZAC thumped into a three metre swell at better than 25 knots.

The officers in ANZAC are perhaps, like the rest of the company, are somewhat short in numbers. Junior officers have two berth cabins and senior officers have single cabins. With the amount of paper-work that has always been needed from a naval officer, they need the space and the desk room. The wardroom and the ante-room are average quality and barely adequate for the numbers of those using them.

ANZAC's galley is well aft and serves the adjacent ships company cafe. Mess men serve the Chiefs and POs messes, while meals are carried forward for the wardroom, with some reduction in heat.

ANZAC is a no-smoking workplace, subject to the Occupational Health and Safety provisions. For those sailors who just HAVE to have one, the waist (side) decks and quarter deck (under the flight deck) are the only places. At sea, at night, a small area is roped off on the quarter deck. This is done because ANZAC does not use lifebuoy sentries. At sea, at night, the only people who can see the stars are working on the bridge.

Seen through the heavy windows of Flying Control, the Seahawk is hauled down by the RAST system. (Photo - G. Andrews)

The binnacle on the bridge looks familiar, but little else does! (Photo - G. Andrews)

The bridge is not dis-similar to that of the FFGs. No longer is a wooden steering wheel situated several decks down with a gyro repeater, voice pipes and telegraphs for company. ANZAC's helm is a sitting position on the port side of the bridge console with a branch of handles such as might be found on a push bike. The ship runs much of the time on autopilot except when course changes need to be made.

As completed, the new frigate is carrying just two weapon systems. Most obvious is the single 127mm gun. This US-built gun can range past 20 000m, at 20 rounds per minute. The mounting has no crew but the magazine has about six people involved in assisting the rapid-load mechanism. LCDR Ray Griggs, first lieutenant of ANZAC, was enthusiastic about initial sea and anti-aircraft shoots, proudly stating that an anti-aircraft shoot was cut short when the target was shot down.

Fitted on "B" deck, aft of the 5in gun, are two anti-missile "Chaff" launchers and on the highest superstructure deck aft of the twin funnels is an innocuous "cargo" hatch. Half of this hatch is fitted for an increase in Sea Sparrow missile launchers. The other half covers eight vertical launch tubes, visually similar to the hoppers on nuclear missile submarines. The Sea Sparrow missile is an anti-missile, anti-ship/aircraft rapid reaction missile and gives ANZAC a point defence capacity.

Also to come, are two sets of anti-submarine torpedo launchers which will be transferred from the soon to be decommissioned River class Type 12 escorts. Expected extra weapons to come "in the future" are Harpoon missiles, as carried in other Meko 200 frigates used in other navies and the FFGs and DDGs, and a Close In Weapons System (CIWS) as fitted on the FFGs.

The Operations Room has plenty of space. (Photo - G. Andrews)

The six berth Petty Officer's cabin. (Photo - G. Andrews)

ANZAC's major weapon will be her single anti-submarine and missile control helicopter. The ship was built to operate the Seahawk, as used on the FFGs, but may have to settle for a smaller and cheaper type in the future. During my four days on board, the ship was trialing a Seahawk to allow calculation of the operating limitations in wind and sea conditions.

So, how does ANZAC feel at sea? It is true she is fitted with stabilisers but these were not used during my time aboard. At speed of up to 28 knots, with manoeuvring at full angles of helm in seas of up to four metres and winds of 25-30 knots, ANZAC was superb. She has a long, slow and easy roll moment and my personal test - the ability to sleep well in a forward mess in a head sea - something difficult in a forward mess-deck in a Daring - showed that there was very little pitch and thump. Perhaps choosing a design that was intended for use in the rarely placid North Atlantic had something to do with it.

ANZAC is a beautiful ship that showed some small problems of being first-built of class. The latter ships will be even better and the class will still be serving Australia beyond 2020.

So, how do I, as a sailor of the 50s and 60s feel about ANZAC? I would have envied some of the living conditions. But not having access to the upper deck on a moonlit, tropical night is unfortunate. I "doffs me lid" to those young sailors who have to be truly multi-skilled in this ship in today's short - handed RAN. They'll do as well as my mob did, or better.

Australia's DDGs

By Michael James

The Navy's three guided missile destroyers (DDGs) are familiar sights to most Sydneysiders, their long sleek shapes gliding through the water, often leading a line of warships through the "Heads". HMA Ships HOBART, PERTH and BRISBANE have served the nation well, in peace and war over three decades.

The decision to purchase the three CHARLES F ADAMS class destroyers from the United States marked a turning point in the history of the Royal Australian Navy. The first ships not designed or built in the United Kingdom for the RAN, they represented a tangible break with previous close ties to the RN and signified the closer links between the US and Australian navies.

Displacing some 4,700 tonnes, the design was modified in a number of areas from the American original, most notably, the fitting of the Australian-designed IKARA anti-submarine missile system in place of the ASROC anti-submarine rocket in their US and West German sisters.

Commissioned in 1965 and 1967 HOBART, PERTH and BRISBANE each saw service in Vietnam, providing fire support to allied forces inland. Other highlights of their memorable careers include BRISBANE aiding cyclone-ravaged Darwin in 1975 and HOBART participating in a round-the-world cruise in 1976, taking part in the US Bicentennial celebrations.

HMAS BRISBANE is the holder of the honour of being the only RAN ship still in commission to have served in two wars, having seen service during the 1991 Gulf War. Following decommissioning by the US Navy, a near-sister, the former USS GOLDSBOROUGH, was purchased in 1993 for spares to maintain the three RAN ships until they paid off.

Extensively modified over the years, far more so than their US sisters, today the DDG's mount two rapid-fire 5 inch guns, the 46km range Standard anti-air missile, two Vulcan Phalanx antimissile systems, the 130km range Harpoon anti-ship missile and six anti-submarine homing torpedo tubes. Regular overhauls and updates have kept the DDGs at the forefront of capability.

Regular users of Sydney Harbour will notice HOBART currently undergoing a major refit. PERTH, only recently returned from the multinational RIMPAC exercises off Hawaii, and left again on 29 July in company with BRISBANE to participate in the latest Fleet Concentration Period (FCP) off northern Australia.

Following the FCP, PERTH headed for home and a well deserved rest, while BRISBANE continued north to participate in yet another multinational exercise, STARFISH 96, in the South China Sea off Singapore.

Whilst some might say that these graceful ships are in their twilight years, due to begin paying off near the turn of the century, they remain as busy as ever, and, with their sleek lines and graceful profile, will remain a common and welcome sight in our region for some time to come.

NoosaCat Workhorse For The 90s

Army 8.1m safety utility boat at speed

One model of the NoosaCat range has exceeded the sales of all others as a popular, reliable work boat around Australia. The 3100 Series, 880 model has been snapped up be the Army, other government departments and SAR groups. The list of configuration variations, power supplies and options is extensive but the ride, speed, handling and stability of this big cat are the same, whatever the job or location.

To date NoosaCat has provided nine of the model to the Australian Army for use as safety utility boats. Delivered to the most remote spots in Australia on all terrain trailers towed by Unimogs, these boats have to be tough and dependable. They are built to Lloyd's HCC and USL 2C survey and fitted with heavy duty fenders all round to take the hard knocks.

Seating is provided for ten passengers and the two crew have Bostrom Suspension seats. There are two bunks forward, a shower and toilet and a compact galley with gas stove and solar powered refrigerator. The deck is covered in non slip AquaDeck. On the afterdeck there is a 300kg electric Davco davit.

Powered by twin Johnson 225hp outboards on pods, the 8.1m boats can reach a top speed of 40 knots and cruise for long periods, drawing fuel from their twin 500 litre tanks. 110 litres of water is carried in a single tank.

"The 8.1m boats can reach a top speed of 40 knots and cruise for long periods, drawing fuel from their twin 500 litre tanks."

The boat is fitted with extensive gear to reflect its variety of function. Furuno supplied the 48 mile FR 1941 radar and the FC 581 colour sounder. The GPS is from Trimble and the communications is handled by a Codan HF, Icom VHF and a Uniden 27 meg.

Also carried is the Army equipment for communications and specialised tasks such as picking up parachutists. NoosaCat built the accompanying all terrain trailers to Army specifications, fitted with 8001b recovery winch, air brakes and a fully galvanised suspension system.

Army has modified the layout slightly as the boats have been field-tested. As well, the first boats, launched in 1990 have been returned to NoosaCat for upgrade.

John Bastock

By Alan Zammit

RAN Serviceman, Naval Artist, Writer
Born - Feb 18, 1908
Died - Jul 26, 1996
Aged 88

In 1913, when he was five years old, John Bastock perched on his father's shoulders to watch the arrival from England into Sydney Harbour of the flagship, the powerful new battlecruiser HMAS AUSTRALIA, the new cruisers MELBOURNE and SYDNEY, together with other units of the Royal Australian Navy already serving in Australian waters.

Aged 15, he joined the cradle of the RAN, the training ship TINGIRA. It was the beginning of a lifelong passion for the sea and the inspiration for a fine career as a naval artist and writer.

He served on HMAS BRISBANE I on the China Station and on HMAS MELBOURNE in the Mediterranean. Having served the final commission on HMAS SYDNEY I, John, with most of his old ship's company, sailed in S.S. Beltana to commission HMAS CANBERRA I at Clydebank, Scotland. On the ship's voyage to Australia, via the Cape of Good Hope, John found time in the dog-watches to take up painting.

He completed many pictures of the CANBERRA, some on art board, others on black velvet, depicting the vessel at night on a moonlit sea, with all lights ablaze. The art board paintings were sold to his shipmates for about 2/6d (25c) and those on velvet for about 5/- (50c).

John's supreme effort during this period was a large painting of the ship on canvas, suitably framed and signed by Captain Massey and his senior officers. The picture was raffled among this ship's company and netted John about £15 profit. A similar painting today would cost more like $1000; such a painting sometimes takes weeks of research and concentrated work to complete, which is what makes it so valuable.

John qualified at Cerberus as a torpedo-gunner's mate. But after further service at sea, he sustained an affliction that resulted in blindness in one eye and he was discharged from the RAN. Having specialised in torpedo and electrical work in the navy, he found ready employment with the electrical branch of the NSW Public Works department and later the Electricity Commission.

Fortunately, his sight eventually improved to such an extent that he was able to resume painting. In the years to follow he painted many subjects and executed hundreds of drawings, diagrams and paintings of ships and wrote many articles on both ships and maritime subjects. His book, Australia's Ships of War, is well known as a work of naval reference. In fact the signed edition has become a much sought-after collector's item.

The late John Bastock (left) presents his painting of the first HMAS ADELAIDE for display in the current ship's wardroom.

Bastock was a recognised authority on the Sail/Steam era. His second book, Ships on the Australia Station, packed with photographs, drawings, diagrams and a series of his paintings of the flag-ships involved, has become a valuable reference work on a period of Australia's naval history of which little authentic information has ever been published.

The keynote to John's work was the correctness of detail - perspective must be spot-on, funnels and masts must have just the right angle, guns must look as though they will not collapse when fired, seaboats must be turned out, properly gripped, ready to lower, correct pattern anchors are to be carried, bollards, fairleads and a host of other such details must be included, and the details must be correct for the period depicted. The latter is most important - for example, another artist once created a picture of SYDNEY I complete with tripod foremast, blasting the EMDEN. The tripod was not fitted for some years after the action!

John believed that ships, like people, had an ideal angle from which they should be seen. He liked his ships in the ideal position, looking as though they were having their portraits painted. His attention to detail and accuracy resulted not only from study and research but from the knowledge and experience gained in years of service at sea. He was an outstanding naval artist and writer, but his collection of naval photographs is also of international significance. The collection was obtained the hard way - during more than 70 years of taking photographs himself and exchanging them with naval photography collectors throughout the world.

Bastock was an expert in drawing and painting naval subjects. He built many ship models, some of which will be presented to museums. The wardroom of HMAS ADELAIDE has a fine painting of the cruiser in 1944 in her wartime camouflage, and HMAS CANBERRA also has an outstanding painting of the 10 000-ton County class cruiser in her pre-war paint. Bastock also presented the ships SYDNEY, MELBOURNE, SUCCESS and ANZAC with splendid paintings of earlier warships bearing those names.

Bastock's enthusiasm for the Royal Australian Navy was contagious, and many people have a greater appreciation of it as a result of his excellent work with pen and paintbrush.

He married Vera in 1930, they had one son and two daughters. Vera died three days after her husband.

Busy In The Gulf

On 10 April, 1996, the RAN's guided missile frigate (FFG) HMAS MELBOURNE sailed from Sydney's Fleet Base East, her destination, the Arabian Gulf.

HMAS MELBOURNE, busy in the Gulf during 1996

Enroute to the RAN's eighth Operation 'Damask', the ship conducted a brief visit to the port of Darwin and celebrated Anzac Day at anchor near the island of Phuket, Thailand, before calling into the city of Goa (Mormugao) on the western coast of India. On departure from Goa, Melbourne conducted a passage exercise with the Indian naval frigate Ins Suvarna which included shiphandling, air defence, underway replenishment and helicopter operations.

Melbourne entered the area of operations (AO) and conducted her first transit of the Strait of Hormuz on 8 May 1996. After operational briefings with staff of the Commander, Fifth Fleet United States Navy (USN) in Bahrain, the ship commenced Maritime Interception Force (MIF) operations in close cooperation with USN and Royal Navy (RN) units tasked with the enforcement of UN sanctions against Iraq.

MIF Operations require all shipping entering and leaving Iraq to be located, indentified and queried over VHF radio in relation to their cargo and destination. To locate contacts, Melbourne employed a range of surveillance resources, including shipbourne radars, infra red cameras and electronic support measures equipment as well as conducting aircraft operations using the embarked AS350-B (Squirrel) and S70B-2 (Seahawk) helicopters. A diving detachment onboard led the boarding teams which were inserted by helicopter or boat to verify vessel information. If a vessel was found to be violating UN sanctions, it was diverted for further investigation by authorities of one of the Gulf Cooperation Council (GCC) states.

Close cooperation with foreign navies was vital to successful operations in the Gulf. These skills were honed in multinational exercises such as Gulfex 33 in May. Melbourne operated with the Nimitz class aircraft carrier USS Carl Vinson in the central Arabian Gulf early in July, asuming the Plane Guard Safety Station close astern of the carrier for 24hrs. Melbourne maintained this station while Carl Vinson launched and recovered many of her fighter and surveillance aircraft throughout the day and night.

The operational environment in the Gulf is a challenging one with elevated air temperatures exceeding 45 degrees celsius daily and with high levels of humidity. This made work on the upper decks for long periods very difficult and required personnel to maintain high levels of water intake. The ship's equipment worked well considering the heat and haze present.

Highlights of the deployment were the VIP visits by the chairman of the joint Chiefs of Staff, United States, General John M. Shalikashvili and the Maritime Commander Australia, (MCAUST) RADM Chris Oxenbould AO RAN. In their addresses, both stressed the importance of the Australian contribution to the MIF and thanked MELBOURNE'S crew for their efforts.

RADM Oxenbould joined the ship in Dubai and sailed with MELBOURNE to observe MIF OPS first hand. He used the visit as an opportunity to present Australian service medal ribbons to members of the ships company and to speak informally with many of them on issues currently affecting their service. MCAUST then disembarked to Bahrain for briefings with Commander Fifth Fleet, VADM Thomas Fargo USN, before returning to Australia. The ship also visited Kuwait which was a significant indication of Australia's commitment to that country. While there Melbourne hosted a ship visit by the Orphans of the Martyrs. These children had all lost their parents during the Iraqi invasion of Kuwait in August 1990.

For many of the crew, this deployment was their first visit to the Middle East. The States of Bahrain, Saudi Arabia and Oman, as well as Abu Dhabi and Dubai in the United Arab Emirates were also visited. The visits provided the oportunity to conduct official calls and to hold a reception, sporting events and allow for everyone to experience a little of the GCC countries offerings for themselves.

Melbourne departed the Arabian Gulf on 9 August 1996 and left the area of operations on 15 August 1996. The long journey to her home port of Sydney via Mauritius and Fremantle had commenced and the crew looked forward to the reunion with family and friends on 16 September 1996.

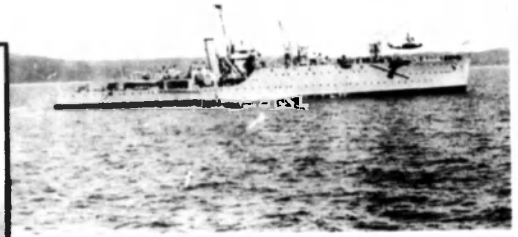
By any measures the deployment was a great success, both operationally and personally for the ship's company. Melbourne made a significant contribution to the enforcement of United Nations resolutions on Iraq while giving members of the ship's company an opportunity to test themselves and their equipment in an operational environment.

KEY DATES

10 April	Sailed for OP Damask
05 May	Passex with INS SUVARNA
07 May	RAS with USNS Tippecanoe. Mel escorted Tip through SOH
09-13 May	Berthed Bahrain
10-12 May	Gulfex 33/Inchop briefings
16 May	Proceeded to R/V with Chatham and York for Gulfex 33 (Surfex)
17 May	Boardex Light Jackstay and Transit through SOH
18 May	RAS completes Gulfex. Detach and Transit SOH
20 May	R/V with KTNS Al Sanbouk
21-23 May	Berthed at Kuwait
27 May	Proceeded to R/V with HMS YORK at 1730 and conducted OOWMANS and RASAPS
28-29 May	Berthed at Bahrain and received General Shalikashvili CJCS
31 May-8 June	Berthed at Dubai
09 June	Conducted Cross Deck with USS CARON
10 June	Conducted RAS L with RFA Brambleleaf
11 June	TFRUS Ledet from USS LABOON. TFR Co/Opso to LABOON for breifings
19-21 June	Berthed at Abu Dhabi
22 June	Conducted Cross Deck with USS Thach (5 Pers)
27 June	Conducted RAS with RFA Brambleleaf
30 June	Conducted Vertrep with USS NIAGARA FALLS
03-06 July	Berthed Bahrain
07-09 July	Closed USS Camden for RAS before integration with NIMITZ Class Aircraft Carrier USS Carl Vinson and her Carrier Battle Group
09-11 July	Berthed Al Jubayl, Saudi Arabia
14 July	Conducted RAS S with USNS Niagara Falls
15 July	Conducted RAS L with RFA Brambleleaf
21-30 July	Berthed Dubai
30 July	Departed Dubai with MCAUST Embarked. Conducted UNREP with USS Camden
31 July	Conducted CIWS PAC and 76mm firing. MCAUST embarked in Mel S70B-2 for KAA Waterway Patrol
01 August	MCAUST Departed for Bahrain
05 August	Conducted Crossdeck with US Russell
07 August	Conducted 76mm firing in Dugout, RAS L with TIP and CASEX with AST
08-09 August	Berthed at Bahrain
10 August	Transited TONB-FURER Traffic separation scheme. Proceeded to transit Straits of Hormuz
11-14 August	Berthed MUSCAT
15 August	Outchopped to CTF 627
16 Sep	Arrived Fleet Base East, Sydney, after stopover at HMAS Stirling 6-9 September

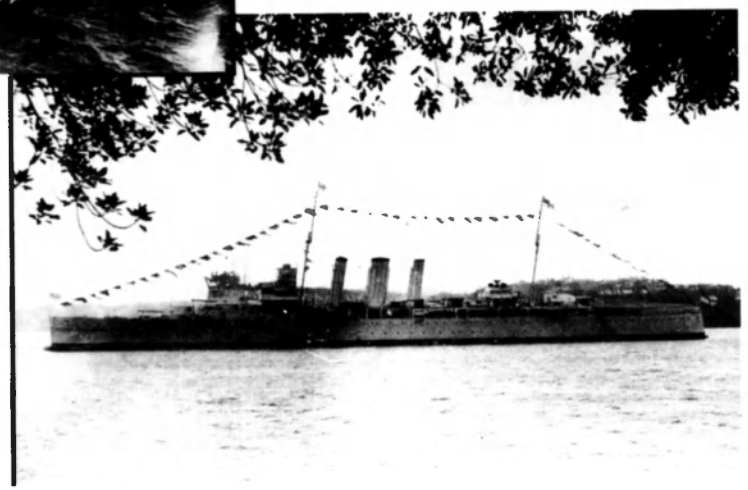
HISTORY REVISITED

Right: Seaplane carrier HMAS ALBATROSS in the early 1930s. The ship's forward crane has lifted a Seagull III amphibian.



Left: An unusual view of the S class destroyer HMAS SUCCESS. Note the tiny beam of the ship.

Below: HMAS AUSTRALIA (II) in Farm Cove, Sydney. The photograph was probably taken in the late 1920s, with northern pylon for the Sydney Harbour Bridge having only just commenced construction.



"Swansong"

From Vic Jeffery, Navy Public Affairs Officer (WA)

HMAS SWAN, shortly after completion.

With the decommissioning of the 26 year old HMAS SWAN at HMAS STIRLING on Friday, 13 September, the era of the RIVER-class destroyer escort in the Royal Australian Navy is drawing to a close.

Of the original class of six, YARRA, PARRAMATTA and STUART have been broken-up and DERWENT was expended in a series of ship survivability tests in conjunction with Defence Science and Technology Organisation off the WA coast.

The future of SWAN remains undecided with the ship being gifted to the WA State Government by the Federal Government and submissions being called by the WA Tourism Commission for expressions of interest as to what the future of the old warship will be, either on or below the waves. A steering committee will make the final decision.

This has created a great deal of speculation and numerous bids to secure the ship with competitors coming from a number of areas including the City of Rockingham and Town of Busselton who both are keen to secure SWAN as an offshore dive wreck.

Then there is the Perth-based National Naval Heritage Centre Inc. which wants to preserve SWAN as a museum ship at A Berth, Victoria Quay near the mouth of the Swan River in Fremantle Harbour. This proposal would include accommodating youth groups taking part in live-in learning programmes.

The south coast Town of Albany, great supporters of the Royal Australian Navy over many years, are keen to secure SWAN's twin 4.5-inch gun turret for display on the slopes of Mount Adelaide as part of the historic tourist attraction, the Princess Royal Fortress.

This popular complex already boasts a twin 40mm Bofors from the former HMAS STALWART and both RAN and USN 21-inch torpedoes along with a growing collection of naval uniforms and memorabilia. The "Albany Forts" as it is known, protected the entrance to this magnificent harbour during both World Wars.

SWAN being launched, 16 December, 1967.

Built at HMA Naval Dockyard, Williamstown, SWAN was laid down on 18 August, 1965 and launched by Mrs Fairhall, wife of the Minister for Defence, on 16 December, 1967. After eleven attempts in breaking the traditional champagne bottle the Superintendent Naval Architect stepped in and broke the bottle.

HMAS SWAN was commissioned on 20 January, 1970 under

"SWANSONG"

Under refit in Western Australia, HMAS SWAN, 1984.

HMAS TORRENS leads the oiler HMAS SUPPLY and survey ship HMAS MORESBY into Fremantle during the mid 1970s.

HMAS SWAN at speed in 1996. The ship was decommissioned from the RAN on Friday, 13 September. (Photo - LSPH Shaun Hibbitt)

the command of Commander D.W. Falconer, RAN.

On 3 September, 1981 SWAN had the distinction of being the first RAN vessel to pay a goodwill visit to China for 32 years when she visited Shanghai for a four day visit during a seven month deployment which saw her visit 32 ports.

HMAS SWAN also has the distinction of being the first and only RAN destroyer to have been slipped in Fremantle, this occurring on 28 October, 1983 when she carried out a two week maintenance period.

The largest and longest ship to be slipped in Fremantle, SWAN was hauled onto the WA Public Works No. 1 Slipway after the Federal Government had spent $375,000 upgrading the facility to take RAN ships and submarines up to 3000 tonnes.

Still a Fleet greyhound till the end, SWAN steamed nearly 800,000 nautical miles during her lengthy career.

TORRENS remains in service as a training ship at Fleet Base West and is due to pay-off in 1998.

HMAS BARCOO

The Story of a Ship and Her Ship's Company
By Robert McAuslan
Published by Ifix Print, McMahons Point, NSW, 2060

The latest in a long line of individual RAN ship histories, the 104 page HMAS BARCOO is a combination of the career of the frigate, war and peacetime reminiscences and the personal contributions of many of the former crew members.

Published in late 1995, the book is presented in a sepia tone, both the narrative and photographs. Most of the illustrations are onboard scenes, taken by the men at sea and at rest in the various ports. A small pictorial section is devoted to a recent BARCOO reunion.

A good read, the book is available through the publishers or Ian Thomas on (02) 9502 1052.

LEADLINE TO LASERS

Leadline to laser, the history of the Hydrographic Service, Royal Australian Navy, was compiled by Commander R.I. Hardstaff RAN Rtd to mark the 75th anniversary of the RAN Hydrographic Service in 1995.

The volume is a compendium of detail extracted from reports of proceedings, reports of survey, submitted fair charts, published charts, Hydrographic Office files (both current and those archived) and numerous other sources, including the memories of a number of persons mentioned in the book. The volume lets the documented facts tell the story.

Admiral Ritchie in his foreword, and Commander Hardstaff in his introduction, both allude to the continuance of the Navy's task, intially that of the Royal Navy, and since 1920, that of the Royal Australian, in conducting the hydrographic survey of Australia and publishing the navigation charts on which the intial settlement and development of the country depend. The ships now carrying Australia's exports use these charts to ensure both their own safety and that of the marine environment through which they pass.

The book has seven components.

Front Matter consisting of Foreword, Introduction, Acknowledgments, List of Contents, List of Illustrations and Copyright/Publication notices.

Part 1, Principal Surveys, takes the form of an annual synopsis of activities both ashore and afloat. As the 75th Anniversary fell in the Australia Remembers Year, it is particular noteworthy the detail that has been put into chronicling the events in the years 1939 through to 1946.

Part 2, Biographical Details. This Part gives personal details of those uniformed hydrographic officers who have either submitted surveys to the Hydrographic Office, commanded RAN survey vessels or the have been in charge of the Hydrographic School.

Part 3, Vessels. This section lists all RAN, RN USN and USCG vessels employed in the hydrographic survey duties in the area of Australian maritime interest, and gives details of each vessel and the surveys each was involved with.

Part 4. Technical Notes. Although not comprehensive, this part has endeavoured to describe those technologies of the past which have been superseded. This concept is most forcefully identified by the title of the book, Leadline to Laser.

Appendices and other matter make up the sixth section of the book. The twelve appendices cover a range of statistics and other supportive matter.

The final part of the book are the indices which have been compiled in the form of **General Index, Index of Persons, Index of Locations and Index of Ships** and Establishments.

The volume is a worthy continuation to **G C Ingleton's** : Charting a Continent"

Leadline to Laser, consisting of 274 pages, is set in 10 point Times and was published in hardcover and softcover form.

Copies of the softcover edition are available from the author at a cost of **$30 plus packaging and postage.**

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WAR AT SEA

By J Rohwer
Published by Chatham Publishing
Reviewed by Joe Straczek

During the long struggle from 1939 through to 1945 the first victory that had to be achieved by either side was to command the seas. For command of the sea would not only prevent defeat, but also act as the spring board for victory.

Jurgen Rohwer in his book War At Sea 1939-1945 presents a concise and vivid picture of that almighty struggle. Whereas most books written about the naval war tend to cover the Atlantic, Mediterranean and Pacific, War At Sea 1939-1945 includes a seperate chapters on the Indian Ocean, Black Sea , Baltic, the Artic regions and the littoral areas around Europe. Because of this it is possibly one of the best concise naval histories available today.

Unlike other naval historians Mr Rohwer has not used a single map to illuatrate his book. While this may be viewed as a shortcoming I find it refreshingly different. The book is however, illustrated by the best selection of international naval photographs ever seen in this country. These illustrations portray not only the weapons which waged this war, but also the human cost of the battle.

If there is one shortcoming with War At Sea 1939-1945, it is only 198 pages long. But notwithstanding this, the newly released volume is an excellent publication and one which will serve as a general reference for all interested in the War At Sea 1939-1945.

Notice is hereby given that the

ANNUAL GENERAL MEETING

of

THE NAVY LEAGUE OF AUSTRALIA

will be held at the Brassey Hotel, Belmore Gardens, Barton ACT

On Friday, 8 November 1996 at 8pm

BUSINESS

1. To confirm the Minutes of the Annual General Meeting held in Adelaide on Friday 17 November 1995.
2. To receive the report of the Federal Council, and to consider matters raised therefrom.
3. To receive the financial statements for the year ended 30 June 1996.
4. To elect Office Bearers for the 1996-97 year as follows:
   - Federal President
   - Federal Vice President
   - Additional Vice Presidents (3).

Nominations for these positions are to be lodged with the Honorary Federal Secretary prior to commencement of the Annual General Meeting.

5. **General Business:**
   - To deal with any matter notified in writing to the Honorary Federal Secretary by 28 October 1996.
   - To approve the continuation in office of those members of the Federal Council who have attained 72 years of age, namely Arthur Hewitt (WA) Gwen Hewitt (WA) Joan Cooper (Tas) Mervyn Cooper (Tas).
   - To consider the following resolution recommended by the Federal Council at its meeting held in Adelaide on 18 November 1995, and if thought fit pass as a special resolution:

"That the Articles of Association be amended as follows:

(a) To Article 33 add - "(7) immediate past Federal President"

(b) In Article 33 (2) insert after the expression: "The Federal Vice President" the words "and such other Vice Presidents as the Federal Council from time-to-time appoint."

(c) In Article 80.

(i) insert "(a)" after the number "80"

(ii) add to the Article the following - "(b) the Federal Council may in its absolute discretion determine to dissolve a Division.

(d) Upon the Federal Council determining a to dissolve a Division it shall give such directions as are necessary as to the allocation of the membership and disposition of the property of that Division.

(e) In Article 140

(i) insert "(a)" after the Number 140.

(ii) add to the Article the following: "(b) the Federal Council may in its absolute discretion determine to dissolve a Branch.

(f) Upon the Federal Council determining to dissolve a Branch it shall give such directions as are necessary as to the allocation of the membership and disposition of the property of that Branch."

(g) Articles 170 and 171 be deleted.

(h) Article 195 be amended by deleting the expression "including the Australian Girl Sea Cadet Corps."

ALL MEMBERS ARE WELCOME TO ATTEND

By order of The Federal Council

Don Schrapel, Honorary Federal Secretary, PO BOX 309 Mt. Waverley 3149

Telephone (03) 9888 1977 Fax (03) 9888 1083

VIEWPOINT

The 1996 Federal budget has been brought down. The Defence vote has survived, untouched, at $10 billion.

The fact that the Defence vote has not been cut is, of course, welcome. It fulfils a promise made by the Coalition prior to the election. It also raises a number of points worth consideration.

The Defence vote has been guaranteed when all other departments have made a contribution to the Government's debt reduction programme. Not surprisingly, there have been complaints and criticism of the seeming immunity of the Defence budget. People interested in defence, including readers of this magazine, understand the need to maintain the $10 billion figure. However, people involved in areas of activity outside defence, in particular those subject to expenditure cuts, can be expected to have a different view.

This situation clearly means that Defence will have to ensure that every cent is wisely spent. In the current climate any waste or ill-judged expenditure will attract some very ready critics.

A likely consequence of the present circumstances is that while defence expenditure will be maintained at around its current level there can be no expectation of any significant increase.

One aspect of the $10 billion figure that might be usefully pointed out to critics of defence expenditure is that this figure represents a declining proportion of Gross Domestic Product (GDP). It is not so long ago that we were campaigning to maintain expenditure above 3% of GDP. This year's figure will represent just under 2%. Expressed as a percentage of GDP, defence spending is at its lowest since before World War II. It is probable that this percentage will decline further over the next few years.

These circumstances may produce some particular difficulties for Navy. It is likely that in Defence and Government Navy is viewed as having done pretty well out of the budget in recent years. The eight Anzac frigates and the six Collins submarines represent the two biggest "big ticket" programmes Defence has yet had. Navy has also got the minehunter programme and recently, albeit fairly cheaply, acquired Kanimbla and Manoora.

In the pipeline for Navy (perhaps) are Offshore Patrol Combatants (OPCs), helicopters, replacements for the three destroyers (DDGs) and an additional two submarines. In a situation of financial constraint and in circumstances where Navy is thought to have done pretty well already, some hard choices will have to be made.

How many OPCs can Navy afford? The answer to this may depend upon what Malaysia decides. Can Navy keep the Fremantle patrol boats going? How many and for how long? Certainly, the fewer the OPCs the more the need to keep the Fremantles.

What about the DDGs? Can Navy afford to replace them? Might it not be better to develop the Anzacs to their full capability and do without the destroyers?

Helicopters are a must. But how many and of what type? If it was decided to fully utilise the Anzacs then this could impact upon the type of helicopter they would employ.

After all this was taken into account would there be funds for a further two submarines?

The $10 billion allocated in the budget is welcome. But there is an awful lot to be done within the budget.

USCG Condor:
first of a new class of patrol boats

The US Coast Guard has selected a Dutch hullform and a British designed launch and recovery system for the RIB on its new class of Coastal Patrol Boats.

Line drawing of the US Coast Guard's new Coastal Patrol Boat

The $8.9 million contract for the design and construction of the 26.5m Coastal Patrol Boat was awarded to Bollinger Shipyards Inc in Lockport Louisiana on 19 March.

The contract includes options for the construction of an additional 50 vessels which could bring the value of the contract to $200 million if all of the options are exercised.

Bollingers first entered the patrol boat industry in 1994 with the award of 15'Island'class 32m patrol boats for the US Coast Guard. Ultimately, 49 of these vessels were built in three classes.

These 30kt patrol vessels were based on a design from Vosper Thornycroft in the UK, and were powered by Caterpillar or Wartsila main diesel engines.

More recently, Bollinger was awarded the contract for 13 52m 'Cyclone'-class patrol boats for the US Navy. The last of these vessels was delivered on 31 October 1995, and are operated by the US Navy and the Special Operations Command.

This class was also based on a Vosper Thornycroft design, and is powered by four Paxman Diesels 3516 diesel engines.

For the purposes of the Coastal Patrol Boat programme, the US Coast Guard continued with its 'Parent Craft' procurement strategy that had been successfully employed in the 'Island'-class programme.

All of the designs proposed for the Coastal Patrol Boat programme were required to be based on a hullform already used in the construction of at least two vessels, at least one of which had to be operated as a patrol boat performing missions similar to those the new vessel was expected to undertake.

For the purposes of its bid, Bollinger selected the Stan Patrol 2600 semi-displacement monohull from Damen shipyard in the Netherlands.

The lead ship and her sisterships are being developed to replace the US Coast Guard's aging 82ft 'Point'-class fleet of patrol boats which consists of 37 cutters built during the 1960s at the Coast Guard Yard in Baltimore, Maryland, and at J M Martinac Shipbuilding Corporation in Tacoma in Washington.

The main role of the Coastal Patrol Boat is search and rescue (SAR), with law enforcement, drug interdiction, marine environmental protection (by towing containment booms or skimming equipment), and recreational boating safety (conducting boardings of US registered vessels out to 200nm) as secondary roles.

Compared to the 'Wind'-class, the new vessels will reduce operating and

maintenance costs, and provide a safer and more efficient working environment.

The requirement to operate in shallow waters (6ft minimum) and the additional missions of law enforcement and drug interdiction required that the craft be capable of launching and recovering a Rigid Inflatable Boat (RIB) in heavy sea states, and be capable of towing vessels much larger than itself.

The RIB launch and recovery system was designated as the most important aspect of the requirement by the Coast Guard programme office.

After selecting the Damen STANS 2600 as the best hullform for the parent craft, Bollinger teamed with David M Cannell in the UK to assist with the design of the launch and recovery system.

Together the two companies chose to use a launch and recovery system based on that employed in the Protector III UK Fisheries Patrol Boat built by Halmatic Ltd.

In order to eliminate a gasoline-based propulsion system for the 5.5m aluminium RIB, the boat will use a small diesel engine driving a waterjet.

The launch and recovery system from the Protector III will enable the RIB to be handled safely in seas of up to 2.5m, which will substantially enhance the ability of the vessel to conduct offshore search and rescue operations in adverse weather conditions.

Other innovative features of the Coastal Patrol Boat will include an integrated pilot-house with radar, depthfinder, differential Global Positioning System (dGPS), and other sensors, linked to an Electronic Chart Display & Information System (ECDIS) and a sophisticated communications suite.

"Compared to the 'Wind'-class, the new vessels will reduce operating land maintenance costs, and provide a safer and more efficinet working environment."

The Coastal Patrol Boat will have a steel hull with longitudinal framing and be 26.5m in length with a 5.29m beam, displacement of 91 metric tons, and will draw 1.78m. It will have a top speed of more than 25kts.

The propulsion system for the new class will be based on two MTU 8V396 TE94 diesel engines rated at 2,000kW (2,680bhp) driving fixed pitch propellers through Reintjes WVS 430 gearboxes. The ship's services diesel generators will be based on two Cummins 45kW models.

The Coastal Patrol Boat will have a range of 900nm and endurance of five days. It will have a crew of 11 (arrangements are such that any male/female crew can be accommodated), with potable water capacity of 1,500 litres and an RO water maker of 750 litres/day.

The steel hull of the Coastal patrol Boat will be built by Bollingers. Halmatic in the UK will build the fibre reinforced plastic (FRP) superstructure.

Construction of the first-of-class is due to start in January 1997 on completion of what will have been an 8-12 month design phase. The projected delivery date for the first Coastal Patrol Boat is 22 September 1997.

The five-year contract awarded to Bollingers includes multiple options. Depending on delivery/acceptance of the first boat, these are as follows: 6-8 boats in FY'97, 8-15 in FY'98, 8-15 in FY'99, and 8-15 in FY'00.

LATENEWS

Local Naval Cadet is the Best Naval Cadet in State

Cadet Petty Officer Carly Stephens of Training Ship Armidale has been selected as the NSW & ACT Cadet of the Yaer. Carly, a Year 12 student at Armidale High School, was selected from a very competitive and high quality field of nominations from Naval Reserve Cadet units throughout New South Wales and the ACT.

Commanding Officer of TS Armidale, Lieutenant Max Tavener, said:

"She is a dedicated, efficient and highly popular cadet who has shown leadership and instructional skills of a high order. She is among the very finest that the Naval Cadets can produce and her family, school and Armidale can take great pride in her achievement. I hope that Carly's success will make other high school students interested in joining the Naval Cadets."

The award was made at the Annual Inspection Parade of TS Armidale held at the unit's HQ on Brown Street. The Inspecting Officer, Commander Campbell RAN, representing the Flag Officer, Naval Support Command was accompanied by Commander Williams NRC representing the NSW & ACT Naval Reserve Cadet HQ. The award of the Best Cadet of the Year was made by Captain Newey RAN (retired) on behalf of the Navy League of Australia. The award included a two week voyage on Australia's sail training ship, the Young Endeavour, which was a Bicentennial gift from the United Kingdom.

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