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THE NAVY

IN THIS ISSUE

The Magazine of the Navy League of Australia

Vol 56 No 2

Regular Features

viewpoint

Thinking About the Future ...

It has been interesting to note the reluctance of the NATO allies to become embroiled in the seemingly endless fighting in the Balkans. It should not be a cause for surprise as for some time national governments of various persuasions have become increasingly cautious about committing their armed forces – especially their ground forces – in situations likely to involve substantial casualties.

On those occasions when the national interest requires a military commitment to allies or a friendly country, naval and/or air forces are the preferred option; not only are such forces more flexible in that they can be positioned or withdrawn at relatively short notice, but they are less likely to incur casualties on the same scale as soldiers fighting on the ground: Casualty lists are anathema to most governments.

The trend towards caution in calling upon national armed forces to solve disputes of the kind breaking out in many parts of the world today, indeed disputes of any kind, cannot be criticised. One has only to think of the tragic waste of life in many past campaigns to do other than encourage the trend. It does however have some implications for Australia, or rather planning for the defence of Australia in the future.

As is well known, Australia has always depended upon the availability of support from an ally for its security; Britain for many years and the United States since the outbreak of war with Japan. While the country has achieved some military independence in recent times and its armed forces have acquired a limited deterrent capability (which could be increased), national security continues to be underpinned by Australia's relationship with the United States and by its ties with Britain, ties not to be discounted.

Although events overseas may cause Australians to feel uneasy at times, it does not appear to be widely appreciated that population and other pressures generated abroad may well result in a challenge to their sole occupancy of a continent.

When a challenge might eventuate and its form is hard to envisage; possibly pressure from within the United Nations to accept "surplus" people, or the arrival of waves of refugees in small craft – an "unorganised invasion"; perhaps sporadic raids on the mainland or island territories or even a full scale attempt to occupy the country. No-one can be sure these events will not occur.

While raids have been cited officially as a possibility (the writer wonders what a raider could expect to gain, other than test the community's resolution and willingness to defend itself), the existing defence force could probably deal with such a situation without calling upon outside assistance.

An unorganised invasion by boat people would certainly create a problem. It is highly unlikely the armed forces would be ordered to destroy unarmed civilians at sea or on land in the circumstances. The refugees would probably have to be accepted.

While it is difficult to conceive the circumstances that would place Australia at risk of occupation (possibly as part of a war between major powers), should such a situation arise the maritime element of the armed forces unaided might delay or make it costly for the invader in the sea-air approaches but it is doubtful if the attempt could be stopped. There are not enough ships and aircraft to cope with a determined aggressor nor are there ever likely to be. On land there are simply not enough Australians to defend their country in the way Mr Churchill exhorted his fellow countrymen to defend Britain in 1940 – "... we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets...".

With the distinct possibility that ground forces would be unavailable to assist Australia in an emergency, the future security of the country depends very largely upon the major powers restricting their quarrels to trade and commercial activities together with the containment of feuds between less powerful countries and groups. In this latter regard Australia has so far proved good at peacekeeping and this may well be our greatest contribution to future security.

Geoffrey Evans

OUR COVER PHOTO

The Fleet's new guided missile frigate (FFG) HMAS NEWCASTLE off Sydney in early 1994. *(Photo - ABPH Simon Peterson).*

THE NAVY

All enquiries regarding The Navy Magazine , subscriptions and editorial matters should be sent to:
The Hon. Secretary, NSW Division
NAVY LEAGUE of AUSTRALIA
GPO BOX 1719, Sydney, NSW 2001

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viewpoint

KRAIT

Dear Sir,

A great time to remember a great little vessel, the KRAIT, and her exploits, as well as the valor and the tragedy of those she took to war.

A shame then to find the article in the latest issue so convoluted, repetitive and relatively uninformative. I realise space is limited, and that the full story occupies entire books. However I do feel that with careful editing, especially of those repeated passages, a better job could have been done, which might have been not only informative to the un-informed, but also a timely tribute to gallantry in both people and vessel.

Perhaps there might be space to put it in again one day.

Sincerely,
John Campbell
Cremorne 2090

The Author Responds

In response to Mr John Campbell, I feel we are sailing in different oceans.

Re-reading the article in question after Mr Campbell's complaint, I am none the wiser as to what he is on about.

The article is NOT meant to be the history of the MV KRAIT – which has previously been covered in this excellent magazine, but an article touching on a memorial dedication and unveiling, an offshore remembrance ceremony, the JAYWICK and RIMAU raids and the MV KRAIT.

As the memorial dedication and unveiling, and the offshore remembrance ceremony were held in the remote north west town of Exmouth, it was considered worthy of reporting upon to readers of this magazine.

Vic Jeffery
Dianella 6062

☆☆☆☆

NAMES

Dear Sir,

I would like to negate any misunderstanding that HMAS FLINDERS new associate, SMB DUYFKEN, was named as such because it was solely 'Dutch for Dove'. Unfortunately, the SMB vessel allocation list within the latest 'THE NAVY' reads as such and members, subscribers and passing readers may be misled.

For those not familiar with the Duyfken, she was a small three masted yacht skippered by Willem Janszoon that traversed the west coast of (now) Cape York in the first months of 1606. Janszoon himself thought it was 'Nova Guinea' not knowing it was a 'new' continent. Consequently, this was to become the first documented discovery of Australia.

I hope this highlights to readers of *'THE NAVY'* the significance of the name DUYFKEN and its important place in hydrographic and Australian history.

Yours sincerely,
Alec Millett, LEUT RANR
Athelstone 5076

☆☆☆☆

NUCLEAR

Dear Sir,

In reference to the support shown for nuclear powered submarines in Brad Barrat's letter of 5 August I would like to point out that many of the disadvantages have not been discussed. Major powers like the USA & Russia need to operate their submarines over great distances and so when they weigh up the merits of nuclear powered submarines they will have different operational guidelines which can lead to different conclusions to those of Australian defence planners.

Some of the disadvantages of SSNs for Australia are larger construction, operating and disposal (after obsolescence) costs, larger crews and therefore greater wage/training/superannuation costs, higher training standards required at greater cost, bigger balance of trade losses (as local construction is not likely to be permitted), greater internal and external political opposition (eg the nuclear submarine's potential to pollute), noisier, due to larger size, greater speed and different type of propulsion, and decreased sonar efficiency with faster speeds and SSNs needing deeper water to operate because of size.

Since World War I the underwater speed and endurance of conventional submarines has risen while the speed of surface warships has generally decreased so for instance Australia's Oberon submarines have reportedly been able to penetrate escort screens in exercises to "sink" American aircraft carriers.

Finally a conventional submarine can carry the same weapons and in similar numbers to most nuclear submarines.

Sincerely
Phillip Gourlay
Whyalla Playford 5600

☆☆☆☆

WATERCRAFT

Dear Sir,

I have read with a great deal of interest Brian Alsop's recent publication in *"The Navy"* (January-March 1994) dealing with Australian Army watercraft.

As a former member of Australian Water Transport RAE AIF some of the information contained therein was of some assistance to me and the members of our units.

3 Australian Water Transport Group which served in the S.W.P.A. and some eventually joined B.C.D.F. and served in Japan.

The units under the command of group H.Q. were:

13 Small Ship Coy
(Jacquinot Bay N.B.)
16 Small Ship Coy
(Labu N.G.)
1 Water Ambulance Convoy
(S.W.P.A.)
53 Port Craft Coy
(Jacquinot Bay)
54 Port Craft Coy
(Bribie Island Aust.)
55 Port Craft Coy
(Labu N.G.)

Many hours were spent at S.C.M.A. (Army) Melbourne researching routine orders Part II to collect the information on the members of these various units and a great deal of research at Australian Army Archives Melbourne but apparently the information required is at the War Memorial Canberra.

I enclisted in A.W.T. attached to D.W.T. "9" branch and assisted Lt. Col. A.N. Backhouse with others, in mid 1943.

Lt. Col. Backhouse was recalled from Port Moresby to recruit, train and take command of this new group which was to relieve 2 AWT Group who were serving in the S.W.P.A.

When recruiting was firmly under way Group H.Q. transferred to Mt Martha

Continued on Page 25

Naval historian Graeme Andrews sent in this photograph of a mystery ship berthed behind HMAS VAMPIRE at HMAS Cerberus in 1938. Can any reader identify the small vessel with tall funnel.

Onboard Submarine Collins

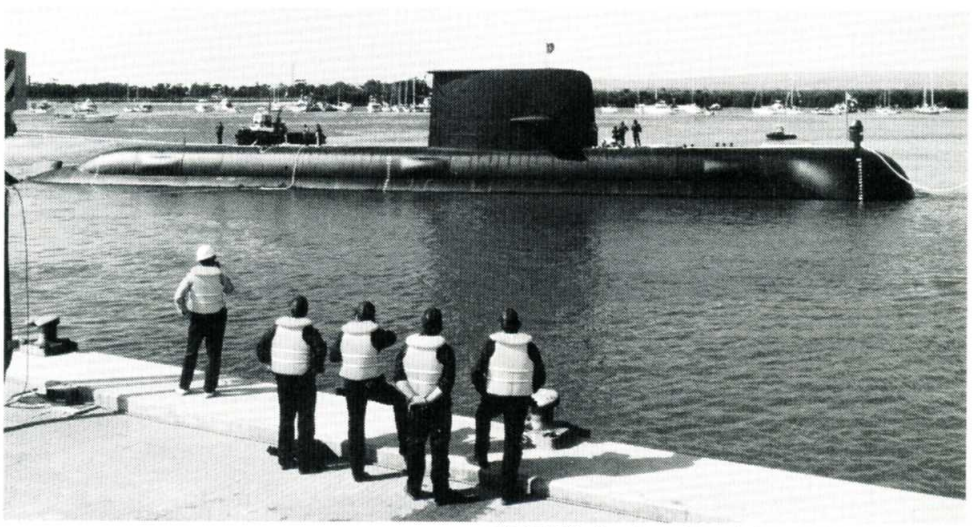
By Ross Gillett

On Thursday, 17 February 1994 the Australian Submarine Corporation conducted a ceremony in Port Adelaide for the keel laying of SHEEAN, the Royal Australian Navy's fifth Collins class submarine.

The new boat commemorates Ordinary Seaman Teddy Sheean, who lost his life aboard HMAS ARMIDALE, when the corvette was sunk by Japanese aircraft enroute to Timor on 1 December 1942. Sheean was posthumously Mentioned in Despatches as he manned ARMIDALE's 20mm Oerlikon gun to fight off the attacking aircraft as his ship went under.

SHEEAN is scheduled for completion in 1998 and the project in September 1999 after the handover of the last boat, RANKIN. The entire project is a fine example of promoting Australian industry with over 2,000 South Australian businesses now participating in the total submarine project. To date $1.2 billion has been placed in local sub-contracts with the total committed in Australia expected to reach $2.26 billion. Local manpower working on the project now stands at 520 production men and women out of a total of 1068 working for ASC at Port Adelaide.

The current state of the building has the lead and name boat nearing completion, with trials expected to begin in August 1994, with delivery in 1995. The second boat, FARNCOMB, is currently fitting out and is expected to be launched this year. Hull numbers three and four are at varying stages of construction with launching planned for 1996 and 1997 respectively. Boat six will be laid down in 1995.



COLLINS after launching in late 1993. *(Photo - RAN)*

Commodore Geoff Rose, the Project Director said "the construction of each submarines is broken down into more than 400 work packages, the end product being the completed boat".

Trials for the first submarine are expected to last up to 12 months and each submarine will be fully RAN manned. To support this part of the project HMAS PROTECTOR will be deployed from HMAS Stirling to Port Adelaide for the work-ups. As well the first three boats will boast crews with former submarine experience.

Each of the new submarines will undertake operational certification sea trials. Training on a new submarine range will be conducted off Western Australia with the nearby magnetic, noise, underwater tracking ranges being used to determine if each boat is performing to its full potential. Most of the boats will be homeported to HMAS Stirling, with up to two detached to the Fleet Base East.

The new boats will displace some 3300 tonnes compared to the 2200 tonnes of the existing Oberon class. Their three diesel generators will develop enough power for the batteries to satisfy "hotel" power and for propulsion. Two emergency propulsion units are located under the bow to "get home" when the main machinery is unserviceable.

Although the boats will carry a crew of 42, accommodation has been provided for 48 officers and sailors, including six trainees. "Hot bunking" will become a thing of the past as the need for the large complement of the Oberons is superseded by the onboard automation and electronics.

According to Commodore Geoff Rose, "the Collins project is on course, despite the complexity of the task. Parts of the first submarine were built in Sweden, but since then most have been built in Australia. It is true to say that COLLINS and those which follow here are the most automated submarines being built in the world today", he added.

The onboard combat system is dominated by seven multi-function consoles and a command plot on the starboard side aft and forward. The two periscopes occupy the centre stage of the control room (with a length of 14 metres) and provide information along with data obtained from the sonars, radars and electronic warfare equipment to the integrated system.

The very capable sonar suite includes a towed array as well as active, passive and flank arrays. A total of five masts are housed within the sail. When fully operational the control room will be manned by ten to twelve crew. Other consoles are devoted to the ship control, the propulsion control (manned by up to three watchkeepers) to overseer the diesels, bilge, main power, firefighting surveillance, gas monitoring, towed array, snort induction and exhaust systems.

Unlike the current Oberons which are literally "pulled apart" every five years, the new Collins boats will be subjected to conditioned monitoring, to check the state of equipment before removal.

Aft on the hull are the control surfaces or rudders, each boat boasting four rudders angled at 45 degrees. Altering only two of the rudders will provide a change of course and depth, moving all four will provide for much improved manoeuvring.

Onboard accommodation includes the commanding officer's cabin, a two berth cabin for senior officers, three five berth bunks for officers and senior sailors, five six berth bunks in the lower space (in total seven ranks). If women are embarked a separate living area can be designated as a stand alone accommodation area. A single galley will serve the whole boat, manned by three chefs.

The boats will be armed with six 21 inch torpedo tubes, with reloads stowed immediately aft on two levels, for a total in

The Training and Helicopter Support Ships Alternatives?

By Malcom R. Davis

For some time now, the Australian Government has been considering the acquisition of a naval vessel to support the use of helicopters at sea, and also to act as a training platform.

This Training and Helicopter Support Ship (THSS) has been the subject of considerable debate within the Navy, the Department of Defence and the government, as a result of the operational, financial and political questions the acquisition of such a ship would pose. The THSS requirement was for a vessel that would replace HMAS Jervis Bay, and such a vessel would be designed to "... transport large numbers of military personnel, (be) equipped with a significant hospital, and be able to support helicopters".[1] Specifically, the vessel was to have been able to "...load and unload two helicopters simultaneously, and refuel and provide forward maintenance support for those helicopters and also helicopters operating from land strips ashore for a significant period".[2] The THSS was designed with a 'through deck', and a below deck hangar, enabling up to eight helicopters to be embarked on the ship.[3]

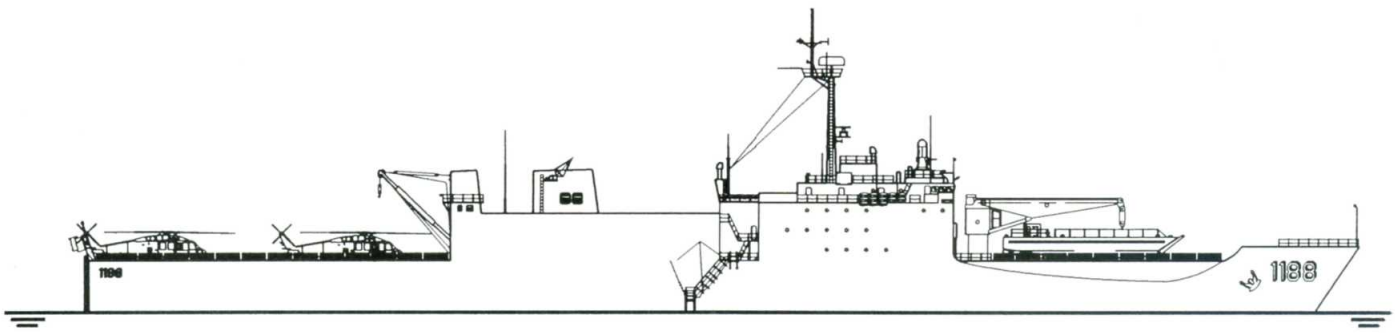
Funding for a locally built ship, that was to be purpose designed for supporting at-sea helicopter operations was cancelled in the 1993-94 Federal Budget, and this forced the Navy to consider alternatives, or face the prospect of no ship being acquired to replace HMAS Jervis Bay and HMAS Tobruk.[4] After reviewing a variety of options, the government has decided to acquire two Newport class LST's from the US Navy – the USS Fairfax County and the USS Saginaw. There appears to be no suggestion by the government that a locally constructed, purpose built THSS will be acquired in the future. Therefore how does the Newport class compare to the capabilities of the THSS as it had originally been conceived? Do two Newport class LST's give the RAN a better helicopter support capability than one THSS would have made possible? Are the Newport class more operationally flexible than a single THSS?

The Newport class ships are both about 23 years old, and thus the first problem facing the RAN will be operating what are quite old ships. The Newports are designed to have a 40 year lifespan and will be nearing the end of their useful life by about 2010.[5] This creates a problem of block obsolescence, with the RAN replacing the DDGs, the Newports and patrol vessels all within a 10 year period.[6] The acquisition of a newly constructed THSS would have eased this problem because the THSS would have had a useful lifespan until about 2030 if commissioned in the late 1990s. Therefore, some concern about the length of the Newport class ships remaining operational lives is justified. Having said this, it must be noted that the US Navy has kept the two ships very well maintained, and thus at $10 million each, the acquisition of the Newport class ships is reasonably good value for money, even if only as interim vessels pending the future acquisition of a new vessel sometime during the first decade of the 21st Century.

The two Newport class are considerably cheaper than a purpose built THSS. They can be acquired relatively quickly, and there would be no problem in ensuring maintenance support from the US. Furthermore, the Newport class cannot be considered 'mini-carriers' and as a result avoid the potential political problems created by acquiring what critics would call a 'power projection capability' – an unavoidable problem when acquiring a helicopter carrier like the THSS.[7] The Newport class can be used quite effectively as a training vessel and it can also be used in peacetime roles such as disaster relief, supporting UN peacekeeping operations, and undertaking joint operations with regional allies to support and enhance regional defence cooperation.

Besides the obvious peacetime missions described above, consideration must be given to the Newport class primary role – to land infantry and armoured vehicles over the beach using their stern ramp, and landing craft. It is quite pointless to purchase naval vessels with only non-hostile peacetime missions in mind because ultimately these ships may have to be committed to battle in order to ensure Australia's national security interests are not threatened by a hostile power. Therefore any decision on acquisition of new ships needs to be taken with this possibility in mind. Perhaps the most likely 'wartime' role for the ships would be the rescue of Australian nationals under threat in a regional crisis similar to the 1987 Fiji Coup. Such a mission may require the use of helicopters for evacuation, or in a worst case scenario, may require the 'forcible entry' of ADF ground forces to seize territory in order to defend evacuation areas from hostile forces.

Whilst the Newport class ships can operate helicopters from a helicopter deck aft, they have minimal through deck capability or hangar for operating a large number of helicopters or tilt-rotor STOVL aircraft, as is the case with some types of small helicopter carriers such as Thailand's new ship from EN Bazan. There is some suggestion that the ships will be fitted with an elevator, allowing helicopters to be stored below decks, and then spotted on deck for



1 A.W. Grazebrook, "Force Structure Problems" in Asia Pacific Defence Reporter, Vol. XIX, No. 10/11, April/May 1993, pg 31.
2 ibid, pg 32.
3 A.W. Grazebrook, "Navy building on firm foundations" in Asia Pacific Defence Reporter, Vol. XVIII, No. 8/9, February/March 1992, pg 13.
4 R. Askey, "Training and Helicopter Support Ship for the Royal Australian Navy" in The Navy, Vol. 56, No. 1 January-March 1994, pg 4.
5 ibid, pg 4.
6 Department of Defence, Force Structure Review 1991, Commonwealth Government Printing Office, pp15-17.
7 A.W. Grazebrook, "Defence is Drifting" in Asia Pacific Defence Reporter, Vol. XX, No., 4/5, October-November 1993, pg.12.
8 R. Askey, "Training and Helicopter Support Ship for the Royal Australian Navy" in The Navy, Vol. 56, No. 1, January-March 1994, pg 5.

air operations. This would enable the Newports to be more operationally flexible than they currently are, but at the same time would reduce cargo space below. The lack of a through deck design on the Newport class limits the operational flexibility of the ship vis a vis future evolutionary upgrades, whereas the through deck design of the THSS would have made such evolutionary upgrades much more feasible.

The Newport class are designed to carry about 400 troops (an infantry company), 2,000 tons of cargo or 29 Main battle tanks or 41 trucks, as well as the USN's LCVPs and LCPL on davits.[8] The LCVP are small landing boats that can carry up to 36 troops, whilst the LCPL can carry 17 troops. Both types are slow, and vulnerable, and are not effective in undertaking rapid 'over the horizon' amphibious assaults – in any event the RANs new LCVPs or Army LCM8s would be carried. If the Newports are carrying helicopters, then a small scale 'over the horizon' amphibious assault is more feasible. Providing the ships are fitted with an elevator, the Newport LST's will be able to carry up to eight Blackhawk's on- board, with each helicopter carrying 11 to 14 troops. Approximately three lifts will be required to land 250 troops or one lift to land a reinforced platoon of 70 troops. If both LST's were employed in a forcible entry operation, it would take 3 lifts by 10 Blackhawk's from both LST's to transport 500 troops ashore.

In comparison, the THSS was designed to deploy forces of up to battalion size, using eight Blackhawk's to land forces up to 112 troops in one lift. In order to deploy an entire battalion of 800 troops it would take 7 lifts using 8 Blackhawk's.

An early of USS FAIRFAX COUNTY, taken in October 1971. *(Photo – USN, courtesy A.D. Baker III)*

Thus it can be seen that provided both Newports are deployed, and both are equipped with elevators so that the full complement of Blackhawks can be operated, the two ships can put greater numbers of men ashore more rapidly than a single THSS could using 8 Blackhawks. The importance of 'shock effect' – the sudden and unexpected concentration of overwhelming force – in 'over the horizon' amphibious assault cannot be understated. In this respect the deployment of two Newports would be more operationally effective than one THSS. Furthermore by dispersing an amphibious force across two ships, the loss of one ship would not automatically mean the entire assault force was lost. However, the value of a full battalion in comparison to two companies could prove crucial in a combat situation – an extra 400 troops hitting the beach could prove highly useful in ensuring that a forcible entry operation did not result in a costly defeat.

One means of enhancing either types ability to rapidly land troops ashore would be the acquisition of LVTP-7 amphibious assault vehicles which would each carry 25 troops ashore, and then act as APCs, as well as provide additional fire support. A combined helicopter and LVTP assault would thus significantly improve the 'over the horizon' amphibious assault capability, by enabling forces to be deployed more rapidly ashore, and at the same time provide heavy weapons support and enhanced mobility for ground forces after the amphibious landing. The Newport class can each take 23 LVTP-7s whilst the THSS could deploy an even larger number providing it was equipped with bow or stern doors.

Besides amphibious assault, the THSS had a number of other operational roles. These included a command ship role, which is something the Newport class are not designed to do. Nor are the Newport class designed to switch from amphibious operations to sea control operations such as open ocean ASW, which the THSS could have done by supporting S-70B-2 Seahawk and Sea King ASW helicopters. In this way the THSS would have enhanced the Perth class DDGs and Adelaide class FFGs capability to undertake open ocean ASW and ASuW. Whilst the original concept for the THSS was not designed for sea control missions, it would have been relatively simple to equip the THSS for such a role. The THSS was also designed to have a 70 bed hospital – a feature which the Newport class lack. Thus the Newports are not suited for the medivac. Both the Newport class will be able to effectively offer afloat logistical over the side (LOTS) support for ADF land forces undertaking operations in Northern Australia. The presence of two such ships would improve the ability of the RAN to support Army operations, and it is likely that using two ships would be more operationally effective than relying on just one ship such as the THSS.

The Newport class are lightly armed with only one Mk. 15 20mm Phalanx CIWS. Obviously man portable SAMs could be employed for additional protection, but the ships would be heavily dependent on the DDGs and FFGs air defence missiles for protection against air attack, and task force ASW assets for countering a submarine threat. One advantage of a newly constructed THSS would be the opportunity to incorporate some form of point defence missile system, such as VL Seawolf, whilst under construction. Due to the design of the Newport class it would probably not be cost effective to install such a point defence missile system given that radical changes would need to be made internally to accommodate the launchers, magazines, and control centre for the system, as well as sensor arrays externally.

Therefore has the government made the wrong decision in choosing the two Newport class ships? It appears highly unlikely that the government has any intention of funding the construction of a purpose-designed locally constructed THSS in the near future, in spite of the benefits this would bring to Australian shipbuilding industry. Part of the reason for this is a lack of money within the defence budget, as such a ship would be considerably more expensive than the price paid for the two Newport class. Furthermore there is a good deal of opposition within the government to acquiring a 'carrier like vessel' mainly because of concerns about the perceptions of Australia by our Asian neighbours.[9] Many in the government feel that a 'carrier like' THSS suggests 'neo-imperialistic' ambitions, which would be unhelpful in cementing regional defence cooperation. Irrespective of the operational qualities of the THSS and the views of the uniformed military, it is the Government which makes the final decision, and unfortunately party politics have intruded on the decision regarding the THSS. Thus with the cancellation of the THSS, the RAN needed to make a quick decision on an alternative or face a future without any sort of Helicopter Support Ship. Clearly such a capability was needed, if the RAN was to be in a position to fulfil the requirements of the 1987 White Paper on the Defence of Australia, and be in a position to undertake joint exercises to further regional defence cooperation. In effect it was Newport or nothing.

Whilst it can be seen that a newly constructed THSS does have many advantages over the Newport class in terms of operational flexibility, cargo capacity, as well as being a brand new ship purpose built for a wide variety of operations, the Newports are capable vessels which are effective in many peacetime roles such as disaster relief, and the support of peacekeeping operations. They can also contribute effectively in the evacuation of Australian nationals in crisis areas, and if it comes to it, perform adequately in an 'Over the Horizon Forcible Entry' amphibious assault. The purchase of two Newports will ensure that the RAN has at least some means of undertaking limited regional operations in the future.

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9 A.W. Grazebrook, "Defence is Drifting" in Asia Pacific Defence Reporter, Vol. XX, No., 4/5, October-November 1993, pg.12

KUNGAH MARIS Sinks

The RAN's target towing vessel KUNGAH MARIS sank at sea on 10 December 1993. Efforts to pump out the 63 foot long pinnace and tow the craft into Jervis Bay by HMAS HOBART failed.

KUNGAH MARIS sank at approximately 0945, sixteen nautical miles east of Point Perpendicular. Six personnel (two civilian and four sailors) were rescued by HOBART. The craft was owned and operated by the Defence Department's Acquisition and Logistics Organisation as a test vessel, providing services to the RAN on a contract basis. On this occasion, the vessel was working with HOBART for officers undergoing a Principle Warfare Officers Course.

At the time of her loss, KUNGAH MARIS was towing a target to the gunnery practice range when it began taking water onboard, after apparently hitting a partially submerged steel shipping container. The crew first noted the problem at 0850, with HOBART arriving at the scene only minutes before the order was given to abandon ship. The only item saved from KUNGAH MARIS was the ship's wheel.

The former Target Towing Vessel KUNGAH MARIS, in 1981.
(Photo - R. Wright)

Canine Recruit Welcomed Aboard HMAS TORRENS

Dogs are not allowed on Garden Island, but the Navy made an exception for a "special dog" which was presented to the destroyer escort HMAS TORRENS at HMAS Stirling on Monday, January 24.

Making the presentation was Mr Geoff Rankin, Regional Director (WA) of Carlton and United Breweries, who handed over to the Executive Officer of HMAS TORRENS, Lieutenant Commander Steve Hayes an enormous 4m x 3m double sided "RAS" (Rendezvous-At-Sea) flag.

Featured on this resplendent flag – which will be clearly visible at sea when flown, is the dog from the Fremantle – brewed Dogbolter Special Dark Lager emblem.

Most warships traditionally have a "RAS" flag which is flown when coming alongside another warship at sea and HMAS TORRENS is delighted to adopt this well-known canine resident from the port city.

Traditionally "RAS" flags are colourful, light-hearted and usually feature comic, cartoon, humorous or eye-catching commercial products.

Already "the dog" adourns the port and starboard 10-inch signal lamps aboard HMAS TORRENS and the handover of the Dogbolter "RAS" flag will compliment them.

Vic Jeffery

Hoisted for the first time, the custom-made parchment coloured, Dogbolter RAS flag is raised onboard the destroyer escort HMAS TORRENS which was alongside at the HMAS STIRLING naval base.
(Photo: Navy Public Affairs (WA))

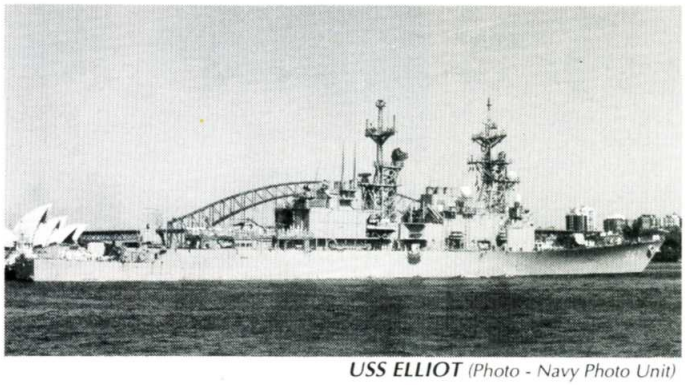
HMAS SYDNEY Returns from Red Sea

The Royal Australian Navy guided missile frigate, HMAS SYDNEY returned to her name city on 15 December, marking the completion of a five month deployment to the northern Red Sea. On arrival at the Fleet Base, the ship was greeted by a large number of family and friends supported by the RAN Band.

Whilst in the Red Sea, SYDNEY operated in company with French and US warships in support of continuing United Nations sanctions against Iraq. It was the ship's third deployment to the region since the beginning of the Gulf crisis in August 1990. SYDNEY's crew was involved in the monitoring of ships entering and leaving the Jordanian port of Aqaba to prevent the transport of materials in contravention of UN Security Council resolutions.

During the deployment, SYDNEY interrogated 353 ships resulting in the boarding and search of 179 vessels, steamed 31,000 nautical miles, spent 132 days at sea out of 176 days deployed and despatched 61 bags of mail whilst receiving 265 in return.

US Ships Visit Sydney



USS ELLIOT *(Photo - Navy Photo Unit)*

Three United States Navy ships arrived in Sydney on Sunday 19 December 1993 at the start of a five day goodwill visit. They were the guided missile frigate USS RENTZ, Spruance Class destroyer USS ELLIOT, and the Kidd Class guided missile destroyer USS CHANDLER.

The ships were on their way home to San Diego, California after spending six months patrolling the Red Sea and Somalian waters on United Nations duties. Prior to Sydney, they visited ports in Western Australia.

Navy Chooses W.A. Vehicle

The Royal Australian Navy has selected Western Australian company, the OKA Motor Co Ltd of Bibra Lake, to supply a multi-purpose, four wheel drive vehicle which is designed for harsh Australian conditions.

The HMAS Stirling transport section recently took delivery of the OKA which will be used primarily at the Navy's Lancelin bombardment range north of Perth.

With a payload of 2.5 tonnes the full bodied OKA vehicle will carry a complement of 14, including a driver and save the Navy a great deal in operating and maintenance costs.

Utilising the OKA at the Lancelin range will prevent the Navy having to despatch four smaller four wheel drive vehicles to convey personnel to, and in the rugged terrain.

Vic Jeffery

New Patrol Boat For Kiribati

Australia presented a new Patrol Boat to the Republic of Kiribati at the Transfield Shipbuilding Facility at South Coogee on Saturday, January 22.

At the ceremony, Mr Gary Punch MP, Parliamentary Secretary to the Minister for Defence and representing the Minister for Defence, handed over the $5.5 million patrol boat to the Kiribati Minister for Environment and Natural Resource Development, Mr Tiwau Awira.

To be named RKS TEANOAI, it will be the 16th of its type built at the yard under the Pacific Patrol Boat Project.

RKS TEANOAI was chosen by the Government of Kiribati for the patrol boat in a nation wide competition. Teanoai literally means beckoning, however it also describes the motion of the sea on the passsing of a storm, or the wake.

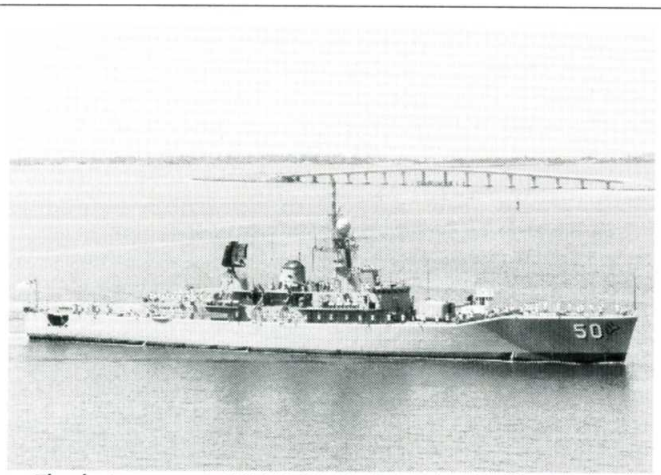
The project, the largest defence co-operation project undertaken in Australia, now involves 11 Pacific Island nations and will eventually comprise 20 vessels.

It enables South Pacific countries to improve surveillance of territorial and regional waters and compliments RAN ship visits, RAAF P3C Orion maritime surveillance flights and other related activities.

The RKS TEANOAI displaces 165 tonnes, has an overall length of 31.5 metres, and a crew of three officers, two petty officers and nine junior sailors. It is capable of 20 knots and has a range of 2500 nautical miles at 12 knots.

Vic Jeffery

The Republic of Kiribati crew give the customary "three cheers" after the commissioning ceremony. *(Photo - ABPH Simon Poynton)*



The destroyer escort HMAS SWAN (DE-50) arrived home at HMAS STIRLING on December 2 after six months away. Commanded by Commander John Dierks, SWAN visited Japan, Hong Kong, Malaysia, Brunei and the Philippines during her deployment. The ship steamed 28,000 nautical miles and participated in four naval exercises. *(Photo - LSPH Scott Connolly)*

HMAS TORRENS Hit by Freak Wave in Southern Ocean

The HMAS Stirling-based Royal Australian Navy destroyer escort HMAS TORRENS landed three crew members at Albany on 1 February after being hit by a king wave in the Southern Ocean.

HMAS TORRENS, commanded by Commander Warwick Gately, was at the time refuelling from the underway replenishment ship HMAS WESTRALIA when the freak wave struck the forward section of the ship.

Nine crew members on the forecastle were knocked off their feet, with three sustaining injuries warranting further medical attention. The others sustained minor cuts and bruises and fortunately no one was washed overboard.

The three were transferred to the Albany District Hospital after HMAS TORRENS diverted to land them before returning to rejoin her task group. A fourth sailor, suffering from dehydration (unrelated to the incident) was also landed.

There were no reports of HMAS TORRENS sustaining any damage.

Vic Jeffery

Sydney Homeporting – HMAS Warrnambool

The Fremantle Class patrol boat, HMAS WARRNAMBOOL formerly based at HMAS Cerberus in Westernport Bay, Victoria was homeported to the Sydney northshore establishment, HMAS WATERHEN, last February.

The Chief of Naval Staff, Vice Admiral Ian MacDougall, said that this has been brought on by the demise of the Attached Training Vessel concept and the full integration of Reserves with the Permanent Naval Forces.

"The homeporting of WARRNAMBOOL in Sydney will allow greater flexibility in meeting fleet support tasks and will also realise maintenance and support efficiencies," he said.

"In conjunction with her sister-ship HMAS FREMANTLE, WARRNAMBOOL will continue to participate in surveillance patrols, as part of the Coastwatch programme, along the south-east coastline of Australia from Brisbane to Adelaide," he said.

"WARRNAMBOOL and FREMANTLE will continue to provide seagoing training for Reserves residing in South Australia, Tasmania, and Victoria," he said.

HMAS WARRNAMBOOL (right) with her Sydney running mate HMAS FREMANTLE.

Navy Water Bombing Sydney Fires

During the recent January bushfires in New South Wales – the worst in 50 years – Royal Australian Navy and Army helicopters were used extensively in support of firefighting efforts. A total of 30 military helicopters were deployed, including 11 from the Navy (4 Seahawk, 4 Sea King and 3 Squirrel). Initially, they were used only for observation, evacuations and redeployment of firefighters in difficult terrain. From Monday 10 January however, the larger helicopters were employed extensively in water bombing duties. For these duties, the aircraft were based at the Richmond RAAF Base on Sydney's north western outskirts, operating from forward sites near the fires as required.

On Sunday, 9 January, the Navy evaluated the use of its Seahawk helicopters for water bombing bushfires. The state-of-the-art Seahawk, which is usually operated from RAN guided missile frigates to hunt submarines, was fitted with a water bucket attached to its cargo hook. Small 600 litre and large 1600 litre "Bambi" buckets were used. A control line was linked up via the helicopter's external winch to operate the water release. Use of the 600 litre "Bambi" with a Sea King had already been successfully achieved.

The evaluation in the Richmond, Gosford and Terry Hills areas was deemed a great success. Further evaluations were undertaken on Monday morning to test various bucket types and sizes ranging from 600 to 1600 litre capacity. These included large 1100 litre "Monsoon" and 1500 litre yellow buckets provided by the New Zealand Government. Prior to this, only small 350 litre buckets had been employed from small civilian helicopters. The only other water bombing capacity available came from Bell 212 and 412 helicopters operated by Lloyd Helicopters and fitted with conformal water tanks.

From Monday 10 January, more Navy Seahawks and Sea Kings were fitted with buckets to strengthen the water bombing force. They were employed to combat bushfires from the Central Coast to Sydney and the Blue Mountains. Army Blackhawk aircraft were also fitted with water bombing buckets following the successful Seahawk trials.

Operational water bombing tasks in support of NSW bushfire – fighting operations began in earnest from the afternoon of Monday, 10 January. From that time, aircraft were sent to where ever they were needed to stem the relentless progress of the fires. Several homes in the path of advancing fires survived in consequence of intense water bombing by Navy helicopters.

Typically, Navy helicopters operated in teams of four aircraft. Observation and target direction for the team being undertaken by a Squirrel, with water bombing tasks carried out by up to three heavy lift helicopters (Seahawk or Sea King). Water to fill buckets came from any suitable source; dams, rivers and lakes in the vicinity of the fires. Turn around times between dropping water on a fire, refilling the bucket and returning to the fire front were often as short as 2 minutes.

Aircraft worked around the clock with crews using any facilities available for planning missions. Although the working accommodation provided to Navy personnel by the RAAF was excellent, it became very crowded with aircrew and aircraft maintainers from three squadrons sharing the same operations room. At Richmond, it became common to see aircrew sitting on the floor with maps spread out as pre-mission preparations took place. Navy aircrew seemed unconcerned about these cramped conditions, simply remarking that they still had more space than would be available to them aboard ship. Much planning necessarily occurred "on the run" due to the nature of operations in a rapidly changing environment.

RAN helicopters "at work" during the Sydney fires.
(Photos - Navy Photo Unit)

In order to meet new fire threats, aircraft were often redeployed while airborne.

Missions typically lasted from 3 to 6 hours depending on the location of fires to be water bombed. Aircraft were on most days tasked to commence water bombing around 12.00 to 1.00pm, continuing till approximately 7.00pm. Helicopters would generally return to Richmond in the dark, often not landing till 9.00 or 10.00pm. For example, Seahawks and Sea Kings water bombing in the Stroud area were usually away from base for around 6 hours, whilst helicopters fighting fires in the Holsworthy area on Sydney's southern outskits spend about 3 hours away on task. In an example of close inter-service cooperation, Navy helicopters operating in areas remote from RAAF Richmond were refuelled from Air Force road tankers that had deployed to those areas. Lengthy missions in any helicopter are always tiring. This was especially so for the Sea King crews. Unlike the later Seahawks that are air conditioned, the Sea King cabin temperature is generally about 10 degrees warmer than the outside air. With ground temperatures of around 40 degrees during most of the emergency period, this meant

cabin temperatures of 50+ degrees that Sea King crews had to endure in full flying suits with helmet? Despite their discomfort they, as always, got on and did their job without complaint.

With the easing of the emergency, naval helicopters and their crews were progressively withdrawn from Friday, 14 January. Last to return home to Nowra were the Sea Kings of HS817 Squadron. They had also been the first deployed. In all, more than one million litres of water was dumped on fires by Sea Kings and Seahawks of the Royal Australian Navy over a six day period.

La Perouse

The French Navy ship FNS LA GLORIEUSE began a five day visit to Sydney on 21 February 1994.

On Wednesday, 23 February, Australian and French sailors took part in the annual wreath laying ceremony at the La Perouse Monument, La Perouse. The ceremony and monument commemorate the landing near that site of the French explorer Jean-Francois de Galaup, Comte de La Perouse between 24 January and 10 March 1788. La Perouse sailed from Botany Bay to continue his voyage of exploration through the Pacific never to be seen again. Fortunately, before leaving, he gave his journals and letters into the care of Captain Arthur Phillip, leader of the First Fleet, who he met at Botany Bay. These writings solved many mysteries of the time about the Pacific.

LA GLORIEUSE is a 454 tonne P400 Class patrol vessel which entered French Navy service in April 1987. The 54.4 metre ship is based in Noumea and carries a crew of 37 officers and sailors. She last visited Sydney during February 1993.

Fifth New Submarine

The Minister for Science and Small Business laid the keel of the fifth of the six Collins Class submarines to be built for the Navy in a ceremony in Adelaide on Thursday, 17 February.

Senator Chris Schacht officiated at the keel-laying of SHEEAN, to be named after Ordinary Seaman Edward 'Teddy' Sheean, who died a hero when the Bathurst Class corvette, HMAS ARMIDALE, was sunk during World War II.

As well as being attended by Mr Herbert Sheean (brother of 'Teddy') and former shipmates, the keel-laying was attended by South Australian Premier Mr Dean Brown, Swedish Ambassador Mr Bo Heinebeck, other Federal and State politicians, senior military and departmental officers, local dignitaries and industry representatives.

COLLINS, first of the Collins Class submarines in the $4.8 billion project, was launched at ASC's construction facility last August. Submarines 2, 3 and 4 – respectively FARNCOMB, WALLER and DECHAINEUX – are at different stages of completion within the facility.

The keel-laying of SHEEAN marked the official start of work on construction of that boat. She is due for delivery in November 1998.

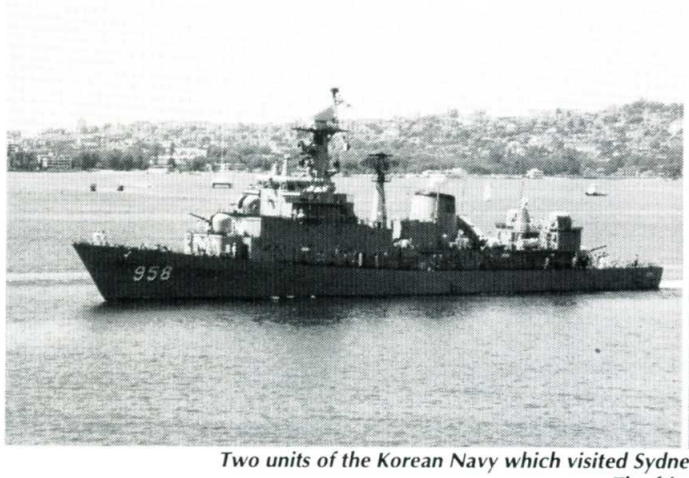
Commodore Geoff Morton and the Reverend Tom Frame at the commemorative service to mark the 30th Anniversary of the loss of HMAS VOYAGER on 10 February, 1964. *(Photo - NAS Nowra).*

Last Curtain Call

On Friday, 25 February 1994 HMAS NIRIMBA decommissioned after 40 years as a Naval Establishment. The Naval presence at Schofields aerodrome started as a Mobile Naval Air Station for the British Pacific Fleet in 1945. From 1953 to 1993 HMAS NIRIMBA was the RAN's Technical Training Establishment, training over 12,000 apprentices and adult trainees over 40 years. The engineering equipment had been largely transferred to HMAS CERBERUS where technical training is now conducted. Remaining equipment was auctioned over 1/2/3 February raising $1,000,000.

The decommissioning included a simple church service followed by the lowering of the Australian National Flag and the White Ensign for the last time. A feature of the day was the flying of the Paying Off Pennant from 0800 until the lowering of the Ensign. The pennant is normally the length of the Ship from stern to stern plus 1 foot (28cm) for every year in Commission. HMAS NIRIMBA's pennant was 234 metres long which is 760 feet. (190 feet from Jack to Ensign staff on Parade Ground, 40 feet for 40 years service and half an inch for every trainee trained in NIRIMBA, 530 feet).

Guest of honour was Rear Admiral Tony Hunt AO RAN, Naval Support Commander. The City of Blacktown was presented with the last Australian National Flag by HMAS NIRIMBA.



Two units of the Korean Navy which visited Sydney last November, the first visit by units from the ROK Navy since 1984. The frigate CHE JU and support ship CHUN JI were photographed leaving port. *(Photos - Brian Morrison).*

What A Welcome

HMAS Newcastle Commissions Into the Fleet

A Report from Ross Gillett, Navy Public Affairs, Sydney

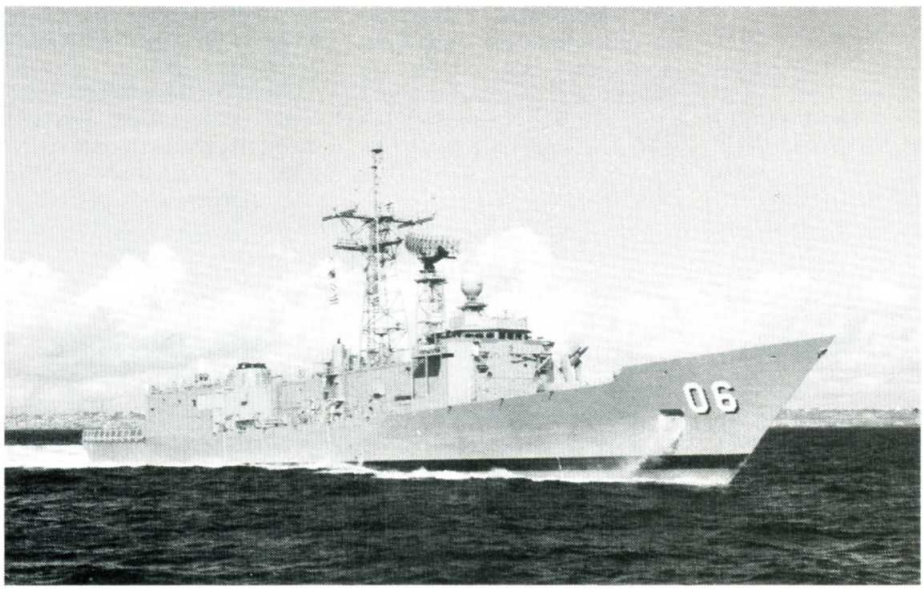
For the ship's company of the new guided missile frigate HMAS NEWCASTLE, Wednesday 8 December, will long be remembered as the beginning of a special and deep relationship with the citizens of the greater Newcastle.

Right: The commissioning ceremony.
(Photo - Navy Photo Unit).
Below: HMAS NEWCASTLE at sea, February 1994.
(Photo - ABPH Simon Peterson).
Bottom: At speed.
(Photo - ABPH Simon Peterson).

"In a massive welcome similar to the arrival home of the 'Gulf' ships and the celebrations to mark the Navy's 75th Anniversary, HMAS NEWCASTLE set the mood over the following five days for the people of the Hunter region to become part of the naval scene with specially organised tours, presentations by ship associations and the adoption of the Waratah Orthopaedic School as the ship's charity," CMDR Rowan MOFFITT said.

"Our arrival into harbour was a scene to be appreciated by all, with thousands of Novacastrians lining the foreshores", he added.

Atop Nobbys and Fort Scratchley and on many office balconies, the citizens of Newcastle came out in force. Afloat, local school children in charter ferries sang the Australian National Anthem, Advance Australia Fair and from the Fort, the old coastal battery blasted out a nine gun salute.



Amidst all of this activity, the brand new NEWCASTLE, made slow but steady progress through an enveloping spray of five fire tugs and the port dredger. With the Navy band embarked she edged closer towards her berth at Lee No. 5 for the first time.

Onboard the FFG, the Lord Mayor and Lady Mayoress were joined by other local dignitaries to witness this impressive welcome on what was a normal "working" day. The veteran steamer and paddle wheeler, WILLIAM THE FORTH and the tiny museum pilot boat AJAX provided additional welcomes, one an 1880 replica steamer and the other, a 1948 MSB boat.

Waiting ashore, hundreds more locals had arrived to see for themselves, the ship's maiden voyage into the port. More music began to play, this time the

Hunter's famous Marching Koalas for the large crowds who were now gathering along the wharf and roadway. Traffic jams soon developed as the cars slowed down to view their new NEWCASTLE.

The executive officer LCDR Dave Trudgeon said of the arrival, "This spectacular welcome proved only the precursor of many more shore and ship activities during the ship's first visit, confirming the famous Hunter Hospitality reputation."

CMDR Moffitt welcomed aboard numerous representatives including the Naval Association, RSL, Maritime Museum, City Council and TAFE for the presentation of carafes, crests, a painting of the old paddlewheeler NEWCASTLE, and the ship's Commissioning Cake.

The next day he presented the Ship's Crest to the Lord Mayor, who officially opened "Hunter Street" and donated a series of books describing the Hunter. At the same reception, the ship made its first presentation to the Waratah School, a $4,000 page turning machine for use by the handicapped children.

Commissioning morning was as bright and brilliant as the previous three days. All worries of a "wet weather" procedure quickly passed as the crowds of invited guests and general public alike witnessed a ceremony marked by positive precision and appearance. The "Commissioning Order" was read by CMDR Moffitt to begin the actual service.

With the White Ensign raised for the first time as a commissioned ship, orders were given for "March on the Guard" with the Commanding Officer and crew moving aboard "to man" the port side. Ashore, the Navy Band completed its duties, retiring from the parade ground. After formal inspections of the ship by CDF, CNS, Senator Ray and the Lord Mayor, a reception was held on the wharfside.

Commissioning Cake.
(Photo - Navy Photo Unit).

The Lord Mayor of Newcastle unveils "Hunter Street".
(Photo - Navy Photo Unit).

"After the most formal of days for any ship, Fort Scratchley, again set the scene on Saturday evening, when the ship's crew attended the evening bar-b-que, sponsored by the Newcastle Lions Club and the Maritime Museum. Local port people from the tugboats and pilots joined in with personnel from the US Coast Guard icebreaker POLAR SEA and HMAS MELBOURNE providing a most pleasing informal end to a busy day," CMDR Moffitt said.

HMAS NEWCASTLE's first "public" open day was held on Sunday 12 December, with more than 10,000 families and friends taking the opportunity to be "welcomed aboard".

By the close of the weekend and after five busy days in port, the ship and crew set sail Monday 13 December at 10.00am, bound for FBE and in 1994, eight months of hard work-up.

Australian Army Watercraft

Part Two

Dinghies, Sea Ambulances, Ketches, Luggers and Launches (AD, AH, AK, AL & AM)

By Brian Alsop

When the Australian Army's water transport units were first raised in 1942, they were initially equipped with requisitioned civilian craft. The Army accepted whatever was available that would do the job, given that many of the most suitable craft had already been taken over by the Navy. This article describes the Army's dinghies, ketches, luggers and launches. The majority of requisitioned craft fall within these categories.

Dinghies (AD)

The first dinghies used were 20 powered examples acquired from a variety of owners and locations during 1943. Size varied from 12ft 2in to 16ft, with most around 15 to 16ft in length. As time progressed these were supplemented by purpose built craft of two basic designs; an 18ft powered seine type dinghy plus a 16ft powered dinghy.

In addtion to the above craft classified as AD, there were also a small number of similarly sized requisitioned craft which were classed as launches, thus bearing the prefix AM before their Army registered numbers.

Ketches and Schooners (AK)

During the course of World War Two, 45 vessels were allocated Army numbers with an AK prefix. These included 39 ketches and 5 schooners requisitioned during 1942/43 plus 1 craft which was not impressed. Three of the ketches (AK9 CAMBRIA, AK60 WEERUTTA and AK69 MELBIDIR) were subsequently reclassified as trawlers, thus having the prefix to their hull numbers altered from AK to AS.

While the average length of the ketches and schooners requisitioned for the Army was only 55 feet, four were substantial vessels of 90 feet or more in length; the schooner AK82 ALMA DOEPEL (105 ft) and the ketches AK94 ABEL TASMAN (98 ft), AK95 SIR JOHN FRANKLIN (90 ft) and AK96 ARGA (105 ft). These four vessels were all intended for trading around the Tasmanian coast; the latter three being completed in 1943 at a time when the Australian Army was scouring the country for suitable craft.

As with requisitioned luggers, the largest user unit for ketches in Army service was the Australian New Guinea Administrative Unit (ANGAU), who were allocated twenty-nine. One, AK121 AROETTA, was allocated to the NT Coastal Reconnaissance Unit, with a further two used as training vessels at Melbourne and Toorbul Point.

Luggers (AL)

Eighty-nine luggers were requisitioned for Army service, principally from the Thursday Island and Western Australian pearling fleets. Of these, 23 transferred to the Royal Australian Air Force in June 1943. Thirty-nine served with ANGAU, while one, AL254 CHARM, was allocated to Z Special Unit as of July 1944. AL293 SWALLOW was transferred to the Services Reconnaissance Department (SRD) in March 1945 for use as a training vessel. Unlike the ketches and schooners taken up for Army service, the majority of luggers were sail powered; only 29 had engines.

In recent years the AL prefix, that was originally allocated to luggers, has been used for lighters such as AL1602 and AL1603 which make up the pontoon wharf at Bulimba in Queensland.

Sea Ambulances and Launches (AH and AM)

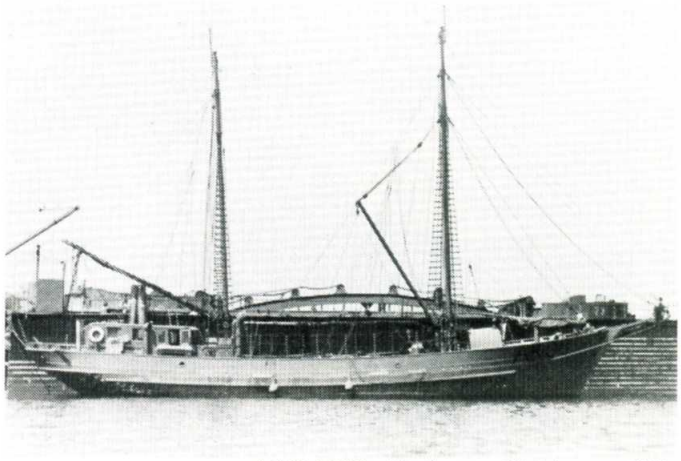
As with other types of Army watercraft, initially those launches in service were vessels requisitioned during late 1942 and early 1943. Eventually 185 launches were acquired for Army service in this manner. They ranged in size from about 20 feet to around 60 feet in length, with most 35 to 40 feet. The one exception to this was the sole requisitioned vessel to carry the AH prefix, AH169 STRADBROKE II, which was 94 feet long.

STRADBROKE II was requisitioned from the Port Philip Sea Pilots on 12 April 1943, being put to work as a sea ambulance. January 1944 saw her based at Lae and then Port Moresby with 4 Sea Ambulance Transport Company. November 1944 saw STRADBROKE II based at Purata Island near Bougainville, this time with 13 Water Transport Operating Company, carrying on her task of casualty evacuation. She was purchased by the Army on 3 February 1944, remaining in Army service until 1946 when whe was put up for auction at Williamstown. Passed in, she was eventually sold on 21 May 1947.

Efforts were made to obtain built for the purpose craft as soon as possible after the formation of the Army Transportation Service (Royal Australian Engineers) in October 1942; the first purpose built launches arriving in 1943. Most

AD2279, a 16 foot powered surf boat built by Joyce Bros at Neutral Bay, Sydney

The ketch ALMA DOEPEL in 1959. She served as AK82 from 1943 to 1946.
(Photo - L. Rex).



AK96 ARGA at Sydney on 19 February 1944.

numerous and one of the first types of craft to arrive was the 40 foot wooden workboat, with 216 eventually being built for the Army by late 1945 in three variants plus others transferred to the Royal Navy and Royal Australian Navy.

Most sea ambulance (AH) types were variants of launch (AM) types. Craft were periodically converted from one variant to another depending on operational requirements and to which units the craft were allocated. Numerous craft, but particularly 62 ft launches, carried both AM and AH prefixes to their numbers at different times.

The principal launch types constructed during the Second World War are summarised below.

80 Foot Ambulance Launch. Constructed on the 80 ft HDML hull, 5 of these launches were eventually built in Tasmania specifically as sea ambulances for the removal of sick and wounded from operational areas. However, only three were delivered by war's end. One, AM1734 KURANDA, is noted in September 1945 as in use as a command craft. The construction programme for these craft was 8 vessels as of 1 March 1945 with 5 craft under construction at that time. By 30 September 1945, the requirement for sea ambulances had been reduced to 7 craft including the command craft, AM1734 KURANDA, and the one requisitioned sea ambulance, AH169 STRADBROKE II. With 4 of the vessels having been laid down by 31 December 1943, efforts to build these craft were slow, although by 1 March 1945 they were nearing completion. One telling comment appears in a March 1945 report which after reference to the very slow rate of construction states that "Halvorsens and Green Point, NSW shipyards would be more suitable for the expediting of construction on these vessels if the priority of this type justified its construction in these shipyards." With a capacity to carry up to 33 patients on stretchers or be modified as a headquarters vessel for senior commanders, the 80 ft sea ambulance was a versatile launch which unfortunately arrived too late for large scale use in its intended role. Two vessels were also under construction in 1945 for the Royal Navy at the Melbourne Harbour Trust's yard, but were cancelled in September 1945. Specifications are as follows.

The one requisitioned vessel to carry the AH prefix, AH169 STRADBROKE II, at Chowder Bay in Sydney Harbour.

Army Numbers:	AH/AM 1730-1734.
Construction:	Wooden - double diagonal planked.
Dimensions:	Length overall 80ft. Beam 16ft. Depth (moulded) 9ft 9in. Draft loaded 5ft 3in aft, 4 ft fwd.
Engines:	2 x Hercules DNX diesel 300 bhp with 2/1 reduction ratio gear box. Auxiliary - Ford 10hp driving one 4kW generator.
Fuel:	Diesel - 1608 gallons. Petrol - 49 gallons.
Speed:	Cruising 12 knots, Maximum 15 knots.
Range:	1400 miles approx.
Stretcher capacity:	30 in main sick ward. 3 in special ward - Total 33.
Accommodation:	4 berths in deckhouse. 12 berths in main accommodation.
Crew:	1 officer, 10 ORs and medical staff.
Armament:	1 x 20mm MG. 2 x Twin Vickers .303 in.
Purpose:	Sea ambulance for the removal of sick and wounded from operational areas.

62 Foot Fast Supply/Ambulance Launch. Designed as the "Halvorsen 62", and declared a standard design in 1943 by the Small Craft construction Directorate, the 62 foot Fast Supply Launch was built in large numbers by Lars Halvorsen and Sons at Ryde, NSW for both the US Army and the Australian Army. Four examples also served with the Services Reconnaissance Department (SRD) under RAN control after first building as Army craft. They were a hard chine craft mostly driven by a pair of petrol or diesel engines. Some were however, completed with a triple screw diesel engine combination. As built, Australian 62-footers were propelled by either two 500 hp Garwood Liberty marine petrol

engines or three Gray marine diesel engines depending on maximum speed required for a craft's intended operational role. Some early build vessels, such as AM 1475 ALATNA, equipped with Garwood petrol engines, were later fitted with two Gray marine diesel engines as these became available. This was necessitated by reliability problems with the Garwood engines, plus the ever present dangers associated with the operation of petrol engines at sea.

The Australian Army had ordered 27 of these craft by September 1945 when, due to war's end, the requirement was reduced to 14 craft. By 30 September 1945, 13 62-footers were in Army service with one more building. A further 4 ex Army craft, ALATNA (AM1475), KARINA (AM2222), MISIMA (AM2829) and NYANIE (AM2754), were commissioned as RAN vessels for operations with the SRD.

In Australian Army service, the 62-footer fulfilled a dual operational requirement as both a fast supply launch and as a sea ambulance. With relatively minor modification, they could be converted to fast sea ambulances with a capacity of 17 stretcher patients, for use in operations where high speed was essential. A number of these craft carried both the AH and AM prefixes to their hull numbers during their Army careers, depending upon how they were configured and to which unit the vessels were issued at a particular time. One vessel, AM2753 IRENE, was fitted out for use as a command craft by the Australian Commander-in-Chief, General Sir Thomas Blamey. It differed from other craft in the class in having among other things, french polished timber in the aft saloon and cabins! Used in later years as command craft, the final two 62 foot launches in Australian Army service, AM2833 MIZMA and AM2834 FERN, lasted until the late 1960's before being paid off.

Army Numbers:	AH/AM1475, 2090-2094, 2222, 2751-2754, 2829-2835.
Construction:	Wooden - diagonal planking - hull not sheathed.
Dimensions:	Length overall 62ft Beam 14ft 6in Depth (moulded) 7ft 3in Draft (loaded) 3ft aft, 2ft 9in fwd.
Engines:	2 x Garwood Liberty petrol 500hp (first 6 craft), 2 x Gray 64HN9 marine diesel (one vessel), 3 x Gray 64HN9 marine diesel (remainder). Auxiliary - 3hp engine driving 1kW generator.
Fuel:	Petrol or Diesel (as above) - 1000 gallons
Speed:	Cruising 15 knots, Maximum 25 knots.
Range:	1000 miles approx.
Cargo Capacity:	1296 cu ft, 8 tons DWT.
Accommodation:	Two 4 berth cabins - Total 8 berths.
Crew:	8.
Armament:	3 x Twin Vickers .303in.
Purpose:	Fast supply vessel for stores and personnel.
Other Types:	Sea ambulance with accommodation for 17 stretcher patients.

45 Foot Water & Refuelling Launch.

These craft were designed for the refuelling and defuelling of petrol and distillate fuel plus the supply of water, lubricants and sundries. Australian Army vessels were similar to the 45ft water and refuelling launches built for RAAF service during World War Two except that the forecastle on the Army craft were raised to a height of 18 inches above deck level.

Forty-two water and refuelling launches were ordered for the Army prior to 1 March 1945, however due to a lack of suitable engines and mechanical pumping equipment their construction was significantly delayed. By March

Requisitioned luggers AL256 PEARL (left) and AL255 SHEILAH (right) at Norman Wright's shipyard in Brisbane during conversion for Army service.

Requisitioned launch AM113 MIRIMAR towing the lighter EXCELSIOR on the Brisbane River.

1945, 10 vessels were under construction but none had been delivered. Army requirements were reduced to 5 craft as of 30 September 1945 due to the end of hostilities. By this time still no craft had been delivered, with the five required craft listed as still being under construction. When they finally entered service is not known, however they are listed among types of craft in service as of August 1946.

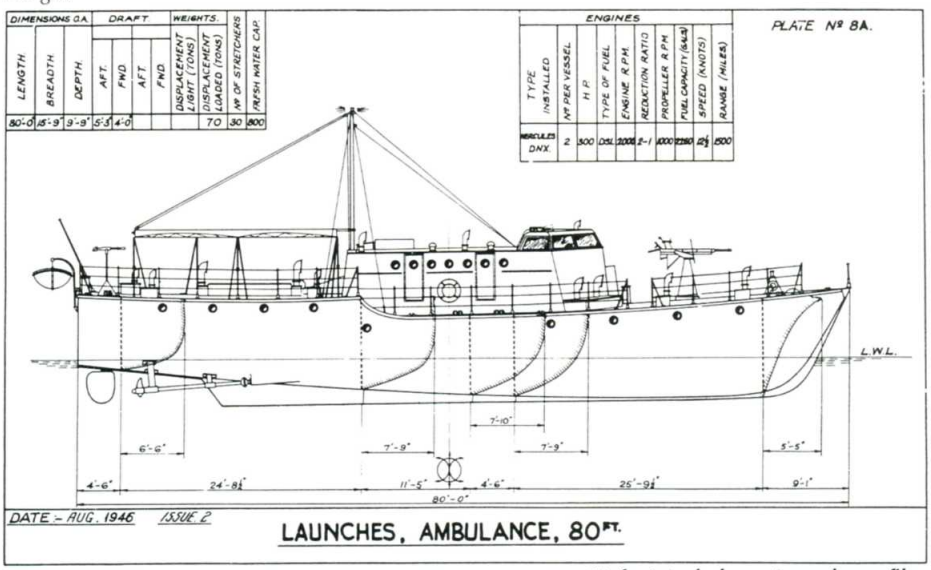
Army Numbers: AM2703 plus others.
Construction: Wooden.
Dimensions: Length overall 45ft.
Breadth 12ft.
Depth (moulded) 5ft 9in.
Engine: 1 x Gray 64HN9 marine diesel 225 hp, or
1 x Perkins 56M marine diesel 130 hp.
Fuel: Diesel - 90 gallons.
Speed: 12 knots light, 9 knots loaded.
Cargo Capacity: Petrol - 1000 gal,
Distillate - 1000 gal,
Water - 600 gal,
Oil - 150 gal.
Accommodation: 4 berths in forecastle.
Crew: 4.
Armament: Nil.
Purpose: Harbour fuel, oil, and water tender.

40 Foot Workboat. Most numerous of the various launch types built for the Army during World War Two, the ubiquitous 40 foot workboat was constructed in three basic variants. Between 1942 and 1946, 216 were built by General Motors Holden, Ford Motor Company, Brine and Botterill & Fraser for the Australian Army using mass production line methods. Further vessels were built for the Royal Navy, Royal Australian Navy and Royal Australian Air Force. 336 craft had been ordered for the Army prior to September 1945 including 320 standard, 10 ambulance and 6 refrigerated variants. The Army's requirement was reduced to 216 workboats as of September 1945, by which time 299 had already been completed including 20 craft transferred to the RN during 1945 from Australian Army stocks. A further 46 craft were transferred to the RAN from 1946.

The standard 40ft workboat was used for light towing plus the carriage of 12 tons of cargo and personnel. Refrigerated craft were similar except for having a derrick aft of the cabin and an insulated hold with a refrigerated cargo capacity of 2 tons. Forty foot ambulance launches were completed with an enclosed cabin able to accommodate 8 stretchers. The sea ambulance variant could be converted into a HQ craft if required, fitted with an additional 6 bunks.

This vessel was designed around the 165 hp GM671 diesel engine with a specified load of 10 tons and a speed of 10 knots in sheltered waters. Pending the supply of Gray marine diesel engines, Chrysler Royal and Cadillac petrol engines were substituted, the latter with an Australian built "Momy" gearbox, in early build craft. Later craft were fitted with Gray marine diesel engines from Australian production. Post war, most remaining petrol engined workboats were converted to diesel with either Gray or Gardiner engines fitted.

Later in their Army careers, the remaining sixteen 40 foot workboats were renumbered AM400 to 415. The last Australian Army 40 foot workboat, AM402 (ex AM1646) MENA, was disposed of in August 1982 after 40 years service. Ex Army craft continue in Navy service albeit in reduced numbers, with the last expected to remain in use till the end of the century.



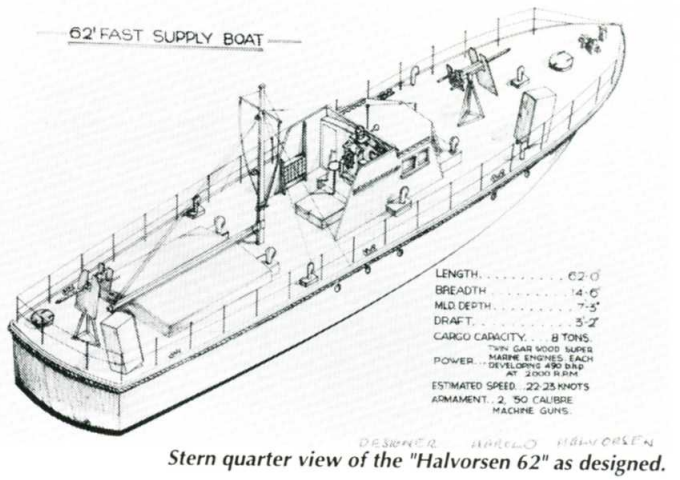
80 foot Ambulance Launch; profile.

Army Numbers: AH/AM1435-1442, 1558-1671, 1722-1729, 1820-2009 plus others.
Construction: Wooden, copper sheathed to 6 in above loaded waterline.
Dimensions: Length overall 40ft.
Beam 12ft.
Depth (moulded) 4ft 6in.
Draft (loaded) 5ft 3in aft, 3ft 9in fwd, (light) 4ft 6in aft, 2ft 8in fwd.
Engine: 1 x Cadillac V8 conversion petrol engine 114hp, or 1 x Chrysler Royal RM8 marine petrol 108/143hp, or 1 x Gray 64HN9 marine diesel 225hp.

AM116 MARINA on the Brisbane River.

AM164 JULUS during acceptance trials following conversion for Army service.

62 foot Ambulance Launch, AH2090 BALIDU, with patients aboard 31 August, 1945.



Stern quarter view of the "Halvorsen 62" as designed.

Fuel:	Petrol or Diesel - 220 gallons (4 tanks).
Speed:	Cruising 9 knots, Maximum 12 knots.
Range:	400 miles approx.
Cargo Capacity:	12 tons approx.
Accommodation:	One 4 berth cabin.
Crew:	4.
Armament:	1 x Twin Vickers .303.
Purpose:	Transport of store and personnel. Light towing. Sea ambulance with a capacity of 8 stretchers. HQ craft fitted an additional 6 bunks.

38 Foot Fast Supply Launch. Another Halvorsen designed and built craft, the "Halvorsen 38" was originally developed in 1941 for the Royal Australian Air Force as a seaplane tender. Subsequently the vessel was adopted as "standard" for use by the Allied forces. It was used as a command craft and for fast supply by the US Army, as a torpedo recovery boat by the Royal Australian Navy, for air sea rescue and seaplane tender duties by the RAAF, and for command, patrol and fast supply duties by the Australian Army. In total, 147 38-footers were built by Lars Halvorsen over a 4½ year period from March 1941, including 43 for the RAAF, 2 for the RAN, 2 for the Dutch and 50 for the Australian Army. The balance of 50 craft were built for the US Army.

Australian Army plans as of 1 March 1945 called for seventy-seven 38 foot fast supply launches to be ordered. With the War's end, this requirement was reduced to 40 as of 30 September 1945 by which time 46 craft had been delivered, the six surplus craft being unallotted. Two craft, AM1499 BOOLAROO and AM2409 were transferred to the Royal Australian Navy between April and September 1945 for operations with the SRD.

Two marks of "38-footers" were built. The first 22 craft built for the Australian Army were twin screw vessels propelled by two high speed Chrysler or Ford V8 petrol engines. Later vessels were single screw, completed with one Gray marine diesel engine and a consequent reduction in maximum speed from 25 to 18 knots.

Following war service, many of the Army and RAAF craft went on to serve faithfully for many years with the Water Police in New South Wales and with the Department of Civil Aviation as search and rescue vessels.

Army Numbers: AM1479-1502, 2409-2410, 2413, 2419 plus others.

Construction:	Wooden, unsheathed.
Dimensions:	Length overall 38ft. Beam 10ft 9in. Depth (moulded) 4ft 9in. Draft loaded 2ft 9in aft, 2ft fwd.
Engines:	2 x Vosper Ford V8 standard marine petrol 95hp, or 2 x Vosper Ford V8 Mk III marine petrol 95hp, or 2 x Chrysler Royal 8 marine petrol 108/143bhp, or 2 x Chrysler Crown marine petrol 100/115bhp, or 1 x Gray 64HN9 marine diesel 225hp.
Fuel:	Petrol or Diesel - 200 gallons (2 tanks).
Speed:	Mark I: Cruising 15 knots, Maximum 25 knots. Mark II: Cruising 11 knots, Maximum 18 knots.
Cargo Capacity:	15 cwt DWT.
Accommodation:	One 4 berth cabin.
Crew:	4.
Armament:	1 x Twin Vickers .303in.
Purpose:	Fast supply vessel for personnel, stores and despatches.

26 Foot Motor Dory. Designed for harbour duties and light cargo carrying,

AM2703, one of five 45 foot water and refuelling launches built for the Army.

40 foot workboat AM1938 QUALCO with the 25 foot utility launch AM2234 alongside on the Yarra River, Melbourne.

the 26 ft motor dory was used widely by the Australian and American forces throughout Australia. First received by the Australian Army in 1944, 28 were eventually to see Army service. A total of 46 vessels were ordered for the Army. These included 26 hulls taken over incomplete from US surplus production at Slazengers in NSW, as well as 20 craft ordered from General Motors Holden, Adelaide in South Australia. By March 1945 only 19 had been received by the Army, with 25 in service by late September. Twenty-five similar craft served with the Royal Australian Navy from 1945, including ex Army AM1708 JENOLAN, renumbered DR16 in Navy service. Ten motor dories had also been delivered to the Royal Navy by September 1945, against a requirement for 53 craft. Several of these craft were originally building for the Australian Army, but due to the reduction in Army requirements had been taken over by the Royal Navy. While gone from Army service by the 1960's, at least two 26 ft motor dories were still held by the RAN in 1978.

Army Numbers:	AM1702-1721, 2725-2729 plus others.
Construction:	Wooden, unsheathed.
Dimensions:	Length overall 26ft. Beam 8ft 6in. Depth (moulded) 4ft 6in. Draft 3ft 3in aft, 1ft 7in fwd
Engine:	Perkins S6M marine diesel 130bhp, or Vosper Ford V8 Mk III marine petrol 95 bhp.
Fuel:	Diesel or Petrol - 72 gallons (2 tanks).
Speed:	Cruising 8 knots, Maximum 10 knots.
Range:	260 miles approx.
Cargo Capacity:	1.25 tons.
Crew:	3.
Armament:	Nil.
Purpose:	Harbour duties and light cargo carrying.

25 Foot Utility Launch. The Army's 1944-45 building programme called for 19 of these craft to be built. However, it appears that only 16 were ever ordered from the Victorian builder before the Army's requirement was reduced to only 6 craft in September 1945 following the end of World War Two. All craft were delivered before war's end with 4 in use as at March 1945. They were used by marine supply platoons for fishing purposes in operational areas. The craft had however, been designed for use as light utility boats for harbour duties. Post war the craft were used for their designed purpose, remaining in service till at least the early 1960's.

Army Numbers:	AM2233-2234, 2247-2248, 2454.
Construction:	Plywood, unsheathed.
Dimensions:	Length overall 25ft. Beam 8ft. Depth (moulded) 3ft 9in. Draft 3ft aft, 1ft 6in fwd.
Engine:	Chrysler Royal 8 marine petrol 108/143 bhp, or Vosper Ford V8 petrol 95hp.
Fuel:	Petrol - 40 gallons.
Speed:	13 knots.
Crew:	2.
Armament:	Nil.
Purpose:	Light utility boat and harbour duties.

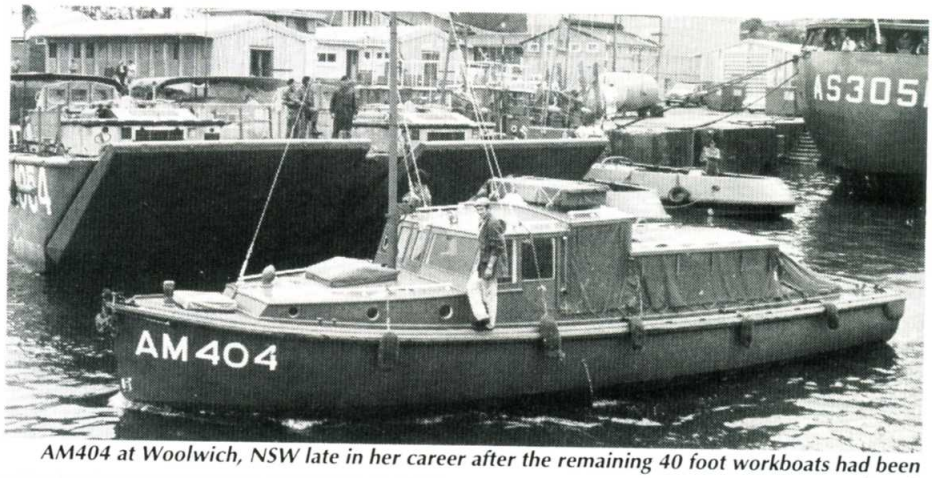
Several types of craft built during the Second World War survived in Army service for many years albeit in greatly reduced numbers. As the years progressed, Army requirements for watercraft became less and less, culminating in a government decision during 1972 that all Army seagoing vessels should be handed over to the

The 62 foot launch AH2831 at her birthplace; Ryde on the Parramatta River.

40 foot ambulance launch AH1567 HATTA; New Britain May 1945.

Navy; the Army only keeping craft for coastal and inland waterway use. The last survivors among the war built craft were the 40 foot workboats which lasted until 1982.

12 Metre Aluminium Workboat. In Army use, the last "40-footers" were replaced by seven 12 metre aluminium workboats, the first of which entered service in 1979. They were designed for the transport of stores and personnel, diving and light towing duties. Built by North Queensland Engineers and Agents Pty Ltd (NQEA) at Cairns, Queensland between 1979 and 1981 to a Navy design, these craft were of all welded aluminium construction with a multi-chine hull form and twin screw propulsion system, the screws being shrouded with steering nozzles. They were a variant of the 12m Navy workboats (NWB), 15 of which were built by NQEA during the same period for diving and general duties. Many Army water transport personnel, who had operated the older 40-footers, would have preferred to retain them in preference to the 12m aluminium workboats which became their replacements. The 12m craft were found to be poor craft for towing duties. However, for duties other than towing, these workboats proved satisfactory. All vessels were sold during June 1993; five in Sydney and one each in Brisbane and Perth.



AM404 at Woolwich, NSW late in her career after the remaining 40 foot workboats had been renumbered.

38 foot fast supply launch AM1498 BOMERA during speed trials on the Parramatta River.

Army Numbers:	AM417-423.
Construction:	Aluminium - all welded.
Dimensions:	Length overall 12.18m (40ft). Breadth (moulded) 3.66m (12ft). Depth (moulded) 1.96m (6ft 5in). Draft: 0.91m (3ft).
Engines:	2 x General Motors 6V53 marine diesels.
Fuel:	Diesel - 1086 litres (239 gallons).
Speed:	12 knots.
Range:	200 nautical miles (approx 17 hour endurance).
Cargo Capacity:	2.5 tonnes or 25 passengers.
Accommodation:	3 berths.
Crew:	2.
Armament:	Nil.
Purpose:	Transport of stores and personnel. Light towing.

7 Metre Sharkcat Launch. Six Sharkcat launches were acquired by the Army during 1980 for use as safety craft. The remaining four are employed with the Commando and the Special Air Service Regiments, with one craft each based in Sydney and Melbourne plus two in Perth. These launches are likely to remain in service for the foreseeable future. Two craft, AM215 and AM218 have been sold, the latter in June 1993.

Army Numbers:	AM215-220.
Construction:	GRP (Fibreglass) - twin hull.
Dimensions:	Length overall 7.01m. Breadth 2.48m. Draft (hull only) 0.52m.
Engines:	2 x Johnson 175 outboards.
Fuel:	Petrol.
Speed:	27 knots.
Range:	400 nautical miles.
Cargo Capacity:	1 tonne.
Crew:	2.
Purpose:	Water safety craft. Transport of personnel and stores.

9 Metre Sharkcat Twin Hull Workboat. Eight of these 88 Express series craft are currently in service around Australia. They are operated by 1 Commando Regiment, Special Air Services Regiment and Army Water Transport personnel.

Army Numbers:	AM237-243, 428.
Construction:	GRP (Fibreglass) - twin hull
Dimensions:	Length overall 8.35m. Breadth 2.82m. Draft (hull only) 0.63m.
Engines:	2 x Volvo AQAD-40/280 series.
Fuel:	Diesel.
Speed:	27 knots.
Range:	420 nautical miles.
Cargo Capacity:	1 tonne.
Crew:	2.
Purpose:	Water safety craft. Transport of personnel and stores.

Other similar craft have also seen Army service. A 7.8 metre Marlin Broadbill launch, AM232, was used by Norforce in Darwin as a safety boat during water operations courses. Powered by two 140hp outboard motors, the vessel joined the Army in March 1988, being written off during 1990. AM427, a 7 metre twin hull aluminium workboat, built by Custom Craft at Cairns, Qld, is currently in service at Thursday Island. Five 7.3 metre offshore safety craft, numbered AM227 to 231 have also recently entered Army service.

19.8m (65ft) Command Launch. Two large launches, which at 65 feet are the largest launches built for the Army since World War Two, are currently under construction at Geraldton, WA. Designed and built by Geraldton Boat Builders, the first vessel, AM1353, is scheduled for delivery in late 1994. The second vessel ordered, AM1354, is due for delivery in 1995.

Only those types of craft over 20 feet long have been discussed above. Other smaller craft have also been used by the Army in large numbers for a variety of uses during the past fifty years. Twenty-seven 18 foot launches bearing the AM

prefix were purpose built for the Army during 1943/44 for use as small utility craft. Similarly sized minor craft, of more modern design, continue in Army service to the present day in small numbers.

Like the barges and landing craft with which they worked, the launches, ketches and luggers of Army Water Transport during World War Two were maids of all work. They provided rations and ammunition to troops around Papua, New Guinea and the Islands where no other means of supply existed. In many cases they were the ambulances that ferried wounded troops to field hospitals. Sometimes they were employed as patrol craft in ways similar to how naval patrol craft would be employed today or the Navy Fairmiles and HDML's were used during World War Two. Whatever tasks they were given, the Army Water Transport crews of World War Two did what was required of them and often more in what were often dangerous conditions. Over 40 craft of all types were lost during the period 1943 to 1945; many as a result of enemy action.

The third article in this series will detail those trawlers and tugs that have carried the AS and AT prefixes to their numbers in Australian Army service.

AM2729, one of five 26 foot motor dories intended for use with the SRD but completed too late for war service.

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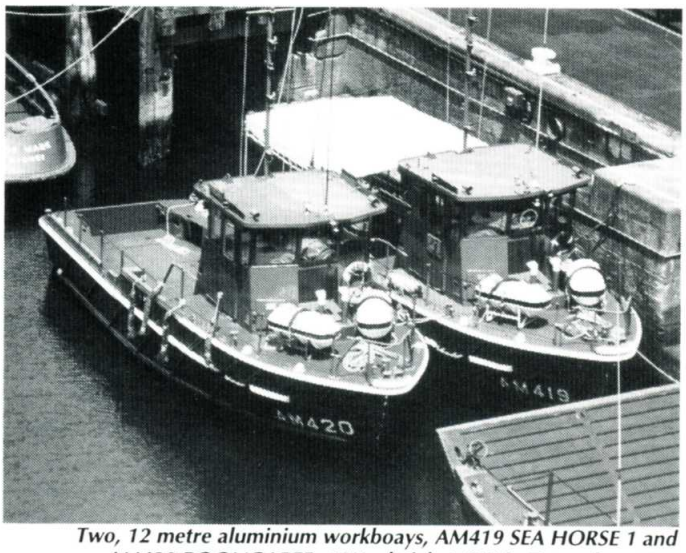


Two, 12 metre aluminium workboays, AM419 SEA HORSE 1 and AM420 BOONGAREE at Woolwich, NSW in December 1982

The 7 metre Sharkcat launch AM216 at Balmoral, NSW in February 1982.

HMAS OTWAY
... The last voyage

Australia's oldest submarine, HMAS OTWAY, entered harbour for the last time on Friday, 4 February 1994, and to pay off on 17 February, ending nearly 26 years of service with the Royal Australian Navy.

An Oberon Class diesel electric submaine, built by Scotts Shipbuilding at Greenock in Scotland, OTWAY was launched on 29 November 1966. She commissioned at Greenock on 22 April 1968. Since arriving in Sydney for the first time on 7 October 1968, HMAS OTWAY has been based at HMAS PLATYPUS, the Navy's submarine base in Neutral Bay, Sydney. The submarine was commanded by Lieutenant Commander Iain Arthur, RN.

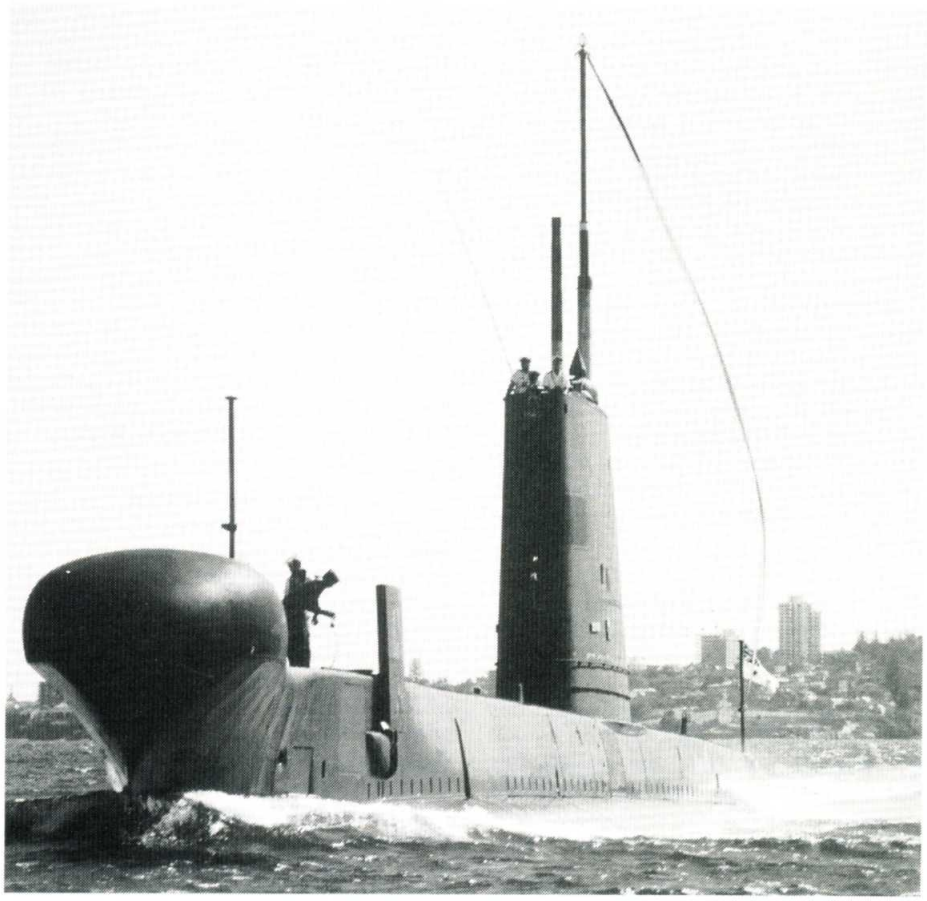
During her operational life, OTWAY travelled approximately 415,000 nautical miles, the equivalent of sixteen and a half times around the world. The boat had three extensive refits during her service at which time several improvements to weapons and sensors were incorporated as more advanced equipment became available.

HMAS OTWAY is the second Royal Australian Navy Oberon Class submarine to be decommissioned. She follows HMAS OXLEY which paid off during February 1992.

The day OTWAY paid off the keel of Australia's fifth Collins Class submarine, SHEEAN, was also laid down. Six Collins Class submarines are being constructed for the RAN to replace the Oberon Class boats that have served Australia since 1967. The first, HMAS COLLINS, is expected to begin sea trials during late 1994 and commission into the Navy during 1995. Approximately 25 per cent of OTWAY's crew will join COLLINS before sea trials begin.

The future for HMAS OTWAY is still to be confirmed, but the present intention is for her to be utilised as an alongside training vessel at HMAS PLATYPUS, Neutral Bay. In this role, new entry submariners would undergo significant amounts of their initial training aboard OTWAY to gain "hands on" experience before going to sea.

By Brian Alsop.



Two views of HMAS OTWAY arriving in Sydney for the last time, flying her paying off pendant. (Photos - POPH Cameron Martin).

Amphibious Helicopter Carrier (LPH)
For the Royal Navy

Requirement

In February 1992, the Ministry of Defence issued an Invitation to Tender (ITT) for an Amphibious Helicopter Carrier (LPH). The primary role for this vessel is to enable the Royal Navy and Royal Marines to embark and operate a squadron of helicopters in support of an Amphibious Warfare Group, and to accommodate a Commando Group, its vehicles, ammunitions and equipment. The vessel is also intended to be suitable for a number of secondary roles, including ferrying Sea Harriers and providing a base for maritime counter-terrorist operations.

Underpinning these operational requirements is the need to produce a high quality platform at an affordable price whilst also ensuring that the vessel will be reliable and equipped with an effective and functional combat system.

The ITT requirements encouraged an innovative approach to be taken to the design of, and contract conditions for, the vessel.

VSEL/KGL Proposal

The proposal is to design and build a new vessel which meets the role defined by the Ministry of Defence.

The overall design of the vessel has been developed by VSEL utilising its skill and experience in naval ship design. This expertise has ensured that full account has been taken of the Ministry of Defence requirements in terms of safety and operational capability.

KGL's involvement will be to construct the vessel to the appropriate Naval Engineering Standards and Classification Society Rules, install the propulsion system and other auxiliary machinery, and partially outfit.

Following completion of the work at KGL in Glasgow, the vessel will be delivered under its own power to the VSEL facility at Barrow for completion of outfitting, the installation and setting to work of the combat system and all other military features.

The combat system is fully compliant with Ministry of Defence's requirements, utilising in-service equipment to the maximum extent in order to achieve a cost-effective and low risk solution.

Equipment has been selected where appropriate to ensure compatibility with equipment installed in other RN vessels. We have, as a deliberate procurement policy, sourced over 98% of the value of the vessel in the UK and thus maximised the contribution from British industry.

Platform Design

The approach adopted by VSEL has been to produce a fully integrated design combining the platform, combat system, assault and aviation arrangements in a whole-ship approach.

The proven Invincible hull form has been used underwater with a modified above-water form. A full set of model and trial results are available giving a high degree of confidence in the performance characteristics. Comprehensive weight and stability calculations have been completed.

A safety management system organisation has been established such that full responsibility can be accepted for all aspects of ship safety throughout its life.

The approach to the LPH ship structure provides an air capable ship designed to Classification Society Rules. The approach adopted incorporates the benefits of optimised aviation arrangements in a robust structure where machinery space and hangar are not obstructed by pillars.

A bow thruster, large active fin stabilisers and larger rudder provide excellent manoeuvrability including the ability to loiter for extended periods on one main engine.

The Machinery Control and Surveillance System (MCAS) is capable of monitoring up to 4000 parameters using equipment well proven in service with the Royal Navy and overseas navies.

Whilst a new ship design has been produced, maximum use has been made of existing design information in order to reduce costs, maintain quality and reliability and achieve an effective solution that fully meets the operational requirements.

In developing the ship platform design, full account has been taken of the Ministry of Defence requirements in terms of the operational functionality, safety, strength, watertight integrity, firefighting and the ability to operate with other naval vessels in a wartime environment without compromise.

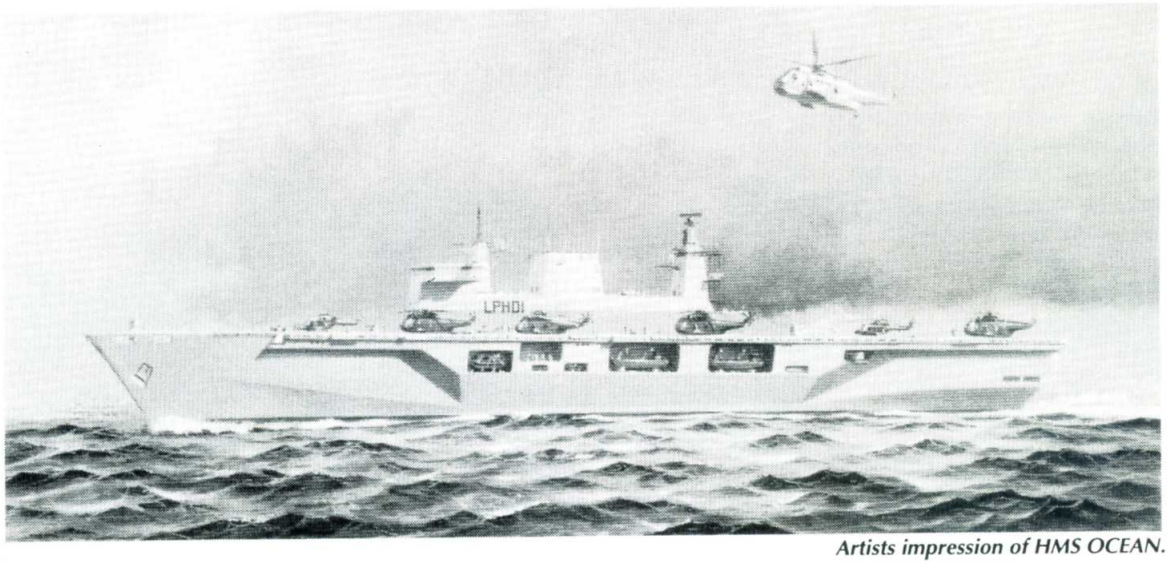
Assault Features

The main assault features of the vessel are shown.

The Embarked Military Forces (EMF) have easy access to the hangar.

The vehicle deck is arranged to give access to the flight deck. A ramp provides access to a quay alongside.

Landing craft are stowed in ship-side



Artists impression of HMS OCEAN.

cut-outs. Access to the landing craft is directly from an assembly area.

Accommodation is provided for the Commando Group with space available for an additional overload.

Aviation Features

The flight deck allows the operation of EH 101 or Sea Kings. The flight deck can also be utilised for the operation of Sea Harrier aircraft.

Aircraft lifts are provided forward and aft to serve the hangar and the flight deck.

The hangar, which is situated beneath the flight deck, can accommodate EH 101 aircraft and includes areas sized for major maintenance. In this condition, unrestricted use of the lifts remains available.

Combat System

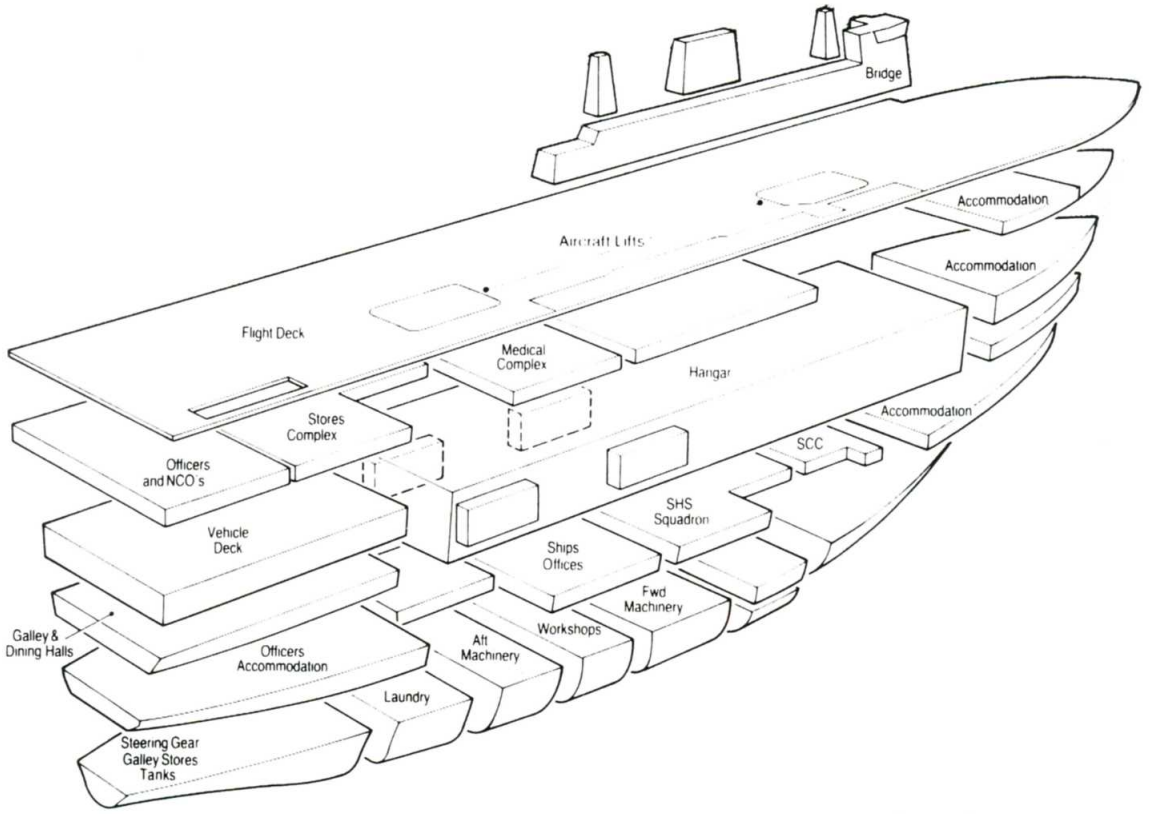
VSEL is independent of the major weapon equipment suppliers, which has ensured the provision of an LPH combat system tailored specifically to the Ministry's requirements. Risks associated with the development of new equipment have been minimised.

The baseline architecture makes use of a Combat Management System consisting of a Command System, an Operational Information System and space for a Command Support System. The Command System selected couples the proven features of existing surface ship systems with the latest enhancements and the use of full colour display technology.

Sensors and navigation equipment are integrated into the overall combat system, providing commonality with the very latest Invincible aircraft carriers and Type 42 systems.

The full range of external communications is also proposed covering the required frequency range for voice and data and automatic message handling. The aerial rig configuration ensures that all areas of the ship involved in operations, personnel and weapons are hazard free.

VSEL's in-house combat system expertise will minimise the problems of producing a fully integrated platform. The platform to combat system interface, so often a problem in the past, is therefore well understood.



Internal arrangement of HMS OCEAN.

Data

Length overall.....203m
Length between perpendiculars.....193m
Extreme Beam 32.6m
Beam on waterline 27.5m
Draught (deep) 6.5m
Depth to weatherdeck.....21.2m
Deep displacement .....20,000 tonnes

viewpoint

CONTINUED FROM PAGE 3

(Victoria) where 18 Small Ship Coy had been set up as a training camp. At this stage I was a Warrant Officer Class II R.Q.M.S. but later when the engineers were re-organised and new war establishments were made, my rank and position were deleted, and I was promoted to A/W.O.I Regimental Sergeant Major and when recruiting had b een completed and the new companies raised, H.Q. embarked on the vessel 'Taroona' and departed from Townsville on 19 October 1994, disembarking "off" Lae N.G. on 26 October 1944. The other units embarked at later dates and from various ports.

Some of the vessels (newly built in Tasmania and W.A.) were concentrated equipped and crewed in Melbourne and sailed 'in convoy' on 4 November 1944.

Any additional information you may be able to publish, more especially the nominal roll of H.Q. 3 AWT GP would be gratefully accepted, it would not be in order to publish a book on the group without H.Q.

Sincerely
H. James
Yarraville 3013

NAVAL MATTERS

A Visit to Blohm and Voss

By A.W. Grazebrook

FGS BRANDENBURG, the first of the Federal German Navy's type 123 frigates, is now nearing completion at Blohm & Voss' Hamburg yard. Three further ships are already under construction – a second by Blohm & Voss, and one each by Howaldtswerke and Thyssen Nordseewerke.

During a visit by the writer to the ship, he saw a very sturdy vessel, built solidly to improve damage survivability, and which incorporates some of the Meko containerisation approach to weapon, communications and sensor installation.

The 4490 ton full load BRANDENBURG is designed by Blohm & Voss (the designer of the RAN/RNZN A.N.Z.A.C. class Meko frigates now building at Williamstown).

The primary role of the Type 123 frigates is anti-submarine warfare. Thus the ships' anti-air warfare armament which is primarily for self defence.

The Type 123's primary AAW armament is a Mark 41 Martin Marietta vertical missile launching system with sixteen cells containing sixteen Sea Sparrow point defence anti aircraft missiles. It is expected that evolved Sea Sparrow, now in development by an international consortium of which Australia is a member, will be installed in the Type 123 frigates in due course.

Anti-missile protection will be provided by two Breda SCLAR decoy launchers and two RAM 21 cell Mark 49 launchers, one forward and one on top of the hangar. The Federal German Navy considers the use of RAM anti-missile missiles a better solution to the missile defence problem than Phalanx type multi-gun system now installed in some RAN ships.

For surface warfare, BRANDENBURG is armed with four canister launched Exocet MM38 surface to surface missiles. These are being removed from older ships being paid off. In the longer term, it is planned to arm the Type 123 frigates with the much faster ANS missile it is hoped to develop jointly with France.

Further surface warfare capability is provided by one 76mm OTO Melara gun.

The primary anti-submarine capability will be provided by two Sea Lynx Mk 88 helicopters. These have their own dipping sonar and Mark 46 air launched anti-submarine torpedoes.

The Type 123 frigates themselves have an Atlas Elektronik DSQS 23BZ hull mounted sonar and two twin Mark 32 anti submarine torpedo tubes for Mark 46 torpedoes. Provision is made for a towed array sonar system, but no firm decision has been made on installation.

Air search, air/surface search and fire control radars are all provided by Signaal, who also provide their MWCS fire control system.

The combat data system, SATYR action data automation – works with a Unisys UYK 43 computer and Link 11.

The CODOG configured propulsion system incorporates two General Electric LM2500 gas turbines (for high speed operations) and two MTU diesels for cruising. The range of the ship – 4000nm at 18 knots on diesels – is short by Australian standards.

BRANDENBURG marks another step forward in the evolution of German frigate design. The next step, the Type 124, will be anti-aircraft ships to replace the Lutjens class (modified Charles F. Adams class DDGs). The development of a collaborative design with the Royal Spanish and Royal Netherlands navies is now in hand. No doubt the RAN are watching the Type 124 as they develop plans for successors to our own Charles F. Adams class ships.

Whilst at Blohm & Voss, the writer saw (from a distance) the new Turkish Meko 200 frigate TCG BARBAROS, now nearing completion at Blohm & Voss. The ship is of interest because of her similarity to the RAN's ANZAC class. The improvements made by the Turkish Navy, based on experience with their first four smaller Meko 200s, are primarily to her propulsion system.

TCG BARBAROS is some 600 tons larger than the first four Mekos built for the Turkish Navy. Thus BARBAROS is much the same size as the ANZACs. The extra weight has been used to install a combined diesel or gas turbine propulsion system (as against the diesel only system in the earlier ships). This provides a top speed of 32 knots – faster than the RAN ships, whose CODAD system incorporates only one, as distinct from two, gas turbines.

A further improvement in the new Turkish ship is fitting the ship for but not with a Mark 41 vertical missile launching system to replace the Raytheon Mark 29 launcher for Aspide AAW missiles. Apart from that, the armament is much the same.

BARBAROS retains the small AB212 anti-submarine helicopter. As a result, her helicopter hangar is not the very prominent feature that it is in the ANZACs – which are to be capable of operating the much larger Seahawk helicopter.

Unlike the ANZACs, BARBAROS is fully armed. Thus she has eight canister launched Harpoon missiles and three Sea Zenith close in weapons systems (similar to Phalanx). The ANZACs will have only space and weight provided for the installation of these weapons at some later date.

With their leading role in the evolution of new frigate designs for the German Navy, and the further development of Meko designs, there is no doubt that Blohm & Voss will be keen and capable competitors for the design of any successors to the RAN's DDGs.

The strengthening of the German currency has had an adverse effect on Blohm & Voss' ability to be competitive in export markets. A further factor is improvements achieved – in many cases by government investments – in production methods and productivity in former East German shipyards since reunification. These have had to be offset by more efficient working methods at Blohm & Voss Hamburg.

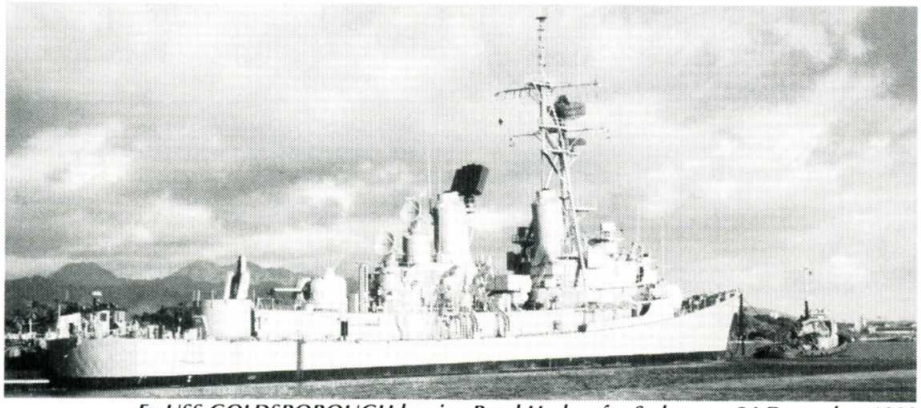
Also of interest at Blohm & Voss is the collection of large scale models of earlier warships built at the Hamburg yard.

These include a magnificent large scale model of the World War II battleship BISMARCK, which was built by Blohm & Voss. Another is that of SMS SCHARNHORST, also built at Blohm & Voss, and later sunk at the 1914 Battle of the Falklands after the epic search across the Pacific and the British defeat at Coronel.

"Spare Parts" Destroyer Arrives

The Royal Australian Navy accepted its latest acquisition, the former United States Navy Guided Missile Destroyer (DDG), ex USS GOLDSBOROUGH when the ship arrived in Sydney under tow on Wednesday, 2 February 1994.

USS GOLDSBOROUGH, in service with the USN.



Ex USS GOLDSBOROUGH leaving Pearl Harbor for Sydney on 24 December 1993

Formally handed over to the Navy at Pearl Harbor on 17 September 1993, the decommissioned destroyer is the fourth DDG to be acquired by the RAN. Purchased at a bargain price, GOLDSBOROUGH is one of 23 Charles F Adams class ships declared surplus by the United States Navy in the years 1990 to 1993. For the RAN the second hand DDG will be used for "spare parts", much of the equipment being passed on to HMA Ships BRISBANE, PERTH, CERBERUS and WATSON.

Work began almost immediately to remove major onboard equipment for transfer to the ships and land sites to provide a more cost effective training for the crews who man the current generation destroyers. Major equipment listed for removal included the missile launcher, decoy launchers and control panels, one of the five inch 54 cal gun mounts, the Harpoon missile control console, HF/UHF transmitters and receivers, the Mk32 torpedo tubes and Mk308 control panel, plus numerous other electronic and mechanical items.

Among the more homely objects being removed are 99 tables and chairs from the ship's cafe, a coffee making set, an electric toaster, a refrigeration plant and five audio amplifiers. The total number of items selected for removal from GOLDSBOROUGH was 275. One of the armament systems not fitted on the RAN DDGs, the Asroc system, was still mounted on the ship, albeit, an empty launcher located amidships between the two funnels. Still carried on the superstructure were the battle honours and Pacific Fleet crests with the hull number and stern name "hidden".

Ex USS GOLDSBOROUGH was one of only three USN DDGs modernised to same standard as the RAN's Perth class, (the others were USS TATTNALL and USS BENJAMIN STODDERT). Since the decommissioning of the class in American service, four other DDGs have been transferred for operational service with the Greek Navy. Other units may be acquired by Taiwan and Brazil.

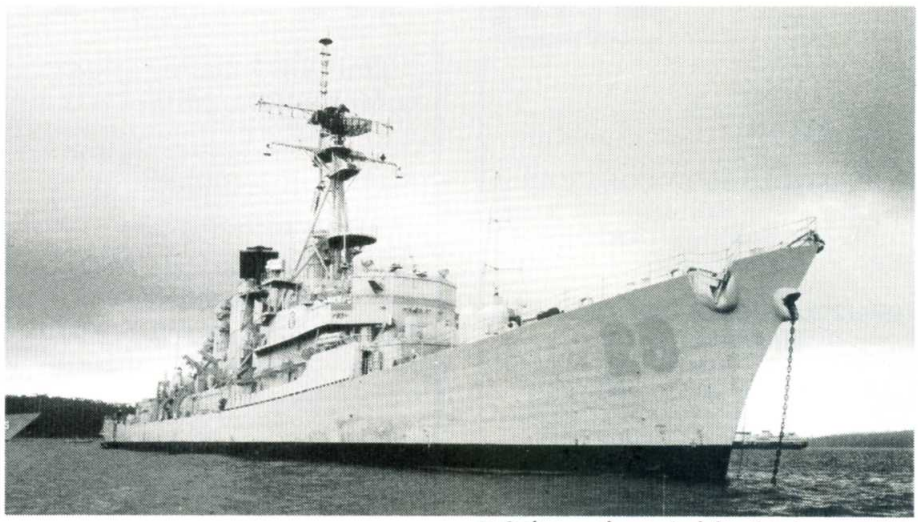
The destroyer GOLDSBOROUGH was built by Puget Sound Shipbuilding and Drydock Company and first commissioned on 9 November 1963. The last active member of her class GOLDSBOROUGH was paid off to the reserve in Pearl Harbor during 1993 and sold to Australia shortly later. The ship's upgrade in Hawaii between April 1983 and July 1984 included the addition of new radars, a Mk 13 Mod 4 Weapons Direction System and a SYS - 1 Data system and the upgrade of the search radar and communications suite. Total cost of the work was approximately US$220m.

Savings to the value of more than $4m will be made over the next seven years with all equipment relocated and set-up for training until the last of the three RAN DDGs is retired from service. The value of the electronic systems alone well exceeds the purchase price for the ship of $2.2m.

GOLDSBOROUGH visited Australia a number of times during her 30 year service life with the United States Navy with her last port call into Sydney occurring in 1982.

For the ships arrival in Sydney in February 1994, the bridge and other parts of the superstructure were plated over for the 41 day tow from Hawaii. GOLDSBOROUGH was moved from No 2 buoy around to Fleet Base East 1 berth so that work could begin to remove the selected equipment. The ship is expected to be disposed of by mid 1994.

Ross Gillett.



In Sydney on her arrival day, 2 February 1994.

Australia's Maritime Bridge Into Asia

By RADM Andrew Robertson AO DSC RAN (Rtd)

A conference on "Australia's Maritime Bridge into Asia" organised by the Maritime Studies Program of the Royal Australian Navy and sponsored by Computer Sciences of Australia Pty Ltd was held at the Novotel Hotel, Brighton Beach, Sydney from 17 to 19 November, 1993.

The aim of the conference was to demonstrate the significance of Australia's maritime links with Asia and to show how those links provide an important means by which Australia can forge better relations and identify opportunities for our maritime industries.

The conference took place against the background of the burgeoning of the economies of many Asian nations all of whom depend on the sea for foodstuffs, trade, and longer term economic prosperity. Many are investing heavily in offshore resource developments, particularly oil and gas. The growing importance of the sea to regional countries is reflected in their expanding merchant shipping fleets, the emphasis on maritime capabilities in the development of their military forces, and the attention now paid to claims on offshore territories. It is probable that maritime issues in East, South-East and South Asia will assume even greater importance in coming decades.

The conference was opened by the Minister for Defence, Senator Robert Ray, who addressed the two major themes of the importance which the Australian Government attaches to increasing engagement with the nations of the Asia-Pacific region, and the opportunities available in Asia for Australia, especially for our defence and marine industries.

In discussing the changed strategic background since the end of Cold War rivalry, the Minister mentioned the so called 'arms-race' in the region. This he felt was not an 'arms-race' but a modernisation of their armed forces by regional nations. It was a reflection of a changed defence posture from one focussed on internal problems, to a more conventional posture, focussed on potential external threats and protection of resources. It also reflected their new wealth, and the availability of suitably-priced weapons in the current arms marketplace. The modernisations underway would provide a basis for these nations to be more self-reliant in their defence. He felt this would assist regional security.

Given the changing security relationships in the region, the government was looking for new forms of engagement with the region and saw an important role for industry, including maritime industry.

There were many advantages Australia enjoyed over possible competitors from Europe and North America. These included oceanographic conditions in our northern waters which created much common ground for research; geographical proximity; advanced technology and the familiarity of our Defence Force with advanced platforms and systems; our excellent ship designers, engineers, builders, scientists and technologists; and our marine teaching institutions.

The Minister was followed by Professor Paul Dibb, Head of the Strategic and Defence Studies Centre at the Australian National University. Professor Dibb outlined key strategic issues for Asia and Australia, taking a rather more pessimistic view of future stability than many public commentators. He recognised the considerable scope for political and strategic stability that stems from the amazing economic growth of Asia, but also identified some worrying trends and developments.

In particular, he noted the longer term outlook for a shift in the balance of power in Asia, which may not be favourable to Australia or other middle powers in the region.

Professor Dibb saw as key strategic issues in the region in the decade ahead the increasing power of China, Japan and India, their relationships, and the role of the US in the stability of Asia; the extent to which the United Nations, ASEAN, and other regional groupings can promote peace and resolve regional problems; whether the proliferation of Nuclear, biological and chemical weapons and ballistic missiles can be contained; the impact of force modernisation on regional security; the flashpoint of the Korean Peninsula; the greater prominence of the challenges of refugees, drug trafficking and organised crime; and whether growing economic independence and changing trade patterns and relationships will produce stability or new tensions.

In the final plenary session Professor Mochtar Kusuma-Atmadja of Indonesia gave 'A View from Asia' in which he sought to put Australia's maritime bridges building effort into a proper perspective. The bridges will lead not into a 'terra nullius' but into one of the most densely populated regions in the world with very fast growing economies, but fortunately a high level of awareness for the protection and preservation of the environment.

Since President Soeharto took effective power in 1967 Indonesia has completely changed its image from the former legacy of suspicion and distrust on the part of its neighbours. He referred to its role in ASEAN and SE Asia generally; to its action in the Law of the Sea with the completion of 15 boundary delimitation agreements and treaties with its neighbours; its fisheries boundary agreements; its land border agreement in 1974 over PNG; the Traffic Separation scheme with Malaysia and Singapore in the Straits of Malacca and Singapore; the 1985 ASEAN Agreement on the Conservation of Nature and Natural Resources; the Jakarta Resolution on Sustainable Development; the Indonesian-Australian treaty on Joint Co-operation in the Timor Gap seabed area and its Production Sharing system.

Professor Mochtar was followed with addresses on 'The Scientific View' by Dr David Falvey of the Australian Geological Survey Organisation and 'The Commecial View' by Mr Tom Holyman of the Australian National Line.

In his closing address covering 'The Naval View', Vice Admiral IDG MacDougall, the Chief of Naval Staff, stated that clearly maritime issues throughout the region are growing in importance, and resolution of these issues is a vital means by which Australia can improve its relations with Asia. In this field navies have a critical role to play in building confidence.

Much has done to foster better relations with nations in the Indian Ocean, particularly India. South East Asia, with some of the busiest shipping routes in the world with many straits and choke points, many disputed territorial and boundary claims, and two of the world's major archipelagos, was a region of almost unparalleled maritime complexity.

In contrast to the Atlantic, the Western Pacific comprises large areas of territorial sea, EEZs or archipelagic waters of one coastal state or another. Thus regional countries have concern over their sovereign rights over littoral waters, rather with the freedom of the seas. There was thus greater priority being given in this area to maritime capabilities with increased resources being allotted. Environmental and resource security were also areas of concern and also fertile ground for co-operation.

In North East Asia, Admiral MacDougall found on a recent visit to Japan the perception that with the end of the cold war, regional territorial claims and arms proliferation concerns were contributing to higher potential for confrontation. The complex confrontation structure between countries in the region, coupled with the presence of huge, developing military powers (such as China) in an area with unsolved political and military problems, give rise to an unclear, uncertain and unpredictable future.

His feeling was that security and stability at sea would increasingly become a global issue and that countries with maritime capability will be required to keep sea lines of communication safe both near their respective territories and further afield.

Admiral MacDougall then outlined two co-operative forums in which he had been involved recently – The Western Pacific Naval Symposium held in Hawaii in November 1992 and the International Seapower Symposium held in the US in November 1993. These helped greatly to foster understanding and co-operation in maritime affairs between nations. Many difficulties remain to be faced including the problem that the required degree of inter-operability between navies is not currently enjoyed in the Western Pacific region, nor is it likely to be in the short term.

CNS outlined some of the ways the RAN is helping regional navies and maritime bridge-building including help through training, conferences and seminars and hydrography. However resources are limited, and the 1993-94 Defence Budget set at minus 0.75% real growth with a further minus 0.5% in each of the following three years has forced some reconsideration of defence priorities. The foreshadowed construction or conversion in Australia of a training and helicopter support ship has been cancelled, though the navy is still considering ways of obtaining such a vessel as it would be an invaluable aid in natural disaster relief and regional training. The navy will have to look closely at the level of its involvement throughout the region, while remaining committed to developing its links.

Navies are co-operating to help build bridges in the region and in Admiral MacDougall's view naval co-operation will continue to be at the forefront of regional co-operation.

As subsequent events were soon to indicate however, a deep understanding of the culture, attitudes and sensitivities of individual Asian nations is essential at all levels, including particularly at the highest political one, if the great effort at building firm bridges for the future is to succeed.

Navy's Oldest Patrol Boat Retires

The Royal Australian Navy's longest serving patrol boat, HMAS ARDENT entered port for the last time on Thursday, 6 January 1994 when she arrived in Sydney from Hobart. ARDENT decommissioned the following day at HMAS WATERHEN, Waverton, bringing to an end 25 years of service.

HMAS ARDENT arrives in Sydney for final time. *(Photo - Navy Photo Unit).*

Built by Evans Deakin Ltd at Brisbane in Queensland, ARDENT commissioned on 26 October 1968 as one of 20 Attack Class patrol boats. The class served the RAN in a wide variety of roles including coastal patrol, search and rescue, target towing, survey duties and fisheries and oil rig surveillance. Three class members, including ARDENT, also starred in the ABC TV series "Patrol Boat" as the mythical HMAS AMBUSH. By the end of December 1974 only 12 of the class remained in RAN service. Two patrol boats had been transferred to Indonesia during 1973-74 and five to Papua New Guinea in November 1974. One other, HMAS ARROW, was wrecked when Cyclone Tracy hit Darwin on 25 December 1974.

HMAS ARDENT spent the first 14 years of her career undertaking mostly fisheries patrol duties around Australia. One break from this routine occurred during 1976-77 when she operated from Melbourne and Sydney. This period included Bass Strait oil rig surveillance duties and Naval Reserve training cruises. September 1977 saw ARDENT undertaking fisheries patrols once again, this time from Darwin, where she remained until March 1982.

With the introduction of the Fremantle Class patrol boats in 1980, the remaining Attack Class patrol boats were progressively paid off or transferred to the Naval Reserve. Five class members, ADROIT, ADVANCE, ARDENT, AWARE and BAYONET, remained as Naval Reserve ships. Another six of the class transferred to Indonesia between 1982 and 1985.

HMAS ARDENT transferred to the Royal Australian Naval Reserve's Hobart Port Division in 1982 and served as a training vessel based at HMAS HUON in Hobart until she sailed for Sydney to pay off. As a Naval Reserve ship, ARDENT had a busy life, averaging 100 days a year at sea. Her duties were many and varied including training cruises and deep ocean fishery patrols off southern Tasmania.

During her 25 years of service with the Royal Australian Navy, HMAS ARDENT steamed 250,000 miles and covered all Australian waters from Darwin to Hobart.

Four members of ARDENT's final crew had also served on the first Attack Class patrol boat, HMAS ATTACK. They were Chief Petty Officer Guy Wall, and Petty Officers Tony Dare, Sammy Devine and Ian Gathercole.

And what was the reaction of ARDENT's final crew to her paying off? According to Lieutenant Commander Peter Arnold, ARDENT's last CO, a mixture of sadness and optimism.

Brian Alsop

Interview With Lcdr Peter Arnold – Last Co of HMAS ARDENT

Q. The end of an era I guess?
A. It certainly is. HMAS ARDENT retires tomorrow after 11.5 years Reserve service and a total of 25.5 years service in the RAN.

Q. And what has she been like during that time?
A. An excellent training platform. She's been able to bring together Reserve crews from many walks of civilian life into the Naval environment and teach them how to operate ships.

Q. How long have you been skipper?
A. I've been Commanding Officer for the past 4 years.

Q. Some good memories?
A. Certainly. Earlier this year we completed a fisheries patrol off the southern coast of Tasmania, out in the deep Southern Ocean in a 100 foot patrol boat, and proved to the RAN that we could do the job.

Q. I believe she has been just about all around the World in various roles.
A. Yes. She was commissioned in Queensland in October 1968, and since then she has steamed 250,000 miles and has covered all Australian waters from Darwin through to Hobart.

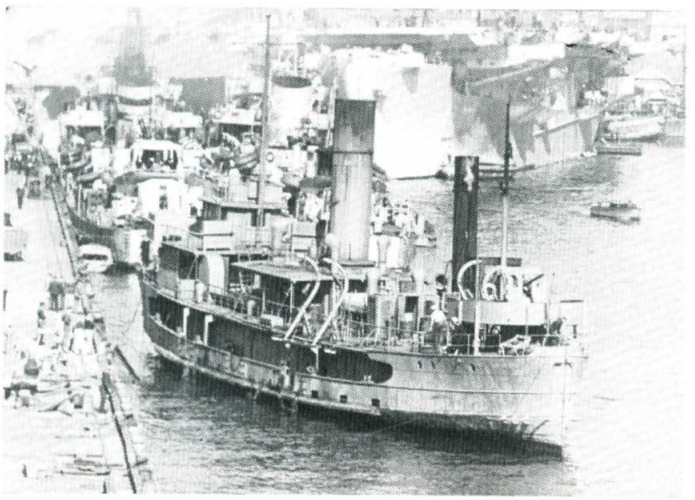
Q. So what's the feeling amongst the crew? Is it one of Sadness?
A. It's a mixture of sadness and optimism for the future. Sadness that we're losing our ship and this will be the last time that the Navy will operate a fully Reserve crewed vessel. It's a tear in the eye and a lump in the throat for most crew members aboard, and optimism because now under the policy of one Navy, we join the full-time members of the RAN operating ships around the country.

Q. So, a lot of optimism on that track?
A. Oh, very much so!

Q. And what's this boat basically going to be doing when it's retired?
A. It's an uncertain future at the moment. There are a range of options open to the Navy from operating it as a navigational training vessel around Sydney Harbour, to actually retiring her and selling her off.

Q. I understand the final trip wasn't as smooth as ...?
A. No. We had the reverse of the Sydney to Hobart Race. We had northerly winds the entire way and it was on the nose and pounding all the way.

Q. Well, OK. When the flag does officially drop tomorrow, what will be the feeling?
A. The feeling as I said will be sadness. You've said it before; the end of an era and now it's time to move on.



HMAS BURRA BRA.

Ferries of Sydney

by Graeme ANDREWS

Published by Oxford University Press

Price: **$29.95**

Naval author Graeme Andrews has recently produced an updated version of his book The Ferries of Sydney. The book highlights the role of the Sydney based ferries with the Royal Australian Navy and Australian Army during the Second World War. The following sections are reproduced from the chapter entitled "War and Other Disasters".

Ferries at War

By nature ferries are peaceful vessels, given only to the occasional tangle on the harbour. They were not intended for the cut and thrust of battle. Very rarely does a ferry find itself in a warlike role. The most famous Sydney ferry to become involved in a war was the big inner harbour steamer *Kuttabul*. Built at the Newcastle Government Dockyard in 1922, *Kuttabul* was one of two big sisters, built for the high-volume Milsons Point-Circular Quay service. Her sister ship, *Koompartoo,* was identical, but was to have a long, if not particularly successful, life. *Kuttabul* was not so lucky. After some time as a concert boat (after the harbour bridge made her redundant), *Kuttabul* became an accommodation ship for the Royal Australian Navy, being requisitioned on 7 November 1940. She was commissioned *HMAS Kuttabul* on 26 February 1941, whilst still owned by Sydney Ferries Ltd.

☆☆☆

On the night of 31 May 1942, World War II came to an almost unprepared Port Jackson. A Japanese torpedo loosed at the heavy cruiser *USS Chicago,* missed, and exploded under *Kuttabul* against the stone-clad shores of the naval base.

The blast ruptured the ferry's thin plates and she settled on the bottom, shattered superstructure and funnel well above the water. Nineteen naval men were killed. To commemorate the tragedy, the base at Garden Island now carries the name, 'HMAS Kuttabul'. The wheelhouse of the old ferry, after decades as a naval police control box, is now on the parade ground of HMAS Kuttabul, together with a photographic display of the raid.

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SS Kai Kai seems to have been the first ferry taken up for naval use; she was hired several times between 1940 and 1942 as an accommodation ship. She was bought by the Royal Australian Navy on 4 March 1943, and was sold on 2 June 1947 to the breakers.

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The redundant big vehicular ferry, *Kara Kara,* was the next ferry to be 'recruited'. She was also the last to be demobilised. She was taken over from Sydney Ferries Ltd. on 27 February 1941 and was bought outright on 7 November that year, having been commissioned on 14 October. As a boom defence ship, *HMAS Kara Kara* (Z221) sailed to Darwin in November 1941 where she served as a boom-gate vessel for the rest of the war. When Japanese aircraft attacked Darwin on 19 February 1942, *HMAS Kara Kara* was a sitting duck, attached to the boom gate and unable to manoeuvre, with just one 12 pounder and several Vickers machine guns as armament. She was attacked and two men were killed, but damage was moderate and she survived that attack and all the others.

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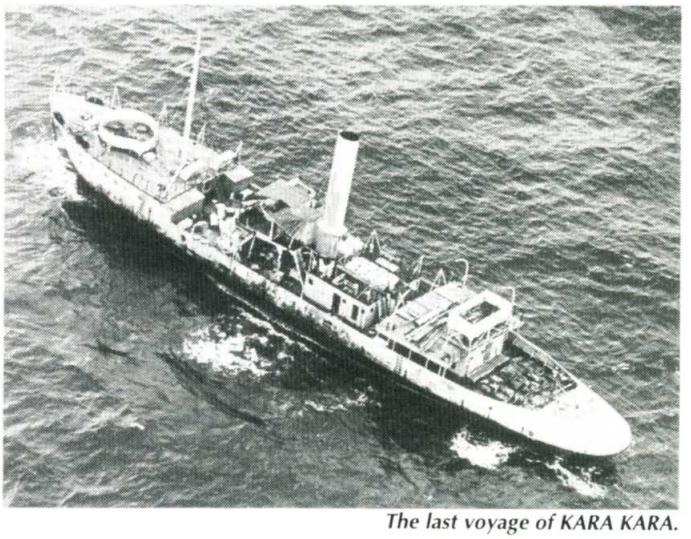
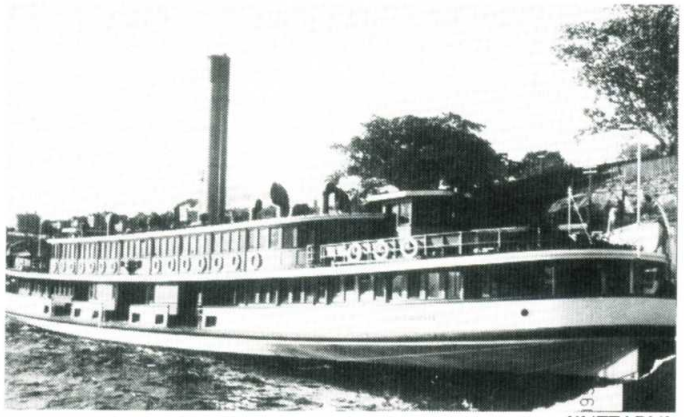
Showboat vehicular ferry, *Kalang* is probably the best-known of the wartime ferries. *Kalang* and sistership, *Koondooloo,* were built in the United Kingdom, as was *Kara Kara,* as vehicular ferries. After service as a showboat, following the opening of the bridge, *Kalang* was requisitioned in October 1942 by the Australian Army as *Kalang (AB97)* – a mobile Army workshop. She was equipped with an extensive workshop built on the one-time vehicular deck and with 30-ton capacity lifting gear. Her intended role was as a general repair ship and maintenance base for Army small craft (and those of the RAN/United States Navy) around the New Guinea area. Being coal-fired, she was unable to match the cruising range of the Hawkesbury River Peat Class diesel-engined vehicular ferries. Her estimated 1600 nautical mile range was, however, sufficient for passage making.

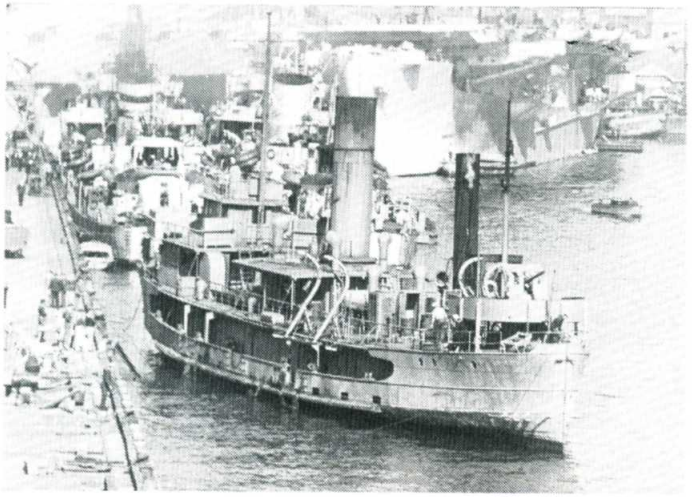
As an Army vessel, *AB Kalang* carried a crew of 82 men, mainly engineers. Her voyage north in 1943 was something of an endurance run as the almost-horizontal under-surface of the flat bow smashed into the wave faces. This



The last voyage of KARA KARA.



KUTTABUL.



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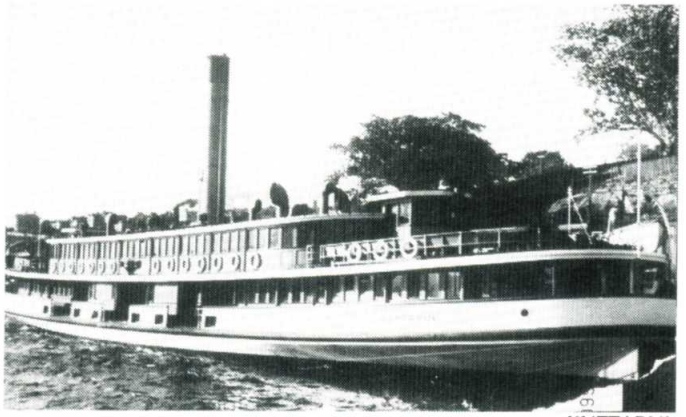

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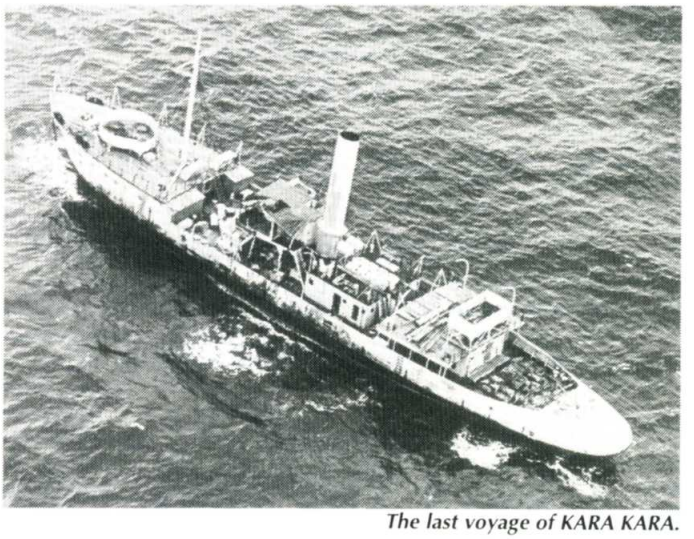

The last voyage of KARA KARA.

required special shock-resistant light bulbs, but little could be done for either crew or eggs.

☆☆☆

Koondooloo was taken over by the Australian Army as S.181 floating workshop on 17 September 1942. She was returned to Sydney Ferries Ltd. on 21 August 1946, but was not reconverted as a showboat. Instead, in 1950, she became a vehicular ferry once more – in Newcastle's Port Hunter on the Stockton Ferry route.

☆☆☆

Wooden Sydney ferry, *Kuramia,* was taken over for duty as a boom gate vessel for Port Jackson on 20 February 1942. She was commissioned 'HMAS (FY46) on 30 June 1942 and bought by the government in September 1943. After the war, she was used as an amenities vessel, paying off for disposal on 3 December 1945. She was sunk at sea as a target by aircraft from the aircraft carrier *HMAS Sydney* on 10 October 1953.

☆☆☆

Kuttabul's sistership, *Koompartoo,* was requisitioned by the British Ministry of Transport on 17 November 1941 for use in the Middle East. She was converted for her new role by Morts Dock, but war in the Pacific was to keep her in the Australian area. *Koompartoo* went to RAN control on 18 June 1942 and was commissiond on 23 December 1942. As a boom gate vessel (Z256), she served with *HMAS Kara Kara* in Darwin from late January 1943 until 1945 when she went into reserve in Darwin.

☆☆☆

Manly ferry, *Burra Bra,* had one of the more interesting roles as a war ferry. Built in 1908 as one of the 'B' class Manly ferries, she was the last open top deck Manly ferry. *Burra Bra* was taken over by the RAN on 13 March 1942 and altered for naval duties by Poole and Steele Ltd Balmain. She was commissioned on 1 February 1943 as an anti-submarine target ship and RAAF target vessel under the command of Lt R.E. Morley RANR(S). Her 13 knot top speed allowed her also to work as a patrol vessel in the Sydney area at times and she was defensively armed. She was bought outright for the RAN on 25 August 1943 and was later placed in reserve, although often used as a mobile steam power plant for ships in refit after that time. *Burra Bra* was sold by auction in November 1947.

☆☆☆

Other Sydney ferries to have minor wartime roles included the retired Manly ferry, *Binngarra.,* Already a hulk, she was taken over and used as such in New Guinea. After the war, she was scuttled off Sydney on 11 December 1946. The inner harbour wooden ferries, *Karabella* (1897), *Karaga* (1894) and *Kiamala* (1897), laid up spasmodically since 1932, went to the United States Navy and seem to have become untraceable. Other old ferries to be of naval use were *Lady Hampden* used as a target in 1943, and ex Manly ferry, *Kuring Gai,* used as a barge in New Guinea. She was later abandoned on the river bank at Hexham, upriver from Newcastle, and (in 1990) was visible at low tide.

☆☆☆

A Peaceful Ocean? Maritime Security in the Pacific in the Post-Cold War Era

Edited by Andrew Mack

Published by Allen & Unwin, PO Box 8500, St Leonards NSW

Reviewed by **Vic JEFFERY**

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by Mike CRITCHLEY

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