Registered by Australia Post Publication No NBP 1482

JULY-SEPTEMBER, 1989

THE NAVY

The magazine of
THE NAVY LEAGUE OF AUSTRALIA

$2.50

- LAST SUNSET FOR A GRAND OLD LADY
- VIEWPOINT
- MELBOURNE LAUNCHED
- NAVAL MATTERS
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- A BIGGER MERCHANT FLEET
- BOOK REVIEWS

THE NAVY

EDITOR: ROSS GILLETT
PO BOX 653, DEE WHY, NSW 2099

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Vol 51 **JULY-SEPTEMBER, 1989** **No 3**

ADVERTISING AND PUBLICATION
Percival Publishing Co. Pty Ltd.
(Incorporated in NSW)

SYDNEY
8F2 Elizabeth Street, Waterloo NSW 2017 Phone (02) 699 6231

MELBOURNE
370 Little Bourke Street, Melbourne, 3000
Phone: (03) 670 4321

ADELAIDE
4th Floor, 97 Currie Street, Adelaide 5000. Phone (08) 231 6225

PERTH
2nd Floor, Kings Old Office Tower, 517 Hay Street, Perth 6000
Phone (09) 221 1623

BRISBANE
3rd Floor, 480 Ann Street, Brisbane 4000 Phone (07) 832 2531

OUR COVER PHOTOGRAPH

The new guided missile frigate MELBOURNE is launched on 5 May 1989. ***(Photo – courtesty Naval Photographic Unit).***

CONTENTS

READERS

Dear Sir

I am sure that we are all indebted to Mr G K Andrews for his excellent article RAN Tugs. (The Navy April/June 1989). There is however one statement which I believe requires correction. HMAS St. Giles did not take part in the search for HMAS Sydney. The tug concerned was HMAS Heros.

The Sydney – Kormoran action was fought on November 19th 1941. St Giles did not leave Sydney for Fremantle until New Years Day 1942. The ship returned to Sydney in the early part of May and paid off at Morts Dock.

I am not sure whether St Giles & Heros were sister ships but there were certainly some marked similarities in their appearance. It is my understanding that Heros recovered one Carley raft and a number of lifejackets.

Yours Sincerely
L K Wood
West Pymble

The old harbour tug TB 9, SARDIUS.

Dear Sir

The letter from Mr. L. Nichol, M/T Conus, in the April Issue, concerns me enough to answer and state my feelings.

Let us never forget what the SUA's policies have done to Australia's economic well being, our relationship to our allies, in both war and peace, their strikes during World War II and recently, their refusal to transport supplies to our men in Korea and Vietnam.

I believe that they in the future would only assist if Australia took a more progressive stance in favour of the Soviet Bloc.

Remember the Boonaroo, Jeparit, Ark Royal and most allied naval vessels entering our ports.

They have humiliated us as a nation and have insulted the proud traditions the Navy League cherishes.

Have we ever read where these "seamen" have rendered assistance in time of peril, to other seafarers? Besides standing by.

The appearance of Australian Flag Ships are usually the most ill kept vessels in our ports.

It gives little credit to Government and Business leaders to have allowed these circumstances to happen in an industry so important to our Nation's well being.

Yours Sincerely
John A. Gates
Wavell Heights

Dear Sir

I have been a reader of "THE NAVY" magazine for a number of years. And it seems to me that a question in one way or another is asked each issue. What type and number of ships are required and air cover for them.

From what I can see Australia will be a Destroyer and FFG and Patrol Boat navy.

The question is: with the new Australian Destroyer to be built could it have the design to carry "2" two Harrier aircraft and give our fleet the air cover it should have.

eg. a task force of:
One D.D.G. air defence
Two F.F.G. with 2 helicopters A.S.W. defence
Two Aust built ships, 2 Harriers air cover.
One Tanker – Task Force range.

Is this concept possible to have Harriers to land and take off from a ship of 3000 DWT Destroyer Class or could it be an Australian design first.

Could you reply in "Viewpoint".

P.S. I would like to take this opportunity to pay tribute to you on a fine magazine.

Yours Faithfully
D. A. Hamilton, N.S.W

Dear Sir

I refer to the article "Royal Australian Navy Tugs" by G. K. Andrews in the April-June 1989 edition of the "The Navy". On page 7 reference is made to "the burning SS NEPTUNIA". The vessel referred to was the MV (not SS) NEPTUNA (not NEPTUNIA). She was a twin-screw passenger and cargo motorship of 5926 tons gross built by Krupps of Kiel in 1924 and owned at the time of her loss by Burns Philp & Co. Ltd.

On the same page reference is made to the 45ft class of Army tugs – a total of 64 vessels. However 65 numbers are given – 1503-1557 (55 vessels) 1817 (1) 2010-2015 (6) 2239-2241 (3) a total of 65. This error is repeated on the next page.

Yours faithfully,
D. W. Finch
Katoomba

BOLD PLAN TO MAKE AUSTRALIAN FLAG SHIPPING COMPETITIVE

by Geoffrey Evans

During the last eight or nine years the Australian shipping industry has been the subject of nine government-sponsored and at least two non-government inquiries into its performance and costs. The R.A.N. has also carried out several detailed studies to determine the importance of the industry to national security.

While all the inquiries have been of value in one way or another, so far as the seagoing element of the industry is concerned the most visible results have flowed from Sir John Crawford's 1982 report "Revitalisation of Australian Shipping" and the Maritime Industry Development Committee's 1986 "Moving Ahead". The findings of a third major inquiry, the Industrial Assistance Commission's 1988 report on Coastal shipping, have not yet been accepted by the government and seem unlikely to be, at least not in their entirety.

Another important inquiry, that of the Inter-State Commission into shore-based activities – stevedoring, cargo handling etc. – has not long been completed and the Commission's quite drastic recommendations to improve waterfront efficiency have not at the time of writing this article been accepted by the government. The seagoing and shoreside elements of the industry are separate but intimately linked and improved efficiency in one will be of small value unless matched by improvements in the other.

With a plethora of generally critical reports and dozens of recommendations to hand, in November 1988 the government appointed a "Shipping Reform Task Force" composed of government, shipowner, union and shipper representatives*. The task force was required to identify **and negotiate** the changes necessary to establish an **internationally** competitive Australian shipping industry. This was a wider reference than that given to the IAC which was required to report and make recommendations on coastal shipping.

Given the importance of the task, the time provided to the Task Force to carry out its work was quite short – barely three months and that over the Christmas-New Year period. The short time is to some extent reflected in the report given to the Minister for Transport and Communications in April; identifying problems is one thing, negotiating solutions another (the parties mainly concerned, shipowners and unions, have however agreed to complete their negotiations within a very tight time frame).

The Task Force devoted its attention to the seagoing element and if its objectives are accepted by the government and realised, and are matched by increased efficiency ashore, Australia may yet have an internationally competitive shipping industry. Irrespective of reform ashore, more competitive Australian-flag ships should benefit Australian industry, as something like 90% of tonnage moved around the coast is carried in ships owned by the shippers a number of whom are much less dependent on outside sources to load and unload cargoes.

The Task Force examined the cost structures of Australian-flag shipping and found that measured against the costs of a range of OECD countries and a typical Flag-of-Convenience ship governed by International Transport Federation conditions, the capital costs incurred by Australian shipowners were similar to those of a number of other countries; this could change however to Australia's disadvantage if the current fiscal regime (a 7% taxable grant and accelerated depreciation for new ships) is not extended beyond the present expiry dated in mid-1992. The Task Force noted that the shipping industry worldwide operates under beneficial fiscal arrangements.

Labour costs were identified by the Task Force as the major cause of the present uncompetitiveness of Australian shipping, accounting for some 75% of the "competitive gap". Substantial reforms are therefore proposed for this area including:

- a further reduction in crew sizes (some reductions have already been made as a result of the Crawford and MIDC inquiries).
- an extensive training/retraining programme to allow integration of the duties of deck and engineroom watchkeeping officers, to upgrade the skills of sailors, and to eliminate the category of electrical officer by qualifying marine engineers for electrical duties.
- a voluntary early retirement scheme and *redundancy arrangements for displaced* sailors and officers respectively (sailors are employed under an industry "pooling" arrangement and officers are employed by individual companies)
- a review of conditions of employment and restructure of the Maritime Industry Seagoing Award to allow more flexibility in ship management (to be completed by

CONARA *(Photo – Ron Hart).*

AUSTRALIAN VENTURE *(Photo – J.Y. Freeman).*

October 1989: By 1993 it is envisaged modern Australian ships will be manned by crews of 17 or 18, half the size of crews manning comparable ships a few years ago).

To increase competition in the coastal trade, the Task Force has advocated better use of the "permit" system which enables foreign owned ships to carry cargoes around *the Australian coast in particular* circumstances. The Task Force flatly rejected proposals to withdraw the cabotage policy, pointing out that virtually every country with a significant coastal trade gave preference to its own ships and seafarers engaged in the local coastal trade. The Navy League expressed similar views on both these matters in its submission in December 1987 to the IAC inquiry.

Clearly, a number of the changes, not least crew training and modifications to some older ships to enable them to be manned by smaller crews, will take time to implement; even so the Task Force believes that initiatives already taken together with *the longer term reforms would enable* Australian-flag shipping to become internationally competitive progressively from 1992 onwards. To oversee the reform process the Task Force has recommended the appointment of a Shipping Reform Authority with the necessary powers for a fixed three-year term.

Surprisingly, national security considerations do not appear to have been a major subject of discussion in the various inquiries over the past few years. The Department of Defence has made it quite clear that a viable Australia-controlled shipping industry is extremely important to the nation's security and so has the Navy *League.*

The Navy League is pleased to note that the opinions expressed by the Reform Task Force are basically the same as those held and expressed by the League. The Navy League does not believe anything is to be gained by withdrawing support from the Australian shipping industry and exposing the industry to unfettered foreign competition; chaos on the waterfront would be the most likely result.

Responses by government spokesmen so far indicate the complexity of what has undoubtedly been appreciated and that internally sponsored changes are favoured, albeit at a greatly accelerated rate. As previously remarked however, increased efficiency at sea will have to be matched by greater efficiency ashore if Australia is to have a competitive shipping industry.

The shipping reform plan is ambitious but would seem realizable if all the parties involved – above all shipowners and unions – have the determinations to see it through. The stakes for Australia and its future as a maritime nation are very high indeed.

* *Shipping Reform Task Force*

Membership of SRTF

Chairman: Mr I Deveson
Managing Director
Nissan Motor Manufacturing Company

Members: Mr W Bolitho
Chairman
Australian National Maritime Association

Mr S Crean
President
Australian Council of Trade Unions

Mr R Dailey
Federal President
Australian Institute of Marine & Power Engineers

Mr G Evans
Secretary
Department of Transport and Communications

Mr P Geraghty
Federal Secretary
Seamen's Union of Australia

Mr R Hutchinson
Chairman
National Bulk Commodities Group

Mr P Laver
Australian National Maritime Association

Captain F Ross
Federal President
Merchant Service Guild of Australia

Mr J Speirs
Australian National Maritime Association

Mr R Taylor
Secretary
Department of Industrial Relations

Secretary: Mr P Newman
Ministerial Consultant

Executive Officer: Dr H Millroy
Department of Transport and Communications

GEOFFREY EVANS
Federal President

MELBOURNE LAUNCHED

Any lingering doubts in the minds of the superstitious must surely have been dispelled when the new frigate MELBOURNE, bathed in a momentary flash of sunlight, kissed the waters of Port Phillip Bay for the first time on 5 May 1989.

The launch could hardly have gone better - the wind, a source of concern for the organisers in the hours leading up to the event - fell away to a zephyr at exactly the right moment, the words of the launching lady, Mrs Hazel Hawke, rang out loud and clear and the bottle of Great Western broke cleanly to the cheers of the crowd.

Then an expectant hush fell on the dockyard as several thousand pairs of eyes watched the ship for the first sign of movement.

The final chock did not come away cleanly, but the organisers had been ready. Amid shouts of "Go on, Kevin" a burly worker stepped up with a sledgehammer for his moment of glory. Two swift blows to the offending piece of timber and lights started flashing, a klaxon sounded and MELBOURNE, needing no further help, slid gracefully

Photographs courtesy of
THE NAVAL PHOTOGRAPHIC UNIT.

into her natural element. AMECON has little chance of getting that hammer back.

The crowd watched as the tugs milled around the frigate, shepherding her into the dock where the "real" work is about to start. *Then it was time for the celebration.*

The speeches were short and enthusiastic. The Chief of Naval staff, VADM Michael Hudson, said to the general agreement of all present that this was a special day for the nation and that Australia was back in the business of building naval ships.

AMECON's chairman, Mr George Polites, thanked Mrs Hawke for accepting the invitation to officiate and presented her with a

MELBOURNE LAUNCHED
- CONTINUED

jewelled AMECON logo and the official ribbon-cutting scissors as a momento of the occasion.

Responding, Mrs Hawke said that she had been surprised and honoured to be asked. She praised the commitment and professionalism of those who go down to the sea in ships and delighted the crowd by saying, without recourse to any notes, that she *felt quite grandmotherly about the whole thing and would keep a* personal interest in MELBOURNE's career.

The new ship MELBOURNE (she will not be known as HMAS until accepted and commissioned by the Navy) is the first ship built for the RAN by AMECON since the company bought the then Williamstown Naval Dockyard from the Government in February 1988.

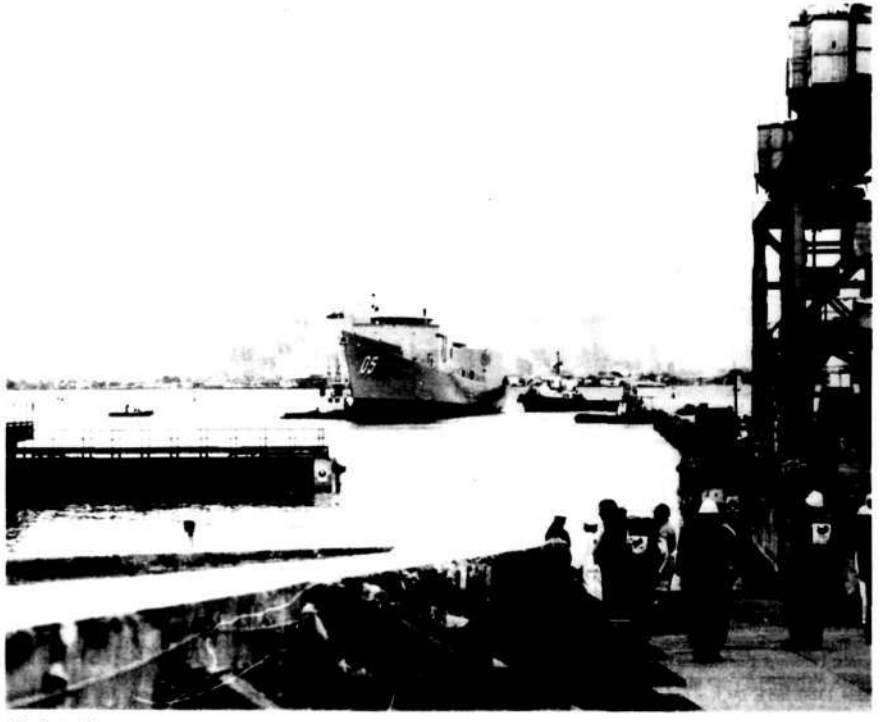
She is the first combatant ship built in Australia since HMAS TORRENS was launched at Cockatoo Dockyard in 1970.

MELBOURNE will be the fifth of her class in the RAN. AMECON has already started work on the sixth, to be called NEWCASTLE. The four earlier FFG7 class ships, ADELAIDE, CANBERRA, SYDNEY and DARWIN, were all built for the RAN in the United States.

The weight of the frigate at launch was close to 1900 tonnes - around half her completed displacement.

Her hull and superstructure is now complete and all major machinery is in place. After launch she entered drydock for completion. She will be fitted with propeller shaft, propeller, rudder stock and rudder as well as her complex sensors, weapons systems, computing equipment and all interior furnishings.

She is scheduled to be delivered to the RAN in August 1991, commissioned in September 1991 and to join the Fleet in March 1992.



LAST SUNSET FOR A GRAND OLD LADY

A forlorn sight, the proud old lady of the RAN, SDB 1325, laid up in the HMAS STIRLING small craft compound. The vessel alongside is the NRC training boat LANCELIN *(Photo – RAN)*

by VIC JEFFERY, Navy Public Relations Officer (WA)

The RAN's last World War Two patrol boat is sadly, up for disposal.

Despite her age, 46 in November, Seaward Defence Boat 1325 is described as being in reasonable condition and excellent for its age. She long ago shed her grey wartime garb and associated armaments and today is a truly resplendent sight with her navy blue wooden hull and white upperworks.

SDB 1325 is the last of the 28 vessels of this type which saw wartime service in the Royal Australian Navy. Originally classified as Harbour Defence Motor Launches (HDML's) they were designed for the British Admiralty in 1942 for patrol work in harbour approaches, estuaries and coastal waters.

The first three to enter RAN service, HDML's 1074, 1129 and 1161 were constructed in the United Kingdom and saw service in the Royal Navy prior to their transfer in 1943. They were followed by another nine built in Australian yards and 16 in the USA.

The locally constructed vessels, 1321 to 1329 were built in three yards; Purdon & Featherstone Pty. Ltd., of Hobart (1321, 1322, 1327); McFarlane & Sons of Birkenhead in South Australia (1323, 1324, 1328); and E. JACK of Launceston (1325, 1326, 1329).

Seaward Defence Boat 1325 first entered Service as Harbour Defence Motor Launch 1325 at Launceston on 3 November, 1943. She displaced 60 tonnes full load and bristled with guns.

On her 24.5 metre length hull she mounted a two pounder anti-aircraft gun on the forecastle, two Vickers machine guns on the bridge wings, a 20mm Oerlikon aft along with eight depth charges.

Powered by two Buda six cylinder DHMR diesel engines the 60 tonne launch had a range of nearly 2000 nautical miles at a speed of 10 knots. Cost of construction was $64,000.

HDML 1325 saw wartime sevice on patrol duties and tender in Australia's northern waters. Postwar she was reclassified as a Seaward Defence Boat along with all other Harbour Defence Motor Launches.

Re-armed with a 40mm Bofors gun replacing the two pounder and with the depth charges racks removed, SDB 1325 was commissioned as a tender to the shore establishment HMAS MELVILLE in Darwin in 1953. She carried out fisheries patrols in the Darwin area until replaced by a minesweeper in 1956.

In September of that year she was transferred to the shore establishment HMAS LEEUWIN in East Fremantle. SDB 1325 made

LAST SUNSET FOR A GRAND OLD LADY - Continued

SDB 1325s bridge. *(Photo – RAN)*

Inside the bridge. *(Photo – RAN)*

part of the long trek under her own power before being towed by the minesweeper HMAS JUNEE on the second leg of the trip in bad weather conditons.

Although not commissioned, she was named LEEUWIN and employed as a Naval Reserve training vessel based at the HMAS LEEUWIN boatshed situated on the Swan River in East Fremantle.

SDB 1325's routine humdrum existence was shattered 7 April 1959 when an 18 year old youth boarded her, slipped the mooring lines and somehow managed to start the launch and steer it, heading out to sea.

He was apprehended off Rottnest Island and SDB 1325 was towed back into Fremantle Harbour by the minesweeper HMAS FREMANTLE. When apprehended the offender claimed he was on the way to the Eastern States where he intended to sell the vessel!

The 1960's saw SDB 1325 disarmed and her original armoured wheelhouse removed and replaced by a wooden version. Below decks, even today, she remains much the same as built 46 years ago. Brass scuttles, heavy stained timber furnishings and fittings with the original brass light switches.

Up until recently she still fulfilled a role with the Fremantle Port Division of the Naval Reserve as a seamanship training vessel. When not employed in this role she conveyed VIP's to major events on the Swan River as starting and viewing boat for prominent yacht races and regattas or carrying out river cruises with school children aboard.

More than 400 of these vessels were built during World War Two in Britain, Canada, New Zealand, USA and Australia. Today Seaward Defence Boat 1325 is the last example in naval service in the world. Many still ply the riverways and fishing grounds of the world as commercial vessels, but since New Zealand paid off her four launches of this type in 1984, SDB 1325 has the distinction of being the last of the forerunners of today's patrol boats.

The Australian National Maritime Museum and the West Australian Maritime Museum have both declined to accept the vessel as an exhibit and her future is yet to be decided.

Two possibilities are that it could be preserved in the grounds of the HMAS STIRLING fleet support facility or alternatively taken over by the nearby City of Rockingham and restored as a tourist attraction.

However, that is still to be decided and this grand old lady lies in the tranquil waters of the HMAS STIRLING small boats compound awaiting a decision on her future.

HDML 1325 as built. *(Photo – RAN)*

NAVAL MATTERS

Last flight over the national capital.

The Lesson Goes Unlearned

In 1983, the Department of Defence recommended to the Hawke Government that the fixed wing Fleet Air Arm be disbanded and its aircraft removed.

by A. W. GRAZEBROOK

At the time this was done, the best professional authorities, both inside and outside Navy, pointed out that there remained a need for the A4 Skyhawks for ground attack work in support of Army and for training Navy's surface ships in anti-aircraft warfare. Navy attached primary importance to this latter need which assumed much greater significance with the scrapping of the aircraft carrier MELBOURNE.

Deprived of fighter protection, Navy became wholly dependant upon her area defence surface to air missile, point defence and close in weapons systems for defence against aircraft and missile attack. To maximise skills in these vitally important roles, Navy needed high performance aircraft piloted by officers skilled in low level attack against warships.

It was argued that both ground attack and fleet training would be provided by Air Force's Mirages, Macchis and (later) the *FA18's*.

The S2 anti-submarine Trackers were considered, but rejected, for the coastal surveillance role.

Navy's advice was ignored. Even worse, there is some evidence that the Minister of the day was deliberately deprived of access to the highest professional opinion available – that of the Royal Australian Navy.

On one aspect of the decision to disband the fixed wing Fleet Air Arm, documentary evidence has been published (by Ian Hamilton, Pacific Defence Reporter, August, 1983, page 51) that the then Chief of Naval Staff was concerned at "the level of consultation that took place (in regard to the use of S2 Trackers) and at the incomplete picture that formed the content of the submission as forwarded" (to the Minister). In this case, the Chief of Naval Staff personally was excluded from consultation on effectiveness. Navy advice was limited to "costing, manpower and performance data".

Subsequently, the S2 Trackers were offered for sale on the international market. Several potential buyers were rejected on political/diplomatic grounds. Now, at a time when other nations are upgrading their S2s for a new lease of life, Australia's S2s remain rusting and disused at Nowra. Coastal surveillance, performed by civilian companies, has become the subject of protracted legal wrangles and contractual disputes.

Navy's A4 Skyhawks were sold to the

NAVAL MATTERS

Royal New Zealand Air Force. Although the Mirages performed some fleet air training, Navy's standard of anti-aircraft training declined. With the paying off of the Mirages Squadrons, it has been decided that the FA18s will not provide Navy with AAW training and Army with ground attack capability.

RNZAF Skyhawks, including those purchased from the RAN, are to provide Navy with AAW training in return for fees running into millions of dollars per annum. These aircraft have already provided the ADF with ground attack capability (in the Exercise Kangaroo series etc).

This arrangement clearly has alliance benefits. Nevertheless, it is difficult to avoid the conclusion that a massive blunder occured. Australia sold a valuable asset to another country on the basis that there was no need for that asset. Subsequently, it was realised that we did indeed need that asset. The A4s are now being rented back at fees which will quickly exceed the sale price to New Zealand.

The blunder occurred because the Minister of the day was deprived of sufficiently broad advice. That Minister (Mr. Scholes) refused an inquiry, on the grounds that "Navy is represented on all committees of the Defence Department" and thus would have an opportunity to proffer advice. That opportunity did not arise in the case of the S2s. If the opportunity arose in the case of the A4s, it was ignored and a very expensive wrong management decision was made.

A massive blunder occurred, but nothing will be done about it. Those responsible will go unpenalised. The taxpayer will pay a heavy bill.

A sad state.

Perhaps the most perturbing part of it is that this is not the only time such expensive mismanagement has occurred. Indeed, the case of Williamstown Dockyard was even worse.

It is generally known that Williamstown dockyard degenerated from badly run to worse to nigh on useless. Well qualified Committees sat and recommended remedial measures. Well qualified Managers were hired from outside the public service. However, after more than a decade, the situation still did not improve significantly.

It is clear that Williamstown failed because parts of the Defence Department (and at times other Departments) "protected their patches" by retaining functional authority in Canberra. To further their own administrative positions, they refused to delegate sufficient authority to Williamstown's management to run the yard properly. There were other problems, but this lay at the root of the failure.

The fact that Williamstown has now been sold, and is well on the way to becoming a productive organisation and a very valuable defence asset to Australia, does not obviate the fact that massive mismanagement occured. Those responsible will go unpenalised. Gross mismanagement and

Skyhawk, preparing for action.

NAVAL MATTERS

incompetence will have got away with it again.

There is another example. This affects the Australian Defence Force as a whole - not just Navy.

In November, 1987, the Joint Parliamentary Committee on Foreign Affairs, Defence and Trade published a 394 page Report on The Management of Australia's Defence.

That Report recommended that "in view of the continuing failure of ... FDA Division to develop adequate defence guidance and the lack of confidence that this has engendered in the force development process generally..." certain major organisational changes be made.

In spite of this very severe major condemnation, no relevant change has been made. All that has been done is to change the title of one or two public servants and to transfer the Natural Disasters Organisation from one group to another. We have resisted the temptation to wisecrack. In spite of its unhappy name, the NDO is widely respected as efficient and valuable.

The role of the Force Development and Analysis Division (as specified in the Functional Directory for May 1985 and today) remains unchanged – word for word.

It must be concluded that nothing will be done when things go wrong at top management level in Defence.

Industry and commerce prosper when Management take responsibility for what they do. For success, they are rewarded. For mismanagement, they are fired or otherwise penalised.

Unless and until these principles are applied in Defence, and responsibility sheeted home to individuals involved, it will be very difficult for management to improve on the public service side of the Defence community.

On board the carrier HMAS MELBOURNE.

DEFENCE MEANS BUSINESS IN WESTERN AUSTRALIA

Defence Growth

THE first naval dockings at the new marine support facility at Jervoise Bay represent significant progress in Western Australia's long-term goal to create a supportive defence industry for the three armed forces.

Since announcement of Australia's two-ocean defence policy, Western Australia has been preparing for the transition to a major strategic region.

Half the navy's operational fleet will be homeported on the west coast over the next 10 years.

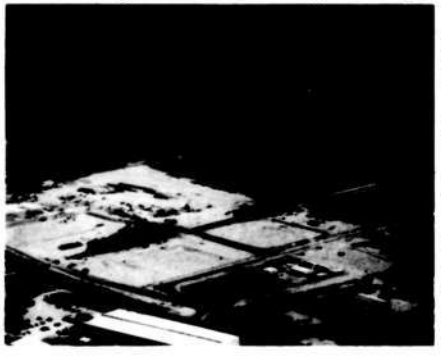
To date, three destroyer escorts, one submarine and three patrol boats are based on the west coast. But the fleet will be substantially strengthened with the addition of six destroyers, three submarines and eight mine warfare ships.

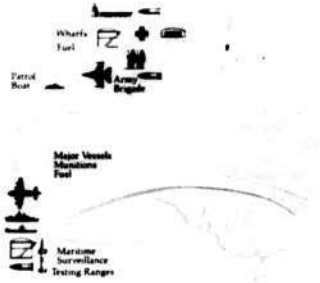
The Pearce RAAF base north of Perth and stations in the far north – Learmonth and the recently commissioned Derby provide coastal surveillance, cover the navy's expanded role in the Indian Ocean, and frontline fighter aircraft.

A new role for the army includes deploying highly mobile counter-insurgency units in the rugged north-west. This means introduction of new all-terrain vehicles and advanced communications technology.

Sky and ground watches are being established via the Jindalee "over the horizon" radar at Merredin and the satellite communication monitoring station at Geraldton.

First Dockings at the ASI Marine Support Facility





Changing Emphasis under the Two-Ocean Defence Policy

Naval Work

The Western Australian Government is vigorously encouraging development of a defence industry to meet the support and maintenance demands of such a large expansion of military forces in the west.

An important accomplishment in pursuit of this goal is the recent completion of stage one of Australian Shipbuilding Industries' (ASI) marine support facility and its successful bids for naval and commercial maintenance contracts.

The facility, opened in February, has already completed maintenance worth $1.5 million on the Oberon-class submarine, the HMAS Oxley, and is carrying out a $16 million refit on a destroyer-escort, the HMAS Swan.

It has also completed repairs on a sheep carrier and has a $42 million contract to build three commercial ships.

Western Australia's defence industry is also bidding for the depot level maintenance of three of the navy's six Oberon-class submarines, valued at $170 million over six years.

The three Oberons are scheduled for major refits. A refit involves refurbishing and upgrading systems, each costing $50 million and lasting two years.

In addition, the submarines undergo mid-cycle and intermediate maintenance, totallling an extra $20 million.

Altogether, the maintenance programmes could add up to about 18 dockings.

The six new Type 471 submarines now being built in South Australia, the first of which will be launched in 1993, will progressively replace the Oberons and provide ongoing maintenance opportunities for the marine support facility.

Marine Support Facility

When opened on its 18ha site directly opposite the naval base at Cockburn Sound, the facility's shiplift was 105m long with a lifting capacity of 6,000 tonnes.

This is now being extended to 123m to accommodate the next generation of homeported vessels, as well as cater for a wider commercial market.

The ultimate plan is to further extend the lift to 165m and the lifting capacity to 12,000 tonnes.

Now the facility is producing tangible results and benefits are seen to flow from this aspect of defence work, Western Australia is placing greater emphasis on building up other defence support sectors and promoting more industry involvement.

State Government Initiatives

To generate a higher profile for the defence industry and to attract a bigger share of the $8 billion federal defence budget, the State Government is developing a Defence Technology Precinct opposite the marine support facility.

Integration of Defence Precinct Activities

Fully Completed Marine Support Facility

Work has begun on the 25ha site. Freehold lots are bing made available this month and a 2,000sq m leasehold centre building is planned to open next April.

The centre building will provide common user facilities, such as calibration, testing, trialling, computing and training. It will also house research and development facilities in marine, oceanographic and defence science areas.

The precinct provides the mechanism to integrate growing defence-related companies with university research programmes and established industries, such as engineering, shipbuilding and communications.

Its main focus is the commercial application of R&D and promoting joint ventures, technology transfer, major contract work and exports.

The Government's Technology and Inudstry Development Authority (TIDA) is working with industry to increase the number of West Australian companies involved in defence beyond the current 200.

Western Australia has the potential to meet the higher technological and quality standards and upgraded human resource skills demanded by defence-related projects.

To help developing companies TIDA offers various programmes that show how to modernise and expand, master new technologies and improve international competitiveness.

Why not visit Western Australia to see for yourself these exciting developments and opportunities?

Contact:

TIDA
TECHNOLOGY AND INDUSTRY DEVELOPMENT AUTHORITY OF WESTERN AUSTRALIA
170 St George's Terrace, Perth, Western Australia, 6000.
Telephone: (09) 327 5555.

NAVY
BLASTS CHANNEL FOR SOLOMON ISLANDS UNDER DEFENCE COOPERATION

by Tony Underwood

Sailors onboard HMAS BRUNEI manhandle drums of explosives prior to the channel blasting.

In an Australian/Solomon Islanders operation, Navy clearance divers have blasted a new, much needed shipping channel for a large village in the Solomon Islands.

An RAN team of about 30, including 14 members of Clearance Diving Team 1 from HMAS WATERHEN in Sydney, are carrying out more than one month of Australian Defence Cooperation tasks in the island group.

The divers travelled on board the landing craft HMAS BRUNEI, captained by Lieutenant Chris Curtis, for duties including disposal of World War II explosive ordnance and provision of a channel capable of taking 110 to 120 tonne coastal vessels under all tidal conditions within Rereghana Passage, about 250 nautical miles north-west of Honiara.

Near Mbiula Village in the Western Provinces, Navy divers were involved first in trials with two drums of Australian-manufactured Tovex 650 explosive to be used for the task.

Departing the ship for the blasting area.

Satisfied with the initial results, the clearance divers and crew of BRUNEI working alongside local islanders placed in the passage a total of 25 tonnes of the explosive, manufactured by Dyno Wesfarmers Ltd, at Bogan Gate (near Parkes).

The divers, led by LEUT Mike Gough, connected a total of 84 205-litre drums and six smaller 60-litre drums of explosive with plastic explosive primers into a single firing loop with detonating cord.

With the area cleared of villagers shortly after 9am local time, the divers touched off safety fuses.

The $100,000 blast pushed 110,000 tonnes of water skywards in a plume reaching a height of more than 300 metres.

Weight of the water helps direct the blast downwards and the explosion provided a channel 250 metres long and 11 metres wide, and about three metres deeper than the previous floor of the passage.

NAVY BLASTS CHANNEL — CONTINUED

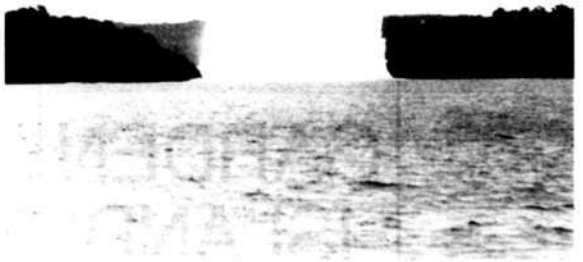
Solomon Islands Government vessels 'proved' the new channel by sailing from the sea into the lagoon a short time after the blast. The passage will also improve access for the Solomon Islands patrol boats LATA (provided under the Australia-funded Pacific Patrol Boat Project) and SAVO.

BRUNEI with the divers embarked is continued through the Western Provinces to 11 more sites returning to Honiara before returning to Sydney on May 25th.

Since 1979, the RAN has undertaken a program under Defence Cooperation to clear navigational channels and shipping hazards in the Solomon Islands.

The last operation was conducted around Makira Island in July last year.

Solomon Islanders and Australian sailors roll a drum of explosive into a boat for positioning for the channel blast.



More than 100,000 tonnes of water are driven skywards from the detonation of 25 tonnes of explosive.

On-the-job refresher training and technical training is being provided to Solomon Islands Marine Division divers during the operation.

Australia's defence cooperative activities in the South Pacific focus on assisting the development of maritime surveillance capabilities in response to the South pacific countries' concerns for their economic security and national sovereignty.

The Defence Department plans to spend about $20.6 million on Defence cooperation with the South Pacific this financial year.

Garden Island in 1921-22. Alongside, from left to right are; the light cruiser HMAS ENCOUNTER, the oiler KURUMBA, the light cruiser PSYCHE and a Town class cruiser. Other ships lie alongside the latter.

(Photo courtesy T. Weaver)

From the deck of an active ship, the decommissioned battlecruiser AUSTRALIA and sloop UNA lie at anchor ofrf the Island.

(Photo courtesy T. Weaver)

GARDEN ISLAND

1921-1922

Netherlands Navy Today

All surface units of the Royal Netherlands Navy are deployed in three task groups, while the submarines operate as a single squadron. The maritime patrol aircraft operate in three squadrons, one of which provides training. Mine countermeasures forces are also divided into three groups, two operating off the Dutch coast and one operating under CHINCHAN command.

The present shape of the RN1N is largely the result of the 1974 Fleet Plan, which set a target of 25 ships. Three of these had to be air defence (AAW) ships and flagships – two survive today as the DLGs *Tromp* and *de Ruyter*. There were a dozen old destroyers, six van Speijk class frigates (copied from the British *Leander* design), and six small corvettes. Plans were already in hand to replace the destroyers with 12 *Kortenaer* class 'Standard' or 'S' type

By ANTONY PRESTON

The new air defence frigate WITTE DE WITH.

The Royal Netherlands Navy (RN1N), according to NATO planning, shares with the Royal Navy the main burden of surface warfare in the Eastern Atlantic. The two navies also share a number of overlapping responsibilities in the North Sea.

frigates, and to give an extensive update to the *van Speijk* class.

All targets were achieved within the 10 year-span of the Fleet Plan. The shipyards put up a fine performance in building the frigates, two of which were sold on the slip to Greece. In view of the escalating air threat the two RN1N replacements were redesigned as air defence flagships – the *Jacob van Heemskerck* and *Witte de With* were designated the 'L' type, and were completed in 1985-86.

In 1984, when a new ten-year plan was being prepared, it was clear that the corvettes were of marginal fighting value. It was also clear that the Dutch shipyards were in trouble, typified by the bankruptcy of the Rhein-Schelde-Verolme group in 1983. Plans to replace the corvettes by a new compact frigate known as the 'M' type were in hand, but orders were not planned until 1987. To stave off disaster in the yards four were ordered, with options on another four – to replace not only the six corvettes but also the *van Speijk* class in the 1990s.

The new frigates, named after several changes the *Karel Doorman* class, are sophisticated anti-submarine ships armed with Harpoon anti-ship missiles, vertically-launched Seasparrow point-defence missiles and a Goalkeeper close-in gun system.

Propulsion is Combined Diesel or Gas Turbine (CODOG), with Rolls-Royce Marine Spey gas turbines and Werkspoor

JAN VAN BRAKEL, arriving in Port Adelaide.

diesels. Speed is 30 kn on GTs and 20 kn on diesels. On diesels the endurance is 5000 nm at 18 kn.

As with the 'S' and 'L' classes great emphasis is placed on the choice of standard NATO equipment wherever possible. The sonars, both hull-mounted and towed array, are developed jointly with Thomson-Sinatra, using a Dutch-developed sonics processor and French arrays.

Submarines

For many years the RN1N's Submarine Command has run a squadron of six SSKs. The *Dolfijn* class, completed in 1972, would need replacing in the 1980s. The *Walrus* design was drawn up, but changes to the specification and technical problems in dealing with new types of HT steel caused considerable delays and cost overruns. To cap it all the leadboat *Walrus* was badly damaged by fire while fitting out.

The *Walrus* has proved repairable but the delay means that the second-of-class *Zeeleeuw* is now to be commissioned for first-of-class trials next year. The second pair, the new *Dolfijn* and the *Bruinvis* will replace the *Potvis* class, and a third pair will replace the *Zwaardvis* and *Tijgerhaai* in the late 1990s.

The submarines use Signaal and Thomson-Sinatra sonars and fire control processing, but weapons are American: Mk 37C and Mk 48 Mod 3/4 torpedoes and Sub-Harpoon missiles. The British Type 2026 towed array is deployed in both the *Zwaardvis* and *Zeeleeuw* classes.

Mine Warfare

In the early 1970s the RN1N still operated a number of obsolescent 'Western Union' minesweepers and minehunters. To replace these the RN1N entered into a tripartite agreement with France and Belgium to build a common glass-reinforced plastic (GRP) minehunter. The first two Dutch *Alkmaar* class were ordered in 1977 and today 14 out of 15 are in service. Plans are now in hand for a further class of ten minesweepers to work out to the 100m line in the southern North Sea. The first of these is to be laid down next year, funds permitting, and will be in service by 1992. They will replace the wooden *Dokkum* class.

Originally there were to be 15 units but there are long-term plans to build six larger deep-sea 'sweepers in the late 1990s. Design details have not been published but RN1N sources suggest that the Norwegian air-cushion MCMV design is one of the contenders. The great attraction of the Tripartite programme is the carefully constructed plan to ensure that each participant nation gets a fair share of work. The Dutch contribution is the main propulsion system, single-shaft Werkspoor diesels.

The first of the M Class frigates.

The mine warfare ship HAARLEM.

Other projects include an amphibious assault ship, intended to make the Royal Netherlands Marines less dependent on their British counterparts for seaborne lift. The 1988 Defence Plan confirmed that funds for a 8000-ton assault ship (LPD) or large landing ship will be reserved from 1992, to be commissioned in 1996. She will be capable of lifting 600 marines and their vehicles and equipment. An additional replenishment ship is planned to modernise the support forces.

The Naval Air Arm operates three maritime patrol squadrons at Valkenburg and a helicopter squadron at Dekoog.

Aircraft include 13 P-3C Orions, two Fokker F-27 Maritimes and 22 Lynx helicopters, divided into six UH-14A SAR types, nine SH-14Bs fitted with dipping sonars and eight SH-14Cs. During the 1990s the SH-14Bs are to be upgraded to C-standard, with Rolls-Royce Gem d42 turboshaft engines and Thomson-Sintra DUAV-4 dipping sonars.

Financial Cutbacks

The smooth planning has been interrupted by the sort of cash-crises which has hit other NATO navies. Four of the *van Speijk* class were sold to Indonesia in 1986-88, and under the modified Ten Year Plan announced in September the remaining pair are to be disposed of.

Plans to modernise the two DLGs had already been cutback, with one to be put into reserve, but now both ships are to be paid off without a mid-life update. Only six of the ten *Kortenaer* frigates will receive a so-called capability upkeep programme of routine maintenance from 1992 onwards.

The 13 P-3C Orion maritime patrol aircraft will not be rearmed with Harpoon anti-ship missiles as planned.

A bigger merchant fleet need not be an asset

The campaign to 'Expand Australia's Merchant Fleet' being run by the Seaman's Union of Australia may at first sight seem attractive and worthy of support to people concerned about Australia's defence. However, it ain't necessarily so.

by HAL COLEBATCH*

Before such a campaign is supported, we should know exactly what it entails and how the proposed expansion is to take place. If it is to be done by increasing direct or concealed subsidies the disadvantages may outweigh the advantages.

We would all like to see Australian ships manned by Australian seafarers. The reason we may not is that they are uncompetitive. Australia's present merchant fleet is extremely expensive. Since its infancy it has been protected from competition with very poor results. In a major study of the economics of Australian coastal shipping, Mr Ross McLean has written:

> *One would expect Australia to have a substantial, robust and effective shipping industry.*
> *After all, we have a long coastline with all the major population centres on the seaboard ... Only 3% of Australia's substantial international trade, however, is carried in Australian ships.*[1]

As a result of protection crew costs for Australian merchant ships are among the highest in the world. The Industries Assistance Commission has estimated that the cost of crewing an Australian vessel is about 3.6 times the cost of a British vessel and nearly twice that of a Scandinavian one.

Port installations are under-utilised and industrial relations in Australian ports are among the worst in the world.

The Australian National Line is wholly owned by the Commonwealth Government. It was established because at the end of World War II the government found itself owning a collection of merchant ships, ships it could have sold only at a book loss. ANL has had no meaningful review of its purpose since then.

In recent years, ANL has had some rationalisation. A capital injection of $160 million improved its gearing ratio and in 1984-85 it paid its first dividend in 14 years. However, it was still carrying losses of $110 million in 1987. No private concern could have survived such a history of losses. $10 million could have been spent directly on the navy, for example to help buy a second-hand British aircraft carrier to replace HMAS 'Melbourne'. Even if bargain-basement specials in aircraft-carriers and other modern warships are not always available, such an amount would be helpful even to pay the interest on major warship acquisitions.

The cost of coastal shipping to the Australian economy is high: evidence a couple of years ago showed phosphate rock shipped from Christmas Island to Australia cost $30 per tonne, while phosphate rock shipped half-way round the world from Florida cost $16 per tonne. The same Christmas Island phosphate was at that time carried to New Zealand in third-country ships for about $10 per tonne.[2] These costs hit Australian farmers directly, injuring them, the consuming public, and the exports needed to earn foreign exchange to pay for, among other things, defence purchases.

The same applies to all manner of other industries. McLean's study shows Australian coastal shipping has not only priced itself almost out of existance (so much for the rationale that protection would allow Australia its own ships and seamen for defence), but has seriously eroded the competitiveness of other industries and imposed enormous costs on many sections of the economy.

One industry that has suffered particularly has been steel, probably the most basic component of any defence industry.

In 1978 Mr John Barber, the chief economist of Lysaught (Australia) Ltd, said that the cost of transporting a tonne of steel by an Australian coastal liner from Port Kembla to Fremantle was 44% higher than the cost of shipping steel from Japan to Fremantle. This figure, an average over several different product categories, was verified again in 1983.

CONTINUED ON PAGE 28

Launch of the coaster GOLIATH.

HMAS DERWENT 25 YEARS OF SERVICE

Launch of the coaster GOLIATH.

The West Australian based River Class Destroyer Escort HMAS DERWENT celebrated 25 years at sea with the Royal Australian Navy (RAN) when she returned from her latest South East Asian deployment in April.

The present DERWENT is the sixth ship, and first RAN ship, to bear the name. The previous five included four British ships, ranging from an 18 Gun Brig of the Channel Command serving in the Napoleonic War to a Hunt Class Destroyer of the Second World War, and a Naval Depot in Hobart.

The Fighting 49' is primarily designed as a submarine hunter, equipped with the Australian designed IKARA anti submarine missile that will allow the ship to strike at a submarine before it can become a threat. For close-in anti submarine self defence the ship is fitted with two sets of triple barrelled torpedo tubes. To provide protection against surface and air threats, DERWENT has the tried and tested 4.5" Mk 6 Gun ably assisted by the optically guided Seacat missile system.

Built in Williamstown Naval Dockyard, DERWENT was launched by Lady Burrell, wife of Admiral Burrell, in April 1961 and commissioned into the RAN in April 1964. DERWENT began her service career with a bang when she fired one of her Seacat missiles; giving her the distinction of being the first RAN ship to launch a guided missile. Once worked up the 'Fighting 49' embarked on her operational duties, and before her commissioning year was out had started a 3 month patrol of South East Asia; the first of many to come.

During the 17 years from commissioning to her modernisation refit in 1981, DERWENT spent more than 5 1/2 years deployed to South East Asia and the Indian Ocean, taking Australia abroad, visiting such exotic places as Singapore, Bangkok, Mombasa and Bahrein to name but a few. In doing so DERWENT and her company showed themselves as a professional and

Late 1960s.

1980s.

HMAS DERWENT 25 YEARS OF SERVICE - CONTINUED -

hard working unit of the RAN to many Navies of the world, many of whom are now old friends.

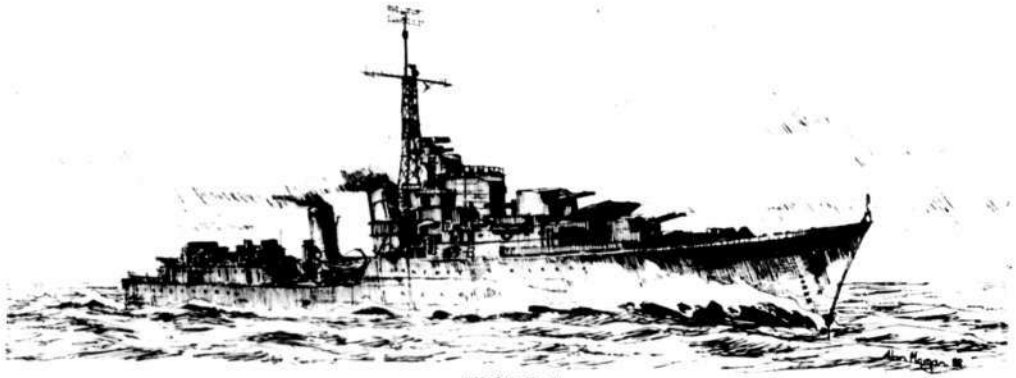
The modernisation refit took 4 1/2 years to complete. DERWENT recommissioned in May 1985 and rejoined the Fleet in November as a better equipped and more capable peacekeeper. After successfully completing trials, which went well into 1986, DERWENT participated in the Fleet entry into Sydney to mark the start of the RAN's 75th Anniversary celebrations. The year was rounded off when the Ship received a Silver Platter Award from the Catering Institute of Australia for displaying the best culinary skills in the Fleet; not an easy task!

Early in 1987 DERWENT changed homeport, from Sydney in the East to HMAS STIRLING in the West, and effected a full crew changeover with HMAS STUART in 3 days. One of DERWENT's first duties in the West was as support ship for the defence of the America's Cup off Fremantle, in addition to the normal weapons firings and small exercises. The second half of the year started with another, eagerly awaited, SE Asian deployment and culminated with participation in the arrival of the Tall Ships and First Fleet into Fremantle. Further trips to SE Asia followed in 1988 as deployment and exercise tasks flooded in, including escorting HMS ARK ROYAL, Flag ship of the Royal Navy's 'Global 88' Task Group, into Fremantle.

Early in her career.

The start of DERWENT'S 25th Anniversary Year sees the 'Fighting 49' deployed to SE Asia, for the third time in 9 months, including a visit to Madras, the first by an RAN warship in ten years. DERWENT returned home in time for her 25th Birthday Party on 30 April which was marked by a whole weekend of events to celebrate the occasion including a traditional Naval Mess dinner to which the Governor of WA was invited.

On patrol in south-east Asia.



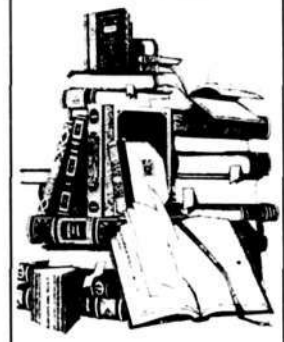
HMAS BATAAN

OUT OF THE PAST

Drawings by ALAN MORGAN

USS NEW JERSEY.

BOOK REVIEWS



BRITISH BATTLESHIPS OF WORLD WAR ONE

By **RA BURT**

Published by
Arms and Armour Press, London, 1986

Once in a generation a book is published which becomes a classic in its field. Dr Oscar Parkes' British Battleships 1860 – 1950 was just such a book. Unfortunately for warship enthusiasts, this book has been out of print since the 1960s and is extremely hard to come by and the only alternative has been a range of mediocre books covering various aspects of the design, development and history of British battleships. The saviour of those interested in the design, development and history of battleships generally, and British battleships in particular, has been Mr R A Burt. In British Battleships of World War One he has written a book that will always be favourably compared to Dr. Parkes' classic and in many ways surpasses it. Unfortunately, this excellent book only covers the period from the DREADNOUGHT through to the ships ordered in the 1915 estimates.

Each class of battleship is dealt with in a separate chapter and these chapters are generally arranged to cover such aspects as; design, armament, armour, machinery, appearance changes and ship histories, including their final fate. The chapters of the book abound with a wealth of technical data and first rate line diagrams showing various aspects of the ship's hull and appearance. Supporting these diagrams are over 300 photographs carefully selected to highlight the various technical and appearance aspects described in the text.

One problem the author of a book like British Battleships of World War One faces is how to present the mass of technical data available and ensure the book is readable at the same time. Mr Burt has succeeded in doing both with ease.

If there is a weakness in the book then they are limited to the fact that the book only covers the period of World War One and not the full period of British battleships up to and including HMS VANGUARD. The periods before and after World War One are to be covered by separate books. This will make covering the period of British battleships expensive, however, if these other books are of the same high standard as Mr Burt's then it will be well worth it.

In summary, Mr Burt has written an excellent book which is bound to be the standard work of its type for a long time to come.

THE SHIPS OF THE GERMAN FLEETS 1848-1945

By **HANS JURGEN HANSEN**

Published by
The Naval Institute Press, Annapolis, Maryland, 21402, USA

When most people think of the German warships names such as BISMARCK, EMDEN and PRINZ EUGEN come to mind, and for the majority of people this is as far their knowledge of German warship goes. In his book The Ships Of The German Fleets 1848-1945, Hans Jurgen Hansen has set about trying to change this. In his introduction the author states that the aim of the book is to give a clear picture of the ships of the German national fleets beginning in 1848 and ending with the cessation of hostilities in 1945.

The book is built around a large number of contemporary engravings, lithographs, paintings and photographs. These illustrations are supported by a comprehensive text explaining the technical details of the ships and the historical context surrounding the ship. Unlike most other books dealing with warships there are no masses of technical tables to bore the reader. These details have been placed in the text and, contrary to what may be expected, this has not detracted from the text which is written in a very readable style.

The Ships of the German Fleets 1848 – 1945

Hans Jurgen Hansen

If there is a major criticism of the book it is that only the major warships have been dealt with in any detail and the smaller naval vessels have been omitted. However this has been offset by the author's coverage of the ships that served the navies of the German state during the 19th century.

Overall Hans Jurgen Hansen has produced a well written and superbly illustrated book which fulfills the author's wish that it serve as a memorial to those comrades of his who remained at sea.

SHIPS and AIRCRAFT of the US FLEET

By **NORMAN POLMAR**

Published by
The Naval Institute Press, Annapolis, Maryland, 21402, USA

Spanning a massive 600 pages this book is the total reference work for the United States Navy today. It is divided into 32 sections plus four appendices, preface, indexes and addenda.

The major part of the book is devoted to the USN, its ships, equipment, aircraft, personnel and organisation. However chapters are provided for the Coast Guard, National Oceanic and Atmospheric Administration and Miscellaneous ships.

It is hard to know where to start reviewing a publication of such magnitude. Selecting section 17, Amphibious Ships, the reader will be introduced to the ship type by a well informed narrative, supported by tables of lift capacity and the various class'. Each individual ship or class is then separately covered with technical and historical data, narrative including design, costs, electronics, modernisation and classification. The descriptions also include the armament specifications and engineering. Together with an excellent selection of black and white photography the entire ship or class is completely described.

Each section also details the recent, post 1945 history of that particular group of

CONTINUED ON PAGE 26

USS CARRONADE

Carronade (IFS-1) was launched 26 May 1953 by Puget Sound Bridge & Dredging Co., Seattle, Wash. sponsored by Mrs L. Herndon; and commissioned 25 May 1955, Lieutenant Commander D.O. Doran in command.

Carronade departed Bremerton for her home port, San Diego, 21 July 1955. She arrived 24 July, and was inspected by Secretary of the Navy C.S. Thomas on 26 July. The first ship of her design, Carronade carried out extensive training in the San Diego area until 19 March 1956 when she sailed to Pearl Harbor for a month of operations. Returning to San Diego for local exercises she made a good-will visit to Vancouver, B.C. (20 August-1 September), and then participated in amphibious exercises demonstrating the effectiveness of the inshore fire support ship (November 1956-January 1957).

Carronade resumed local operations, upkeep and overhaul in the San Diego area until a tour of Far Eastern duty (18 January-15 July 1958). She returned to the west coast and local operations the autumn of 1959 when she departed on another cruise to the Orient. Sailing back to San Diego in February 1960, *Carronade* remained there and was decommissioned and placed in reserve on 31 May 1960.

The ship was returned to service for the Vietnam War and operated from 1965 to 1970. Paid off on 24 July, *Carronade* was finally broken up in 1974.

As built the ship was 1500 tons, with a length of 245 feet and beam of 39 feet. Her top speed was 15 knots with a range of 5000 miles at 12 knots. The ship was fitted with one 5 inch, four 40mm and two 20mm weapons plus eight twin rocket launchers. *Carronade* carried a crew of 156.

BOOK REVIEWS
CONTINUED

ships, with references back to earlier editions.

Despite the ongoing new construction programmes of the Reagan Administrations, it is apparent that much of the supporting force of auxiliaries is now very much dated, many from the Second World War. However these ships continue in commission as the funds for replacement vessels has been scarce.

The Naval Aircraft section, at 70 plus pages is the second longest (after auxiliaries). The large number of aircraft and models needed to maintain a large fixed wing and helicopter carrier force is evident. The same could be said of the extreme variety of naval weapons embarked in USN Fleet units across the oceans of the world. From the 1940 vintage 16 inch battleship guns to the new point defence RAM system, each weapon is individually illustrated and described.

The Ships and Aircraft of the US Fleet is an excellent publication from the stables of the US Naval Institute. A valuable addition to all naval enthusiasts' libraries.

PICTORIAL REVIEW – NAVY 75TH YEAR

By **JOHN MORTIMER**

A quality hard cover book of 128 pages, featuring 80 colour photographs and 126 black and white photographs which are complemented by an informative text covering naval life and events of the RAN's 75th Anniversary year.

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NAVY LEAGUE AND CADET NEWS

CYCLONE BOAT HONORED

A Royal Australian Navy patrol boat has been honored for its part in delivering aid to more than 30 Pacific island communities battered by cyclones last year.

The Darwin-based *HMAS Cessnock* was presented with the Navy League's Community Shield award at a special function yesterday afternoon.

The annual award recognises excellence in aid to a civilian community by a navy division.

Navy League NT president, Mr Colin Orr, said *HMAS Cessnock* had acted commendably in supporting cyclone relief operations.

But the award was made more significant by the fact that the assistance was given by a ship's compa..y of only 21 men.

He said their actions were in the finest traditions of the navy.

Cessnock's commendable work began in February last year when it landed building materials, clothing and emergency provisions on 10 islands in the Banks and Torres groups, north of Vanuatu.

The area was ravaged by tropical cyclone Anne in January.

A few weeks later the Cessnock's capabilities were called on again – this time to aid Pacific communities.

The naval boat delivered 15 tonnes of emergency stores and transported military and civilian relief workers between 11 islands in central Vanuatu following cyclone Bola.

HMAS Cessnock also received the award in 1984 for bringing help to Gulf of Carpentaria communities after cyclone Kate.

The Darwin *HMAS Coonawarra* shore base received the award in 1986.

CORAL SEA WEEK VISITORS

The Navy League was pleased to be invited to entertain one of several distinguished Americans who visited Australia to mark the anniversary of the battle of the Coral Sea.

In the course of a 24-hour visit to Melbourne, Rear Admiral Henri B. Chase, U.S.N., a naval aviator and currently Commander of the U.S. 7th Fleet Amphibious Forces, accompanied by his wife Genny and U.S. Consul-General Peter Higgins, attended a function arranged by the Federal President and members of the Victorian Division of the League at the Federal President's home.

The Navy League enjoys a very good relationship with the United States Navy and many lasting friendships have been made over the years. This can only be in the best interests of both countries.

EFFICIENCY EARNS CADETS NAVY LEAGUE TROPHY

The Naval Reserve Cadet unit in Albany, *Training Ship Vancouver*, has been awarded the Navy League Trophy as the most efficient unit in Australia.

Petty Officer Tom McGrath and Leading Seaman Mick Stankovic proudly show off the award

NAVY LEAGUE AND CADET NEWS — CONTINUED

The assessment was made by Captain TE Lewis RAN Director, Naval Reserves and Cadets, during a recent inspection of *T S Vancouver*.

TS Vancouver has been nominated as the most efficient unit in WA three times in the past 10 years, but this is the first time that it has received the trophy.

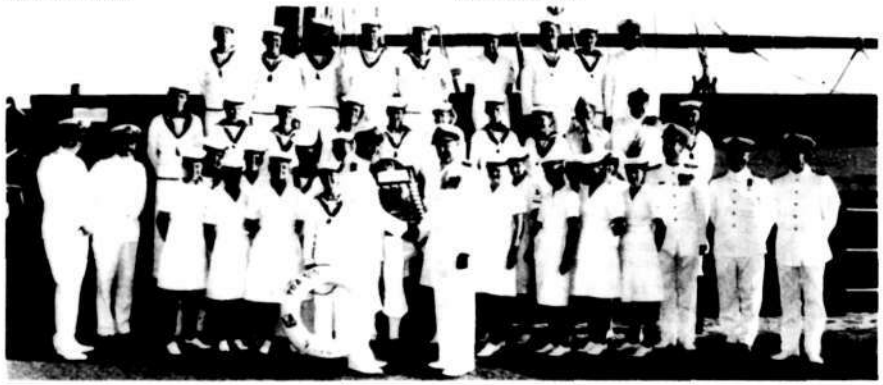
The win may be the first time the trophy has been awarded to a country unit in WA.

Each cadet unit in Australia was inspected by the local naval authority responsible for the operation of the Naval Reserves and Cadets in that area.

The inspecting officer assessed the unit on the basis of the standard of training of the cadets which includes parade ground, seamanship and sailing activities.

They were also assessed on their enthusiasm for these activities, the relationship between cadets and the unit staff and the administrative and instructional abilities of the staff.

The inspecting officer nominated *TS Vancouver* as the most efficient unit in the area and the unit was then nominated for the Navy League Trophy.



A BIGGER MERCHANT FLEET — CONTINUED

The 1980 IAC Report on the Iron and Steel Industry indicated that in 1977-78 prices it was costing BHP's steel division about $25 million a year extra to use Australian shipping. If the only sufferers were BHP shareholders, others might look upon this with equanimity. However they are not the only sufferers: the high cost of coastal shipping has substantially lessened the advantages that should accrue to the whole Australian steel industry relatively to Japanese, Korean and Taiwanese competitors.

Many industries have suffered or been aborted before birth because of shipping costs. These are two more examples of what the protection of Australian coastal shipping has cost the steel industry alone: the so-called 'Twin Steel Plant Project' discussed in the 1970's, by which Western Australia and Queensland would have swapped iron ore and coal and built two new steel plants, and another proposal for a 'jumbo' steel plant in Western Australia involving BHP and an international steel consortium, did not proceed after studies examined the cost of using Australian coastal shipping.

More recently the Business Council of Australia has estimated that the cost of protecting Australian-flag shipping is in the order of $200 million each year. The BCA further points out that the stagnation of coastal shipping is not due to foreign competition but to the failure to compete with land transport.

We have to pay for defence. And it is in our interests to get the best for our money. We have had disastrous examples in wartime of what happens when money is skimped on defence equipment. We do not want some future equivalent of Wirraways against Zeros, or some future version of HMAS 'Yarra' called upon to sacrifice herself defending a convoy alone. We do not need to look back as far as World War II to see the falseness of economy in defence: several of the British ships lost at the Falklands might have been saved had they not been built and fitted out on the cheap.

The point is that a strong economy is necessary for us to buy good defence equipment. Australia will probably always need to buy a great deal of this overseas but even if it is built locally it will still cost a great deal.

A merchant fleet, from the defence point of view, trains men and officers in seamanship (they may also pick up some less desirable skills), but not in fighting skills and not in Naval discipline or techniques.

Rather than expanding an inefficient and ruinously costly protected merchant fleet, it would make better sense to spend the money building up the Naval Reserve. Two hundred million dollars could go a long way there. There are a number of other things that could be done. Instead of owning the ANL, which, since it cannot go broke will never be subject to commercial discipline, the government might do better to subsidise private operation of ships suitable for possible defence needs. The ANL should be sold, perhaps with its present employees being given an equity in shares.

If Australia's merchant fleet were to be expanded as a result of the reduction of protection and becoming competitive thus winning orders on its own merits, we could all applaud. As Professor John Taplin has pointed out: 'If economic regulation of transport were abolished altogether, the gains would far exceed any losses'.[3] If we supported making our shipping industry competitive we would be doing our country a service. However, I doubt that this is what the Seamen's Union campaign has in mind.

---

* Hal Colebatch is a member of the Navy League and the Ex-Naval Cadet's Association. He is an associate of the Australian Institute for Public Policy.

[1] Ross McLean, *Australian Coastal Shipping: The High Cost of Protection* (Australian Institute for Public Policy, 1983, p 1.

[2] McLean, p 26.

[3] Ross Taplin *Australian Transport: Current Issues* (Legislative Research Service Discussion Paper 5, Canberra, Parliamentary Library, 1982).

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OCTOBER – DECEMBER, 1989

THE NAVY

The magazine of
THE NAVY LEAGUE OF AUSTRALIA

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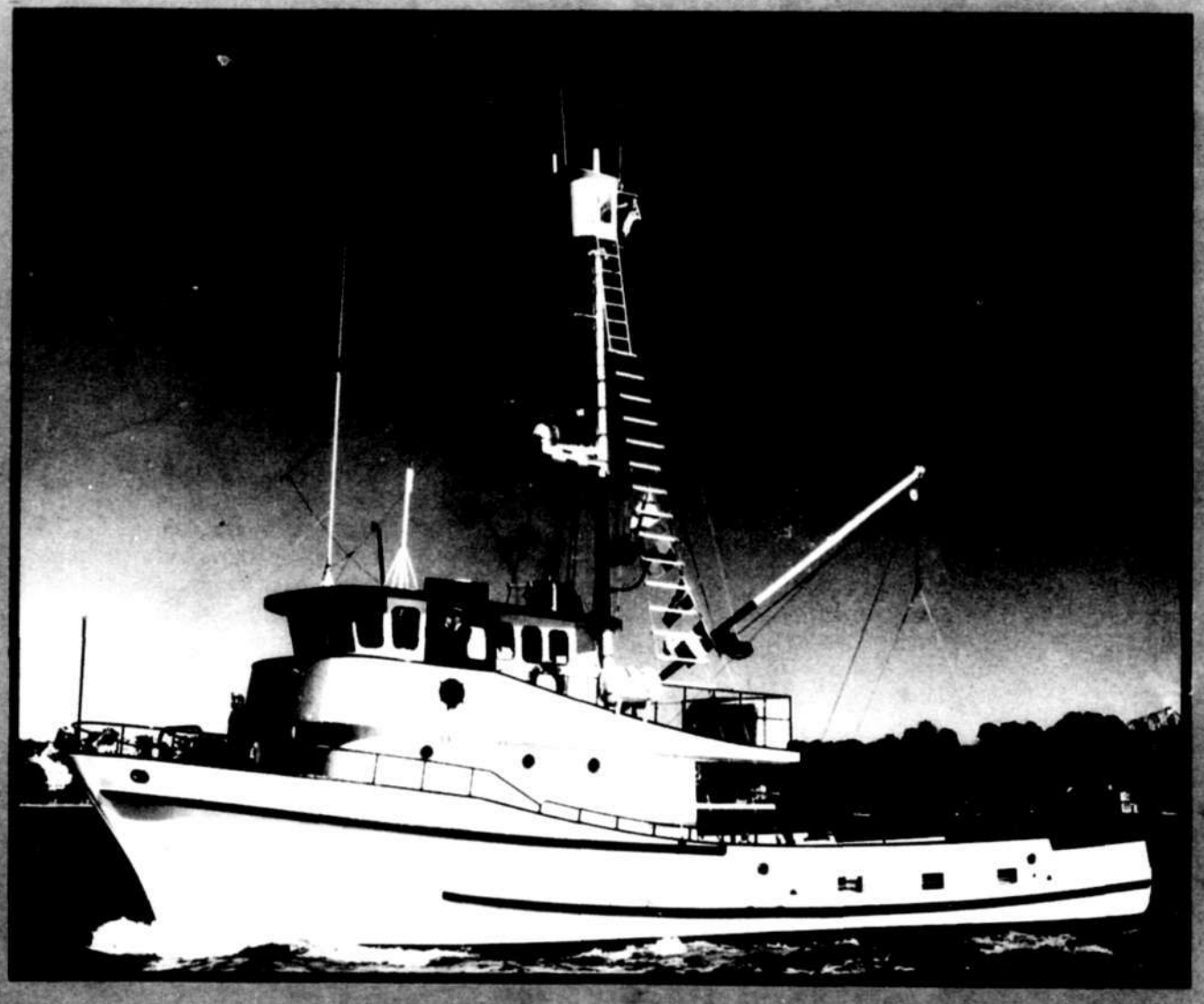

- *NAVY WEEK, SYDNEY 1-8 OCTOBER, 1989*
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- *A NEW HMAS WESTRALIA*
- *RAN MINESWEEPING CAPABILITY*
- *IRONCLAD RAM BUFFEL*
- *LAST KIWI HDML RETIRES*
- *BOOK REVIEWS*

THE NAVY

Registered by Australia Post Publications No NBP 1482

The magazine of THE NAVY LEAGUE OF AUSTRALIA

Vol 51 **OCTOBER – DECEMBER 1989** **No. 4**

ADVERTISING AND PUBLICATION
Percival Publishing Co. Pty Ltd.
(Incorporated in NSW)

SYDNEY
862 Elizabeth Street, Waterloo NSW 2017 Phone (02) 699 6231

MELBOURNE
370 Little Bourke Street, Melbourne, 3000
Phone: (03) 670 4321

ADELAIDE
2nd Floor, 97 Currie Street, Adelaide 5000. Phone (08) 231 6225

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2 Walcott Street, Mt Lawley, 6060
Phone: (09) 370 1500 Fax: (09) 370 1581

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OUR COVER PHOTOGRAPH

The auxiliary minesweeper (COOP Vessel) KORAAGA underway on Sydney Harbour, 10th July, 1989.
– Photo courtesy Naval Photographic Unit

CONTENTS

viewpoint

READERS

Dear Sir,

Further to the Viewpoint – Readers of "The Navy", July – September, 1989, I would like to point out that ST. GILES and HEROS had identical hull dimensions and machinery particulars, and different builders (from 1952 edition of "Ships on the Australian, New Zealand and Islanders Registers"). However, ST. GILES definitely had a focsle and HEROS had a flush deck – to the best of my knowledge. This tends to be confirmed by their differences in gross tonnage – ST. GILES was a larger gross tonnage indicating that she had a focsle.

Another letter referred to the 45-foot tugs built during World War II. Some were built for the Dutch government and shipped to the Dutch East Indies after the war and some may have been built for UNRAA (a United Nations relief and assistance organization).

TB 1536, 45 foot towboat – Photo courtesy Tim Ryan

The 45-foot tug hulls were built by various boatbuilders, often with "dilutee" shipwright labour, and outfitted by other companies. The wheelhouse, engine room trunk, funnel and mast were all prefabricated by the Sydney firm of Howie Moffat, who may have been joiners and shop fitters in peacetime, and supplied to the outfitters as part of the 3-stage building programme.

Many of the 45-foot tugs (or towboats as they were officially called) were acquired and adapted for peacetime use and, probably, the most successful was Nicholson Bros. Harbour Transport Pty. Ltd. Nicholson Bros. who purchased and operated five on Sydney Harbour. Nicholson Bros. through their Dreadnought Eng. Pty. Ltd., subsidiary, outfitted many tugs initially.

Yours faithfully,
Alex Books
Ryde 2112

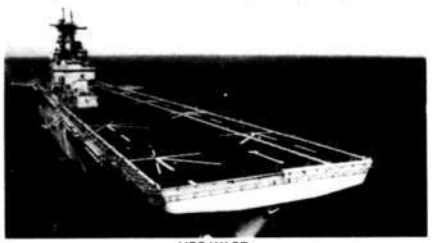
Dear Sir,

In a recent issue of The Navy a correspondent of yours described America's new WASP class amphibious ships.

To complete the story and for your readers interest I have enclosed a photograph of the lead ship WASP underway for the first time.

Yours Sincerely.
M. Gordon
Potts Point 2010

USS SARATOGA, Ocean Pier, Hobart, March 1944. The boat in the foreground is an NAP vessel. Can any reader identify the boat?



USS WASP

Dear Sir,

Your reader D.A. Hamilton, N.S.W. (July-September, 1989 issue) questions whether our new surface combatants could have the capacity to "carry" two Harrier aircraft and since they will be helicopter capable, it is reasonable to guess that they could "carry" a Harrier.

I have emphasised the word carry, because there is a difference between the ability to carry an aircraft and to operate that aircraft in the full sense of the word. Such operation requires maintenance, command and control facilities and it would be necessary to ensure that these were available in the fleet.

We already have, or shortly will have, ten ships capable (with or without minor modification) of carrying the Harrier. They are TOBRUK, SUCCESS, STALWART, JERVIS BAY and six FFGS. APPLELEAF may make it eleven.

However, economical operation with a viable payload cannot be achieved by operating in Vertical Take-off mode, which would be the case if aircraft were carried in current or projected fleet units. The more viable operation requires the use of the Short Take-off mode, achievable with the use of a short flight deck and "ski jump". Such a deck could be fitted to TOBRUK, or better, provided by a dedicated helicopter/Harrier platform, a unit urgently required by the fleet.

VIEWPOINT – READERS (CONTINUED)

Meanwhile, Mr. Hamilton is quite right in suggesting that any fleet unit should have a platform sufficiently strong and with sufficient clearances to accept a Harrier aircraft, so that even without a STO deck we can with a minimum number of aircraft, enter this technologically exciting era of maritime operations.

Yours sincerely,
John Bird
State President Victorian Division.

Dear Sir,

I refer to letter by L.K. Wood in the July-September Issue, HMAS ST GILES and HMAS HEROS (ex ST ERTHE) were sister ships members of the class known as the 40 Saints built during WW1 as salvage tugs for the Admiralty. Waratah Tugs had six of these, one of which "ST. OLAVES", had the original raised forecastle was lost with all hands in the Atlantic whilst under requisition by the RN in WW11. Fenwicks had two tugs of this class in Sydney.

In April-June issue G.K. Andrews lists tugs commissioned by the RAN/Army, the "CHAMPION" 1895 was still in service at Newcastle in 1946.

Yours faithfully,
T.C. Martin,
Rose Bay 2029.

HMAS HEROS with HMAS WESTRALIA

viewpoint

CHECKING ON VISITORS

After a slow start twenty or so years ago, surveillance of the maritime approaches to Australia has become a growth industry, particularly in recent times as the importance of knowing what was happening in our immediate area has become better appreciated. Growth however has been accompanied by many problems, not all yet resolved to the satisfaction of everyone and evitable given the magnitude of the task.

The main problem has been in deciding which among the numerous government departments and agencies with a legitimate interest in an effective surveillance system should have overall responsibility for co-ordination and management. After at least eight studies, inquiries, reports and reviews into surveillance arrangements, responsibility since mid-1988 has rested with an agency known as Coastwatch in the Australian Customs Service (ACS), having previously been twice in the Department of Transport and for a short time with the Federal Police.

The present arrangement, which resulted from an inquiry by Mr Hugh Hudson, Chairman of the Commonwealth Tertiary Education Commission, appears to be the best so far of the several schemes tried and found wanting since the Australian Coastal Surveillance Organisation was formed in 1975. ACS operates Australia-wide and has quite respectable resources and equipment in the form of marine vessels and aircraft including the Nomad. Coastwatch organises the well-known and often newsworthy civilian "coast watch" flights.

Coastwatch cannot perform the surveillance task alone and relies on or requires the co-operation of other departments and organisations, notably Defence (ships and long-range maritime aircraft), Primary Industries & Energy (fisheries, quarantine, off-shore exploration responsibilities), the Federal Policy (law enforcement) and to a lesser extent, Transport & Communications, Foreign Affairs & Trade, environment bodies and so on. The exchange of information is very important: A number of authorities have intelligence-gathering facilities and these are a vital element in the detection of illegal activities. The facilities vary in sophistication and so does the nature of the intelligence; because of the large number of people involved the "security" of information can cause problems.

It is reported that tenders for renewal of the civilian aerial service call for longer range and more sophisticated aircraft, also for night patrols – only day patrols are carried out at present. Taken with other developments it might be thought ACS has an embryo Coast Guard in its midst but this is not so as major elements of Coastwatch's resources are outside its control, e.g., Coastwatch can only ask and not direct Defence to use its ships and aircraft in a particular way. The effectiveness of Coastwatch depends very largely on goodwill between the parties concerned but this would be so with almost any other arrangement of this kind.

There have been many suggestions over the years that Australia should establish a Coast Guard along United States or Canadian lines. The Navy League has always opposed this, mainly for economic reasons, and has advocated instead placement of the co-ordination/management function in the Department of Defence. Defence already has most of the resources and skills required and there is no apparent reason why equipment deficiencies, notably in short-range vessels and aircraft, could not be overcome as they are at the moment, that is, by hiring and borrowing. Maritime Command would be the appropriate authority.

The Navy League has been aware of differences in Defence itself about assuming responsibility for surveillance as a whole; it is argued there is a difference between "defence" and "civil" surveillance, and that the Services must not be distracted from training for war – although many believe the flow of illegal drugs into Australia is itself a form of warfare. The Navy League does not agree that surveillance of the maritime approaches can be split into defence and civilian elements and apart from anything else is of the opinion that involvement by the Services enables them in a practical and at the same time, a very useful way, to learn a great deal more about the geography of their own country and the nature of the surrounding seas than would otherwise be possible. It must also surely bring the Services and the civilian community closer together.

The Coastwatch management team is doing well in difficult circumstances. Why not place it under the umbrella of the Defence Minister where it would have access to more extensive resources? In an emergency or war Defence would have overall responsibility for surveillance, so why not practise the art in normal times?

GEOFFREY EVANS
Federal President

NAVY WEEK SYDNEY

1 - 8 OCTOBER 1989 *Programme of Events*

SATURDAY JUNE 30 & OCTOBER 1:
HMA ships CANBERRA and HMAS BRISBANE open for public inspection at the Garden Island Fleet Base between 1pm-4pm.
HMAS PALUMA open for public inspection at Circular Quay 1pm-4pm.

SUNDAY OCTOBER 1:
ECUMENICAL SERVICE at the Garden Island Naval Chapel 10.30am Colour Party and Sydney Port Division Band will be in attendance.
Free "SOUNDWAVES" Concert at the Sydney Town Hall featuring the Fleet Band and Naval Support Command Band. Commences 2pm.
HMAS PALUMA open for inspection at Circular Quay 1pm-4pm.
HMA ships BRISBANE & CANBERRA open to public between 1pm-4pm. SPD Band will play between 2pm-4pm.

MONDAY OCTOBER 2:
Landing Craft Heray (LCH) HMAS BRUNEI open for public inspection at Circular Quay 1pm-4pm.
HMAS SHOALWATER (Inshore Minehunter) open for inspection at Manly Seaworld 1pm-4pm.
HMAS CURLEW (Inshore Minehunter) open for inspection at Pier One (near south-western pylon of Sydney Harbour Bridge) 1pm-4pm.

TUESDAY OCTOBER 3:
HMAS BRUNEI open for inspection at Circular Quay 1pm-4pm. HMAS SHOALWATER open for inspection at Manly Seaworld 1pm-4pm. HMAS CURLEW open for inspection at Pier One.
Fleet Band will perform at Hornsby Westfield Shopping Centre at 11am and Navy Divers Exhibition.

WEDNESDAY OCTOBER 4:
HMAS BRUNEI open for public inspection at Manly Seaworld 1pm-4pm. HMAS IPSWICH open for public inspection at Pier One 1pm-4pm. HMAS SHOALWATER open for inspection at Circular Quay 1pm-4pm. HMAS CURLEW open for inspection at Darling Harbour 1pm-4pm.

THURSDAY OCTOBER 5:
HMAS BRUNEI open for inspection at Manly Seaworld 1pm-4pm. HMAS IPSWICH open for inspection at Pier One 1pm-4pm. HMAS SHOALWATER open for inspection at Circular Quay. HMAS CURLEW open for inspection at Darling Harbour.
11am; Corvettes Association Wreath Laying Ceremony at Cenotaph (Martin Place) Naval Support Command Band and Fleet Band in attendance.
Navy Physical Training Instructors, Navy Divers & Fleet Band will perform at Burwood Westfield Shopping Centre at 11pm and 2pm and at Warringah Mall Shopping Town at 4.30pm.

FRIDAY OCTOBER 6:
11.30am: HMA Submarine OTAMA enters Darling Harbour.

SATURDAY OCTOBER 7:
11am-12 noon: Free Concert at Tumbalong Park (Darling Harbour) featuring Fleet Band and Physical Training Instructors.
12 noon-5pm: Minor War Vessels open for inspection at Darling Harbour.
12 noon-12.30pm: Dynamic Flashing and Flag Hoist Display at Darling Harbour.
1pm-1.30pm: Dynamic Diving Display featuring Clearance Diving Team 2 and Seahawk helicopter.
2pm-3pm; Naval Reserve Cadets in rowing events on Darling Harbour.
4pm-5pm: Dynamic Flashing and Flag Hoisting Display

SATURDAY OCTOBER 7;
4pm-4.45pm: "NAVY ON PARADE" at Sydney Opera House featuring RAN Band Concert and Gymnastics Display.
4.45pm-5.25pm: Ceremonial Divisions featuring naval uniforms through the ages, Beating to Quarters and Ceremonial Sunset.
6.05pm: Ceremonial Sunset at Darling Harbour.

SUNDAY OCTOBER 8:
8am: Hoisting the Colours (Huge Australian White Ensign)
11am-12 noon: Band Concerts at Tumbalong Park also featuring Navy Physical Training Instructors.
12 noon-5pm: Minor War Vessels open for public inspection.
12 noon-12.30pm: Dynamic Flashing and Flag Hoisting Display at Darling Harbour.
1pm-1.30pm: Dynamic Diving Display featuring Clearance Diving Team 2.
2pm-4pm: Rowing events featuring Naval Reserve Cadets.
4pm-4.30pm: Dynamic Flashing and Flag Hoisting Display.
4pm-5pm: Band and Gymnastics Display
5.45pm: Ceremonial Sunset at Darling Harbour. ** Note: The Maritime Commander will arrive by Admiral's Barge for this ceremony.

NAVY WEEK – MELBOURNE

1 OCTOBER TO 9 OCTOBER, 1989
PROGRAMME

SUN 01 OCT 89	– 9.30am	– St Augustine's Church Service (Contact Mrs Mill. Ph 459 9035) Colour Party
	– 11.00am	– St Luke's Church Service (Contact Mr Ray Blackshaw, Ph 789 3105) Colour Party, Naval Reserve Band and Naval Reserve Cadets (Contact WO Staples. Ph (059) 83 7279)
MON 02 OCT 89	– 7.30am	– Golf Tournament, Waverley Golf Club (Contact Mr Blease. Ph 354 3658)
TUE 03 OCT 89	– 12.00pm	– VNB Concert, Bourke Street (Contact Band Officer. Ph (059) 83 7237)
	– 6.30pm	– Reception, HMAS LONSDALE (Contact CERBERUS Liaison Officer. Ph (059) 83 7548)
	– 8.00pm	– Ceremonial Sunset - Victoria Naval Band (VNB), CERBERUS Guard (Contact WO Staples, Band Officer) .
WED 04 OCT 89	– 9.30am	– Lawn Bowls, Hampton Bowling Club (Contact Mr Hugh Jones. Ph 800 3473)
	– 5.00pm	– Navy League Yacht Race, Royal Yacht Club of Victoria (Contact Mr John Wilkins, Ph 805 2555)
THU 05 OCT 89	– 7.30pm	– Naval Association Greyhound Race Meeting, Sandown Park (Contact Mr Roy Purdon, Ph 314 7210) Victoria Naval Band performing
FRI 06 OCT 89	– AM	– HMAS DARWIN arrives (Contact LCDR Kops, Ph 697 5989)
	– 7.30pm	– Navy Week Debutantes Ball, LONSDALE Drill Hall, Victoria Naval Band (Contact LCDR A. Kops, XO Reserves (MPD), Chairman (CSO) Ph 697 6474)

Continued on Page 17

NAVAL MATTERS

NAVY CHOOSES MEKO FRIGATES

by A.W. GRAZEBROOK

Following a unanimous Navy and Defence Department recommendation, the Government has decided to make a contract with Amecon to build ten Meko 200ANZ frigates. Under the contract, the Government will have the option to reduce the number to eight ships or increase the number to twelve. This flexibility was necessary to permit the later inclusion of either two or four ships for the Royal New Zealand Navy.

The new ships will be classified FFH

The Meko 200ANZ frigates will be powered by one LM2500 gas turbine and two MTU diesel engines, operating in a combined diesel or gas turbine (CODOG) arrangement.

The ships will be equipped with a gun with an interdiction capability, a point defence missile system, an anti-submarine sonar, fire control system, surveillance radar, target identification radar, command and control (C2) system, torpedo decoy, chaff dispenser and one helicopter.

The hangar and helicopter handling equipment will be able to accommodate the S70B2 helicopters already ordered for Navy's FFGs. However, the type of helicopter to be ordered for the Anzac class has not yet been decided. This will be a reconnaissance helicopter only. It is very unlikely that funds will be available for more S70B2 helicopters whose price reflects their diverse and potent capabilities in the air to surface, anti-submarine and SSGW targeting roles.

The type of gun to be fitted has not been decided. The choice is between the 76mm OTO-Melara gun as mounted in our FFG7s and the 127mm Mark 45 (5 inch) gun – a new version of the weapon mounted on the DDGs. The latter is strongly favoured by Navy and Army, who consider a surface to surface weapon essential for interdiction and gunfire support of troops ashore. The 76mm is primarily an anti-aircraft weapon.

The initial cost of the 127mm is higher than that of the 76mm, but the through life cost of the 127mm gun is so much lower than that of the 76mm gun that it more than offsets the higher initial cost. Further, ammunition for the 76mm is not made in Australia, but that for the 127mm gun is made at Bendigo.

It has been suggested that one solution to the problem is to take advantage of the Meko concept and fit some ships for the 76mm and some for the 127mm guns. The advantage of this is unclear, given that the ships are expected to have a point defence anti aircraft capability provided by the Mark 41 vertical launcher and Sea Sparrow surface to air missiles. The Mark 41 is a versatile launcher, as it can handle Standard area defence missiles as well as Sea Sparrow. The fire control system fitted would have to be enlarged to handle Standard.

The PEAB 9LV453 Mk 3 command and control system has been chosen.

The Thomson Sintra Spherion B hull mounted sonar is expected to be fitted.

Theoretically, subcontractors can still press to have their equipment substituted for equipment listed above. That includes the diesel engines and sonar choices. However, authoritative shipbuilding sources say it is unlikely that major changes will be made other than at Navy's request.

AMECON plans to build and launch up to five ships in Newcastle, and tow them to Williamstown for fitting out. The precise number depends on how many ships, if any, New Zealand decides to order.

A further possibility, mentioned by both Minister Beazley and Admiral Hudson (Chief of the Naval Staff), is that additional Mekos may be ordered for the RAN as successors to the Adams class DDGS.

This is only a possibility at this early stage, and depends upon the capabilities needed for the DDG successors. However, an option would be to adopt the Meko 360 design. This would involve lengthening the hull by one module or 10 to 15 metres to accommodate the larger missile launching capability needed for an area defence SAM system and second helicopter.

Meanwhile, AMECON and their sub contractors must concentrate on concluding the final contract with Government and getting on with building the initial eight Meko200ANZ frigates.

The project cost for these eight ships is A$3.5 billion. If New Zealand decides to buy, she is likely to pay the marginal cost for additional ships. This is understood to be about A$280 million per ship.

A NEW HMAS WESTRALIA

by PETER PLOWMAN

Australia will acquire a second underway replenishment ship as a major contribution to a two-ocean Navy.

Announcing this in July the Minister for Defence, Mr Kim Beazley, said the RAN would lease the RFA APPLELEAF from September 1989 and that the arrangements include provision for purchase after five years. The total project cost is estimated at $30 million.

APPLELEAF will be renamed HMAS WESTRALIA and join HMAS SUCCESS in the vital role of supplying fuel for warships and helicopters.

It will be the largest ship in the RAN and will have a complement of about 60. APPLELEAF can carry over 20,000 tonnes of fuel, including several thousand tonnes of aviation fuel for helicopters. Like HMAS SUCCESS it will be able to transfer fuel to warships at sea while underway.

Acquisition of a second tanker was foreshadowed in the 1987 Defence White Paper.

The tanker will be based at HMAS Stirling on the west coast where it will provide greater flexibility in the deployment of naval ships. Three destroyer escorts are already homeported at Stirling along with three patrol boats, a submarine and a hydrographic survey ship. Additional combatants will be based there from the early to mid 1990s.

The acquisition of APPLELEAF is part of a rationalisation of the afloat support force. To offset the cost of the new tanker, the destroyer tender HMAS STALWART will be withdrawn from operational service, pending a review of its future. APPLELEAF is being acquired from the UK company Jardine Matheson.

APPLELEAF SPECIFICATIONS.

Length (m)	171
Breadth (m)	26
Draft max (m)	11.9
Displacement – full load (tonnes)	40,870
Fuel capacity (tonnes) diesel/aviation	20,000 plus
Refuelling rigs abeam	2
Refuelling rigs astern	1
Manning	60
Launched	1975
Commissioned	1979

BACKGROUND

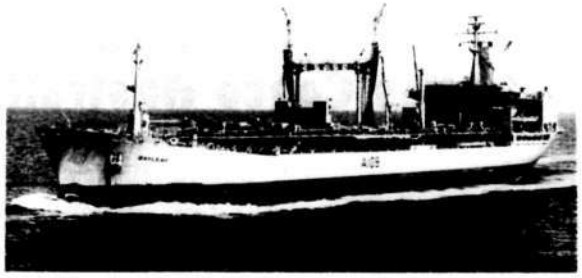
APPLELEAF is also basically a merchant ship which has been in service as an auxiliary with the Royal Navy and is now to enter service with the RAN. The choice of WESTRALIA for the RAN's new tanker homeported at HMAS Stirling underlined the Government's decision to implement the two-ocean Navy basing policy and the self-reliant defence posture called for in the 1987 Defence White Paper. WESTRALIA will be the ninth RAN vessel to be homeported in Western Australia.

The new HMAS WESTRALIA, formerly RFA APPLELEAF.

THE FIRST WESTRALIA

Built: 1929 by Harland & Wolff, Belfast
Tonnage: 8,108 gross/4, 717 net
Dimensions: 448 x 60 ft/136.5 x 18.2m
Service speed: 16 knots
Engines: Harland & Wolff diesels
Propulsion: Twin screws.

Huddart Parker Limited had been one of the most progressive shipping companies in the first decade of the twentieth century, taking delivery of five new passenger liners within eight years. This gave them a dominant position in the Australian coastal trade, and they were also highly competitive on the Tasman trade to New Zealand as well. ZEALANDIA, built in 1910 was one of the most famous of all Australian passenger liners, but after taking delivery of that vessel the company waited almost twenty years before adding to their fleet, apart from the Bass Strait ferry NAIRANA, which was ordered before the war but not delivered until 1921. In 1927 the Huddart Parker liner RIVERINA was lost when operating the service between Sydney and Hobart, which meant the fleet was not able to cover all the routes, so a new ship was ordered for the main service to Fremantle, to allow ZEALANDIA to move to the Hobart service, which had always been operated by older ships. At the same time the Adelaide Steamship Company was finalising plans for a new liner, which would be powered by diesel engines, and Huddart Parker followed their lead in this. The Adelaide Line vessel MANUNDA was built by the Beardmore yard, and had the distinctive motorship look then popular, but most of these ships had come from the Harland & Wolff yard at Belfast. The new Huddart Parker liner, however, although built at Belfast, was designed more along the lines of a steamer, being really just an enlarged version of ZEALANDIA, including the square superstructure and a single tall, thin funnel.



RFA BAYLEAF, sistership of APPLELEAF

A NEW HMAS WESTRALIA CONTINUED

The first HMAS WESTRALIA, fitted out as an armed merchant cruiser.

HMAS WESTRALIA as an AMC

A NEW HMAS WESTRALIA CONTINUED

Work began on the new liner in the middle of 1928, and she was christened WESTRALIA when launched on 25 April 1929, being completed four months later. Departing Belfast on 17 August, WESTRALIA went first to the Clyde, sailing from there the next day on her delivery voyage, which took the liner through the Mediterranean, passing along the Suez Canal on 28 August and calling at Aden on 1 September. She then proceeded directly to Melbourne, arriving on 18 September, and five days later berthed in Sydney. Since the other new motorship, MANUNDA, was already in service, the contrast between the two liners caused much comment. WESTRALIA provided accommodation for 360 passengers in first class, and only 90 in third class, with the result that her internal fittings were on a grand scale. On 28 September WESTRALIA made her first voyage from Sydney to Fremantle, with calls at Melbourne and Adelaide, and unlike most of the other liners on that route, operated to Fremantle all the year. The arrival of the new liner once again placed Huddart Parker at the top of the trade, but seven years later three new and larger liners would be built by other companies. In fact WESTRALIA was destined to be the last passenger ship to be built by Huddart Parker, as the only other ship they added to their fleet afterwards was WANGANELLA, bought second hand. Throughout the thirties WESTRALIA plied between Sydney and Fremantle, managing to retain a share of the market after the three new liners entered service, and when war broke out in 1939 it appeared that she would not be needed for Government service, although most of the other liners were requisitioned. One of the ships to be taken over was DUNTROON, which was slated to be converted into an armed merchant cruiser, but the liner had a long history of engine problems. The Navy inspected the ship and decided she was unsuitable for conversion because of these mechanical faults, and she was handed back to her owners. This left the Navy short of a ship for conversion, and on 2 November 1939 WESTRALIA was requisitioned to take the place of DUNTROON. She was sent to Garden Island in Sydney where the conversion work was done, including the installation of seven 6 inch guns and two 3 inch anti-aircraft guns. Still sporting her black hull and yellow funnel, the ship was commissioned into the Royal Australian Navy as HMAS WESTRALIA on 17 January 1940, and then did her working up exercises along the east coast of Australia. WESTRALIA left Sydney on 28 March for Darwin, arriving on 7 April, and then going on to relieve MANOORA on the Malay Force. En route to her patrol area,

HMAS WESTRALIA off Brisbane in 1944.

1946, prior to reconversion to mercantile service.

WESTRALIA intercepted the Norwegian cargo ship FERNDALE, which was captured and sent to Singapore with a prize crew. In May WESTRALIA was sent to Fremantle, arriving on 28 May, and on 25 June she sailed from there to Colombo to operate with the East Indies Station until December, returning to Fremantle again on 3 January 1941. From there the vessel was sent round to the east coast for patrols in the Nauru area until the end of the year. On 10 December 1941 WESTRALIA boarded 445 troops in Darwin, and joined up with ZEALANDIA to land them at Koepang in Timor on 12 December, returning to Darwin four days later, and then resuming her patrols in the Pacific for most of 1942. Towards the end of the year WESTRALIA was used as an accommodation ship for several months at Port Stephens, north of Newcastle, while the shore training depot HMAS ASSAULT was under construction at Salamander Bay. When this duty ended, WESTRALIA was sent to Sydney, and on 9 February 1943 she was taken to Garden Island to be converted into a Landing Ship, Infantry, having 18 landing craft installed. On 19 May she moved to Cockatoo Island for drydocking and then was re-commissioned on 31 May. Following training at Salamander Bay, the vessel went to Cairns, boarded 1,100 troops, and in company with MANOORA left there on 2 August to arrive at Milne Bay two days later, where the troops landed. For the remainder of 1943 WESTRALIA was used to carry troops from Townsville, Melbourne and Brisbane to Milne Bay, Goodenough Island and Oro Bay, and also spent several weeks in further training at Salamander Bay. Early in December the vessel arrived at Goodenough Island to prepare for her first

A NEW HMAS WESTRALIA CONTINUED

invasion landing, which occurred at Arawe on 15 December when WESTRALIA offloaded 660 American troops in only two hours off the beach, and then steamed to Milne Bay where more troops were boarded and taken to Huon Gulf, where they transhipped to smaller vessels to be landed at Cape Gloucester in late December. WESTRALIA made a second trip to Huon Gulf in January 1944, and on 28 January was on her way back to Milne Bay with no troops aboard when a Japanese bomber dropped a 250 pound bomb which exploded on hitting the water close to the speeding ship, causing some damage from splinters. As a result WESTRALIA was ordered back to Sydney for a refit, arriving on 15 February, and leaving again on 26 February for New Guinea once more. She carried 1,200 American troops for the landings at Hollandia on 22 April 1944, but the next month suffered an unusual accident when the mainmast collapsed, and once again had to return to Sydney for repairs, arriving on 16 May. While at Cockatoo Island she had two Bofors added to her armament before sailing on 3 July to Townsville to pick up more troops to be taken to Bougainville, from where she carried 900 American troops for the landing at Panaon Island in Leyte Gulf on 20 October, after which the ship returned to Bougainville. On 9 January 1945 WESTRALIA was in convoy heading for the landings at Linguyan when the ships were attacked by Japanese bombers, which were driven off by American planes. About 7pm two kamikaze planes appeared overhead, and one dived onto an American aircraft carrier, while the second circled a while longer, then singled out WESTRALIA as its target. All guns on the vessel began firing as the plane plunged down, but at the last moment a hit caused the plane to veer off course, and it crashed into the sea just behind the ship, with the bombs aboard exploding on impact. The concussion knocked a pin out of the steering mechanism

WESTRALIA after her return to civilian duties.

Renamed DELFINO, October 1960 – Photo courtesy David Finch.

and the vessel sheered to port, but within minutes the fault had been rectified. WESTRALIA resumed her place in the convoy, and the next day landed her troops at Linguyen as planned. She then steamed to Morotai to board more troops, landing them at Linguyen on 10 February. Once again WESTRALIA headed back to Australia, this time going to Brisbane, where she arrived on 2 March for repairs to the refrigeration plant, and also to be drydocked from 13 to 17 March for bottom scraping. Near midnight on 19 March WESTRALIA was lying at her berth in the Brisbane River when a fire broke out in No. 4 hold which was located over the ammunition locker, and to prevent an explosion the hold was flooded to extinguish the blaze. After this damage had been repaired WESTRALIA left Brisbane on 31 March going first to Madang and then to Morotai, from where she carried 1,100 Australian troops to the landing at Tarakan on 1 May 1945. On 10 June WESTRALIA landed 1,000 Australians at Labuan in Brunei, and on 1 July landed a further 1,100 Australians on the beach at Balikpapan. She then returned to Australia to collect more supplies and took them to Treasury Bay in the Solomons, where she was anchored when the Japanese surrendered on 14 August. During her career as a Landing Ship, Infantry, the Japanese claimed to have sunk WESTRALIA on three occasions. With the return of peace the vessel became a troopship, being used to bring home Australian soldiers scattered around the Pacific, until she was paid off on 19 September 1946, and work began on refitting the liner. Early in 1947 the work was stopped when the Navy took her over again for nine trips to Japan taking men and supplies for the British Occupation Forces, and then her reconditioning resumed. In 1949 the vessel was taken over yet again, being sent to Suez, from where she made ten return trips to Trieste. Returning to Sydney again in March 1950, her refit was started again, and a year later the liner was finally ready for commercial service, after a twelve year absence. No doubt Huddart Parker realised that business would not be as good as before the war, because the ship was given accommodation for only 264 first class and 80 third class passengers, about a hundred less than before the war. On 27 March 1951 the liner steamed out of Sydney on her first voyage to Fremantle, again spending all year on that route. During the fifties passenger numbers began to decline, and in the winter of 1958 WESTRALIA was taken off the Fremantle route for the first time, being transferred to the route across the Tasman from Sydney to Auckland and Wellington in place of WANGANELLA, which was used for cruises. WESTRALIA returned to the Fremantle trade for the summer of 1958-59, but by then the service was not economical, so on 20 February 1959 she left Sydney on her final voyage, returning on 16 March and being laid up. The vessel was put up for sale, and during 1960 was purchased by Asian & Pacific Shipping Co., a Suva based firm involved in the livestock trade. Still at anchor in Sydney, the liner suffered the indignity of having all her passenger fittings removed and replaced by pens for the carriage of sheep. Renamed DELFINO, now with a white hull, she left Sydney on 1 January 1961 carrying 25,000 live sheep bound for the west coast of America. When they were delivered the vessel returned to Sydney, and was once again laid up, as the venture had not been the financial success that had been hoped for. During 1961 her name was changed to WOOLAMBI, but she remained idle in Sydney until being sold towards the end of the year to Japanese shipbreakers. Early in December her propellers were removed, and on 19 December the tug NISSHO MARU towed the old liner away from Sydney to the scrap yard in Japan.

RAN MINESWEEPING CAPABILITY

By John Mortimer

Historical Perspective

During both the First and Second World Wars offensive minefields were laid off the Australian coast by German merchant ships or raiders. Japanese submarines also laid mines in the Second World War in northern Australian waters. The first offensive minefield was laid by the raider WOLF on 3 July 1917. This comprised a field of 25 mines laid 10 miles off Gabo Island along the coastal shipping route between Bass Strait and Sydney. To counter this threat the authorities requisitioned a number of merchant ships and converted them for minesweeping operations. At least one vessel, and possibly several more vessels, was sunk as a result of this German mining campaign.

One of the initial steps undertaken by Australia in the Second World War was the establishment of a minesweeping force. By the end of September 1939 a total of eight merchant ships had been requisitioned and the sloops SWAN and YARRA modified for minesweeping duties. Also construction was begun on a number of purpose built ships of the BATHURST class for minesweeping and escort duties.

Mining operations by Germany were undertaken by the raiders ORION and PINGUIN and the merchant ship PASSAT. Fields laid during these operations were as follows:

- ORION laid a small number of dummy mines off Albany in 1940;
- PINGUIN laid small minefields between Newcastle and Sydney, in Spencer Gulf and in the approaches to Hobart in 1940; and
- PASSAT laid small minefields in the eastern and western approaches to Bass Strait in 1940.

A total of 230 moored contact mines was laid off the Australian coast by German ships during the Second World War resulting in the loss of three ships totalling about 18,000 tonnes displacement and severe damage to a further ship. Further, operations were planned by the raider KORMORAN employing moored magnetic mines; however, this ship was sunk before any mines were laid in Australian waters.

Offensive minefields comprising some 105 mines were also laid in 1942 by Japanese submarines in the vicinity of Bathurst and Melville islands, astride the shipping lanes servicing the port of Darwin. No ships were sunk by these mines.

In summary, offensive minefields laid in Australian waters during both World Wars were relatively small and placed in port approaches or where shipping movements were constrained, such as in Bass Strait and its approaches.

The Australian response, during the Second World War, was the development of a minesweeping force which eventually comprised 35 auxiliary minesweepers, requisitioned merchant vessels, and 56 BATHURST class vessels (20 of which were built for the Royal Navy). Minesweeping groups were based at ports around Australia with one each at Sydney, Melbourne, Hobart, Adelaide, Fremantle, Darwin, Brisbane and Newcastle.

The peak of minesweeping activity

The Ton class mine warfare vessels operated from 1961, with the last boat HMAS CURLEW, still in use in 1989.

The Ton class mine warefare vessels operated from 1961, with the last boat HMAS CURLEW, still in use in 1989.

occurred in the early 1940s and subsided as the German and Japanese threats diminished. Consequently, mine countermeasures forces were later allocated to other tasks such as protection of shipping or port and harbour defence. The Bathurst class vessels tended to be employed on the former task while port and harbour defence activities were undertaken wholly by auxiliary or requisitioned ships. The nature of operations also altered as the war progressed from clearance of offensive fields laid in Australia's coastal waters and port approaches, to support for Allied amphibious operations and clearance of Australian or Allied laid protective fields.

After the cessation of hostilities the number of minesweepers in service was rapidly reduced. Those that did remain in commission were employed essentially on clearance of minefields mainly in Australian and Papua New Guinea waters, or were employed in a training role. By the mid 1950s the RAN had effectively ceased operation of mine countermeasures vessels.

Australia reacquired a mine countermeasures capability in 1962 when six Ton class minesweepers were purchased from the United Kingdom. Subsequently, two of these vessels were converted to minehunters. These ships were all built in the 1950s and the force has since been reduced to one minehunter, HMAS CURLEW, which is retained in service to support the prototype inshore minehunter (MHI) trials and evaluation.

Geostrategic Background

The Australian Government has indicated that it requires a defence force able to undertake current and foreseeable peacetime operational tasks, deal effectively with the kinds of military pressure that could arise over shorter timescales, and provide a suitable basis for timely expansion to meet higher levels of threat if our strategic circumstances deteriorate over the longer term.[1] In this context, force structure priority is accorded in defence planning to those capabilities particularly relevant to the Australian Defence Force's (ADF) ability to respond to contingencies credible in the shorter term.

Within this planning framework, priority capabilities include maritime forces (including mine countermeasure forces) able to protect shipping in coastal waters and in our focal areas and ports. High priority has been given within Defence to the development of a capable mine countermeasures force that can help ensure the safety of shipping in our coastal waters.

Although the type and number of mines held by countries in our region are limited at present, the availability of mines on the world market means that mine stocks could

HMAS SHOALWATER, is one of two MHCAT in commission in 1989.

be built up relatively quickly. Laying platforms are also readily available; conversions to existing aircraft, ships and submarines could be relatively quickly accomplished. Recent developments in mine technology also make it difficult to accurately assess a possible adversary's mine stocks or capabilities. For example, bombs can be converted to ground mines by means of small conversion kits or old mines fitted with state of the art sensor packages to improve the effectiveness of their firing mechanism. These factors indicate that the timescales required for a potential adversary to acquire or upgrade a mining capability could be short. It also has implications for Australian maritime forces and places importance on their ability to rapidly expand in order to respond effectively to any emerging threat.

As an island nation, Australia's surrounding maritime areas are of particular strategic importance. Significant general cargo and mineral tonnages are carried by coastal shipping, while many resource extraction facilities and population centres in the more remote north and north western areas depend heavily on maritime support.

Routes and offshore resource extraction activities are susceptible to mining to various degrees, and the closure of even a limited number of these areas could have substantial political, economic and defence effects. This impact could well extend beyond the immediate loss or damage to shipping. For example, disruption of the flow of petroleum products could have a serious impact on the manufacturing and services sectors of the economy as well as influencing defence force activities and their logistic support.

An adversary could lay mines in Australia's maritime approaches using aircraft, surface ships or submarines. While the reach of most aircraft is relatively limited, ships and submarines could lay mines anywhere on the Australian coastline. There could be risks of detection, however, increased by the presence of ADF surveillance and patrol forces and the exposure of the laying platform to Australian countermeasures which could inhibit the undertaking of such widespread operations.

In low and escalated low level conflict an adversary is more likely to conduct operations in those geographic areas which would enable him to achieve his aim with the least risk and minimal resource implications for his own forces. As the transit time for most platforms to get into position to lay mines increases, the probability of detection and reaction by ADF forces also increases. Hence an adversary could be expected to prefer operations which are proximate to his operating bases. This implies a likely preference for northern rather than southern Australian waters.

If, however maximum political impact is a major objective of an adversary, then the south eastern population centres such as the Sydney area might be preferred. This would incur a substantial increase in the resources required to lay the mines, a lengthy period between any replenishment of the field and increased risks of detection and neutralisation of the laying vehicle. For these reasons, mining of southern Australian waters is assessed as unlikely except in more substantial conflict. However, the possibility of mines being laid in these areas, while still remote, cannot be discounted.

In planning mining operations an adversary would have to assess the balance between the level of effectiveness of the

[1] Department of Defence 'The Defence of Australia 1987', Australian Government Publishing Service, Canberra 1987, Paragraph 3.51.

minefield and the acceptability of risk to the laying platform. In the postulated credible levels of conflict in the Government's policy information paper "Defence of Australia 1987", where the objectives of an adversary are judged as likely to be essentially political, the primary aim of the minefield might be directed more towards creating an inconvenience for Australia rather than sinking a number of ships. In such circumstances an adversary might only deploy small numbers of mines and is likely to place a high emphasis on containing the level of risk to his laying platforms. This would be of overriding importance if the operation is to be non-attributable. In such circumstances it is likely that an adversary would focus his mining operations in open water port approaches and choke points on coastal shipping routes, rather than in confined waters and harbours where the laying platform would be exposed to greater risk of detection and interdiction.

An adversary might also attempt to complicate Australia's mine countermeasures task by exploiting our geography and laying mines in dispersed areas. It could also be complicated by declaring paper minefields (ie declaring minefields in areas where none is laid) or by laying dummy mines as occurred off Western Australia during the Second World War.

In summary, the postulated threat in credible shorter term contingencies is likely to be in tens rather than hundreds of mines and concentrated in Australia's northern maritime approaches, but possibly occurring in widely dispersed areas. While the remoteness of Australia's major southern ports affords some protection, these ports are essential for national prosperity and appropriate mine countermeasures for them would also be important.

The extent of Australia's maritime approaches indicates the importance of being selective in both the level and nature of capabilities to be acquired and in the allocation of limited resources. This implies that if Australia were to follow the overseas approach to mine countermeasures, which is essentially one of highly capable vessels with attendant high costs, then only relatively few areas could be cleared concurrently. The Australian approach to mine countermeasures seeks to avoid using expensive overseas solutions and to exploit new or innovative approaches which offer appropriate capabilities for our particular strategic circumstances.

Mine Countermeasures

Mine type and the environmental characteristics of a particular sea area have a dominant influence on the most appropriate form of mine countermeasures to be employed to effectively counter a threat.

The most recent aquisitions have been the COOP vessels, including KORAAGA, SALVATORE V and WAVE RIDER – Photo courtesy John Mortimer

KORAAGA. – Photo courtesy John Mortimer

Because of the significant environmental variations which occur in Australia's coastal waters and shipping routes it is important that our mine countermeasures forces have capabilities for minehunting, minesweeping and clearance diving. A number of clearance diving teams are presently in service with the Royal Australian Navy and the Navy Reserve. Development of a minehunting capability is being progressed in the context of the Bay class inshore minehunters (MHI). Two prototype MHI's (HMA Ships RUSHCUTTER and SHOALWATER) are presently undergoing test and evaluation. Depending upon the results of these trials a further four MHI are planned to be acquired.

A number of Australian mine countermeasures initiatives are currently in progress, including:

- trial and evaluation of two prototype inshore minehunters;
- development of a concept which utilises civilian craft of opportunity (COOP) to meet the minesweeping task,
- trials and evaluation of Defence Science and Technology Organisation developed sweeping and degaussing systems,
- development of a surveillance system utilising side scan sonar,
- development of a side scan sonar system for deep water mine location and a deep wire trawl for mine disposal, and
- examination of utilising drone boats for a precursor minesweeping capability.

Evolution of the Royal Australian Navy's COOP Concept

Minesweeping techniques use either influence or mechanical (wire) sweeps, or a combination of both. Influence sweeps are designed to simulate a ship's magnetic and acoustic signature in order to explode the mine, whereas mechanical sweeps are designed to cut the mooring cables of buoyant mines so they float to the surface

RAN MINESWEEPING CAPABILITY – CONTINUED

where they can be destroyed or sunk. All sweeps are towed astern of the minesweeping vessels, although normally only one technique can be used at a time.

The nature of the mine countermeasures force to succeed that provided by the six Ton class vessels has been under consideration in the Department of Defence since the late 1960s. Both single role and dual role vessels have been canvassed. Navy's initial proposal was for three of the Royal Navy's Hunt class vessels which were then under development. Between 1970 and 1974 the cost of the Hunt class escalated while the production program slipped. Eventually Navy was requested to examine other solutions. This resulted in a proposal that the future mine countermeasures force should comprise French Circe class minehunters, United States Navy minesweeping boats and ocean minesweepers. An alternative solution was a lower cost but higher risk option based on the Inshore Minehunter and the same range of minesweepers. These options were raised in the context of a study by Navy in 1974 which addressed the relative capability and other implications of acquiring a conventional minehunter compared to a smaller vessel equipped with a minehunting system identical to that fitted in the larger craft.

The study examined the option of acquiring three conventional minehunters or eight smaller craft (MHI). The principal advantages of the smaller craft were seen to be: a much reduced project cost; an ability to provide a minehunting capability at all Australian ports more quickly; likelihood of increased Australian industry participation; and reduced manpower requirements. The main disadvantages were seen to be that: the vessels would require more operational support; they would have less seakeeping ability and deployment time would be extended; there would be a delay in the development of an operational capability; and there would be increased technical and financial risks. On balance it was considered that the potential advantages of the MHI were sufficient to justify proceeding with that option.

The decision to proceed with the MHI had some effect on the minesweeping capability and its development. In particular it indicated a higher priority for minehunting than minesweeping and also the relatively limited specialist manpower resources tended to be allocated to the MHI project. Interest in minesweeping was regenerated in 1977 when the project was activated. Initially attention focused on variants of overseas mine countermeasure vessel designs and there was some preference for the Federal Republic of Germany's TROIKA unmanned drone influence sweeper concept. An increase in cost and

WAVE RIDER – Photo courtesy John Mortimer

doubts as to some of its operational capabilities in Australia's environment resulted in the TROIKA option being discarded in 1978.

By 1980 Navy's proposals for a mine countermeasures capability were based around the MHI for inshore minehunting, a mine countermeasure catamaran for inshore minesweeping and an ocean minesweeper for offshore minesweeping. In reviewing these proposals some misgivings were expressed within Defence and it was decided that a comprehensive review of mine countermeasures be undertaken.

During 1981 an evaluation of contending minesweeper designs was undertaken by Defence. Ships evaluated were the Hunt class, the German MB-J-50, the French/Dutch/Belgium Tripartite, the Italian Lerici and a British Vosper Thornycroft 47 metre design. Of the vessels examined only the Hunt class was in service and not surprisingly it was preferred.

On 19 October 1981, the Government agreed that a commitment be made for the acquisition of two Hunt class mine countermeasures vessels and associated equipment at a cost of $219m (August 1981 prices). This decision followed an unsolicited offer by Vosper Thornycroft with MOD (UK) agreement for the sale of two vessels then building for the Royal Navy. By March 1982 the Defence Program was experiencing severe financial pressures resulting, inter-alia, from the aircraft carrier and related aircraft proposals. It was in the context of these pressures that the then Minister for Defence concluded that he was disposed to remove the acquisition of Hunt class vessels from the program altogether and asked that cheaper alternatives be explored. It was also acknowledged that one consequence of this decision would be a somewhat longer gap in MCM capability.

An Invitation to Register Interest in providing a minesweeping capability for the Royal Australian Navy was issued on a world wide basis in June 1983. The range of responses was very broad and canvassed many approaches including aircraft of various types through to conventional vessels. The responses revealed that there was no proven overseas design available nor any which offered significant attraction at acceptable cost, consequently this process was not pursued further.

The Mine Warfare Group at the then Royal Australian Navy Research Laboratory (RANRL) had a close involvement with the development of the minesweeping requirements and between 1972 and 1983 produced a series of studies. A constant theme through their work had been the advocacy of two complementary types of vessels to meet the assessed mine threat, namely:

- small magnetically and acoustically safe vessels in shallow inshore waters; and
- larger vessels with less stringent magnetic and acoustic signature constraints for operations in deeper waters.

Concurrently, RANRL had been developing a new type of influence sweep based on a innovative permanent magnet design, known as a dyad, coupled with a pipe noise-maker. This influence sweep offered the advantage that, unlike conventional influence sweeps, it did not require electrical power to be supplied by cable from the towing vessel. Therefore, any craft with an acceptable acoustic and magnetic signature could be used to tow the sweep.

The problem of the unacceptably high cost of a purpose built minesweeper for Australia and the COOP solution offered by RANRL's sweep development came together in 1984.

Three different classes of COOP vessel are envisaged:

RAN MINESWEEPING CAPABILITY – CONTINUED

- small wooden hulled fishing boats (ie. 18-24 metres long) which are capable of towing the small influence sweep (Sweep Bravo) and wire sweeping;
- large steel hulled fishing boats which are capable of wire sweeping in open ocean conditions; and
- steel hulled tugs which have the bollard pull capacity to tow the large influence sweep (Sweep Mike).

The initial phase of the minesweeping project was approved in the context of the 1985-86 Budget at a cost of $5.48m (April 1985 prices). This phase included COOP trials, design development of alternative purpose built minesweepers, trials of magnetic and acoustic sweeps, degaussing (magnetic signature reduction) trials, and studies to determine whether the MHI could provide a contingency minesweeping capability using the RANRL developed or conventional sweeps. This phase also included departmental studies into the most appropriate means of providing a precursor sweeping capability (ie. the sweeping by relatively safe means of sensitive mines that might be specifically targeted against mine countermeasures vessels).

The main options examined for the provision of a precursor sweeping capability were helicopters and drone boats. Some preliminary trials were undertaken with the RAN's Sea King helicopters but this option has subsequently been dropped in preference for a drone boat solution.

At this time the major issues to be clarified were: whether the RANRL sweeps would work; if suitable vessels for conversion were readily available; and it was unclear if COOPs could be made magnetically safe. Since that time the RANRL influence sweeps have been successfully developed and it has been shown that magnetic signatures of COOPs can be reduced to an acceptable level using a new degaussing technique developed by RANRL. A data base has also been compiled of craft in the Australian fishing industry and their potential suitability for conversion to auxiliary minesweepers.

Two types of mechanical sweep have been developed to sweep the mine moored close to the sea bed (rising mine) and the conventional contact mine moored close to the surface. Successful concept proving of the sweeps has been completed and improvements are now being tested. Australian commercially available equipments have been used in the development of these mechanical sweeps.

The COOP concept is not new and, as mentioned earlier in this paper, modified merchant ships were used in the minesweeping role during the First World War. The United States of America , United Kingdom and a number of European navies have active COOP programs. These overseas programs are in addition to the mine countermeasures effort provided by purpose built vessels. An essential difference with the Australian concept is that the COOP concept forms an element of the force in being as well as providing an expansion capacity.

The COOP concept, as envisaged in 1985, was based on operating a number of craft that would be chartered for a period and then returned to their owners. Manning of vessels was planned for both the RAN and RANR. Separate groups of the RAN chartered element were to operate on the east and west coast, based at HMAS WATERHEN and HMAS STIRLING. These elements were also planned to visit appropriate Reserve locations to conduct annual mine countermeasures training. It was envisaged that additional COOP would be chartered as required for shorter periods for RANR training. Commercially available equipment is planned to be used to the maximum extent practicable and the Australian Uniform Shipping Law Code is to be the baseline for manning, safety and survey requirements.

A number of fishing boat charters were arranged in 1986 and 1987. The chartered vessels were required in order to tow the minesweeping equipments being developed and also to trial a prototype side scan sonar route surveillance system. Difficulty was experienced in extending a charter and procedures were initiated in 1987-88 to charter a replacement vessel. During this process the Department of Transport's MV LUMEN was being declared for disposal and it was arranged for Navy to purchase this vessel for $400,000 on 2 February 1988. The vessel was renamed BROLGA in memory of a First World War trawler which was requisitioned by the RAN for minesweeping duties.

The requirement for an interim minesweeping capability was recognised as a pre-requisite to the development of the force in being. This interim capability was approved by Government in the context of the 1987-88 Budget. Planning for this phase involved the purchase or lease of three vessels, acquisition of appropriate minesweeping equipment, and posting of personnel to HMAS WATERHEN in the period January – April 1989, to conduct further trials. A limited operational minesweeping capability is also planned to exist from about mid 1990.

Apart from the operational evaluation of mine countermeasures equipments the development of an interim capability provides an opportunity to examine the following practical aspects of the COOP concept: acquisition, deployment, victualling, maintenance support, command and control, and personnel related issues.

A request for Tender for three small COOPs was issued in July 1988 and closed on 17 August 1988. Only six fishing vessels were offered and four short listed vessels were inspected before three were recommended. Contracts were signed for the purchase of GROZDANA A and the lease of SALVATORE V and WAVE RIDER on 2 February 1989, 17 February 1989 and 21 February 1989, respectively. The three ships were progressively delivered to HMAS WATERHEN between 16 February and 17 April. GROZDANA A has since been renamed KORAAGA, after an auxiliary minesweeper employed by the RAN during the First World War.

The process took some 12 months to implement and despite the fact that several hundred fishing vessels are employed around the Australian coast there appear to be indications that acquisition of additional wooden hulled fishing vessels in peacetime for the force in being will pose some difficulties. Further, a survey of the Australian fishing industry has confirmed that suitable vessels exist for both the small and large COOP roles, however wooden hulled vessels larger than about 18 metres

The first auxiliary minesweeper, acquired since 1939-45, BROLGA, with the SALVATORE V, in February, 1988 – Photo courtesy John Mortimer

RAN MINESWEEPING CAPABILITY – CONTINUED

overall length are relatively scarce and are not being replaced.

While project planning for the COOP has included provision for tugs to tow the large influence sweep this phase is being accelerated following difficulties experienced in Melbourne when commercial tugs declined to provide assistance in berthing HMS ARK ROYAL in October 1988. Consequently, a Request for Tender was issued in early 1989 for the acquisition of two ocean going tugs to undertake mine countermeasures and berthing assistance roles. Tenders have been invited both for the purchase of existing vessels or the construction of new tugs in Australia.

Several developments have occurred to the COOP concept since it was originally devised by the RAN. These changes have resulted from experience gained through the procurement and trials processes and certain parallel investigations of craft availability and other issues. This process has been evolutionary in nature and is likely to continue in this manner for some time.

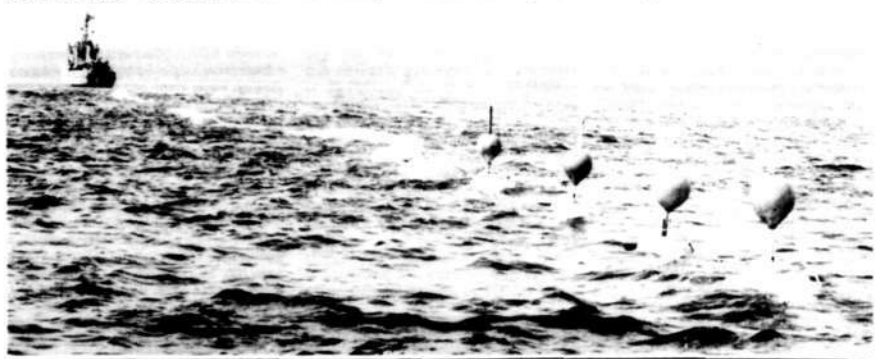
The notion of short term leasings from the fishing and tug industries seems most unlikely to provide a viable solution to the needs of the force in being. Therefore, it is now planned to acquire a number of vessels to equip the force in being and for Reserve training. Links between the RAN and RANR would also be closely integrated and there would be a regular series of exercises conducted involving both elements.

While it has been acknowledged that the limited stowage and accommodation space of COOPs, particularly the smaller fishing vessels, imposes restrictions on their ability to deploy over long distances such implications can be alleviated to some extent by utilising civil infrastructure to the maximum extent and by deploying support elements. In this context it is envisaged that in time of emergency vessels would be taken up from the area to be cleared and minesweeping equipment and support would be deployed.

Training of personnel to support COOP operations has involved the development of new techniques which can effectively meet the diverse requirements of both the RAN and RANR. Present intentions are that basic training will be provided at the Mine Warfare School at HMAS WATERHEN and thereafter RAN and RANR personnel will train in dispersed locations on a computer based system.

In summary, the Australian COOP concept aims to develop a minesweeping capability which is relevant to our particular strategic and geographic situation. It recognises the vast potential area of our maritime approaches and the relatively finite resources, both financial and manpower, that can conceivably be devoted to Defence efforts. The concept aims to avoid using expensive conventional overseas solutions and to exploit new or innovative approaches which provide adequate capabilities for contingencies credible in the shorter term and have the flexibility to meet tasks arising at a greater number of locations, for any given cost. Trials to date have confirmed the validity of this approach though in instances it has been necessary to modify some details of the concept. Particular emphasis has been placed on Australian sourced and commercially available equipments and technologies.

HMAS CURLEW during Sweep Mike Towing Trials in March 1989 – Photo courtesy John Mortimer



Letter to the Editor . . .

"THE NAVY"

Dear Sir,

Re G. K. Andrew's article on the April/June issue "Royal Australian Tugs" and L. K. Wood's in July/Sept issue "View Point".

L.K. Wood was correct in that it was the "Heros" and not the "St Giles" which recovered the "Sydney's" carley float. This float is in the War Museum in Canberra. Nobody has ever satisfactorily explained the machine gun bullet holes in this float (remembering how far apart the ships were), nor the discovery of Japanese milk bottles recovered from the "Kormoran" lifeboats!

For L. K. Wood – the "St Giles" and "Heros" were sister ships; I believe there were 13 built and they were all named "St (something)". They finished up all over the world (two to Australia).

For G. K. Andrews – I DO NOT THINK THE "Heros" was the "St Erthe". I can remember in 1943 reading the name "St Ives" on the bell attached to the forward mast. "St Ives" is said, so I think this must have been "Heros" original name.

We have a lot of Navy Associations, Cruisers, Destroyers, Corvettes etc, I think it;s about time we had a Navy Tugs Association, what do you think Mr Editor!

Details of:

	"HEROS"	"ST GILES"
Built 1919	382 tons	1919 380 tons
Com RAN	12.1.40	15.1.40
Returned	13.8.42	18.5.42
Re-Com	25.2.46	2.8.45
Paid off	12.2.46	11.3.46
Returned	5.11.47	4.6.47

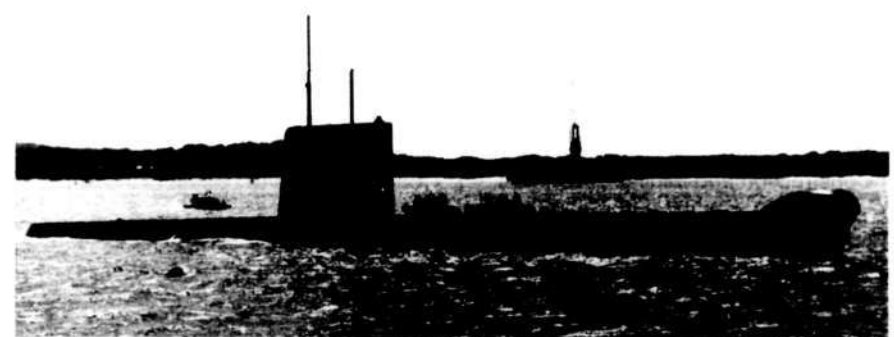
Two 3 fire boilers – triple expansion steam engine.

I do believe these facts to be correct. I hope so!

Regards,
R. TUNBRIDGE
Lake Heights 2502
(Ex Stoker on "Heros")

FROM THE WEST (FROM NAVY PR-WA)

A rare view of the submarine wharf at HMAS STIRLING with HMAS OXLEY, the survey ship HMAS MORESBY and the two DEs, HMA Ships STUART and DERWENT.



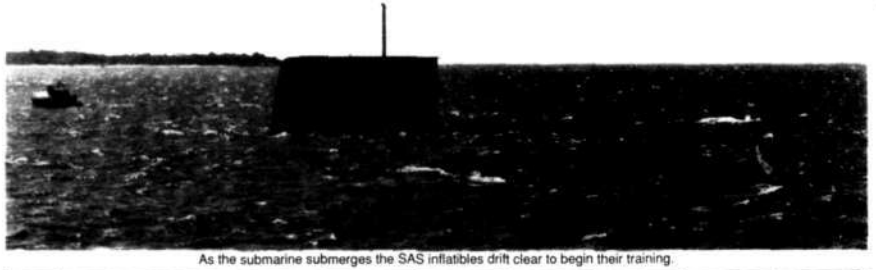
HMAS OXLEY exercising with Army SAS personnel in late 1988.

NAVY WEEK – MELBOURNE (Continued)

SAT 07 OCT 89
- 10.30am – Rehearsal Seafarers Service
- 12.00 pm – VRC Navy Race Day, Flemington
Victoria Naval Band performing
- 1.00pm to 4.30pm – Ship open to visitors
- 7.30pm – Harness Racing - Navy Cup Meeting
Mooned Valley Victoria Naval Band performing

SUN 08 OCT 89
- 10.30am – Seafarers Service at St Paul's Cathedral
(Contact CAPT Pat Blamey. Ph: 870 7545 (H) 611 1627 (W)
- 1.00pm to 4.30pm – Ship open to visitors
- 2.30pm to 3.30pm – Shrine Commemoration Service
(Contact CAPT Peter Richardson. Ph: 882 4450)
Naval Reserve Band AWE party and buglers
Platoon of Naval Reserve Cadets
- 4.00pm – Navy Week Re-assembly – HMAS LONSDALE
(Contact Mr John Anderson. Ph: 889 4086)
Naval Reserve Band performing

MON 09 OCT 89
- AM – HMAS DARWIN departs
- Operation Navy Blue with Naval Reserve Cadets
(Contact Command Public Relations Officer
Ph: 697 4478, 697 6230)
(Contact LEUT Hewlett. Ph: 647 8239)



As the submarine submerges the SAS inflatibles drift clear to begin their training.

ANNUAL GENERAL MEETING 1989

NOTICE is hereby given that the ANNUAL GENERAL MEETING of the NAVY LEAGUE OF AUSTRALIA will be held at The Navy Club, 26 Marine Terrace, Fremantle, WA, on Thursday, 17th November, 1989, at 7.30pm.

BUSINESS

1. To confirm the Minutes of the Annual General Meeting held in Canberra on Friday, 11th November, 1988.
2. To receive the report of the Federal Council, and to consider matters arising therefrom.
3. To receive the financial statements for the year ended 30th June, 1989.
4. To elect office bearers for 1989/90 as follows:
   (a) Federal president
   (b) Federal Vice-Presidents (3)
   (c) Auditor

Nominations for these positions are to be lodged with the Hon Secretary by 30th October, 1989

BY ORDER OF THE FEDERAL COUNCIL

9 CULLITON ROAD, CAMBERWELL, VIC 3124 — **R.M. BLYTHMAN** *Hon Federal Secretary*

BUFFEL – IRON CLAD RAM

Story and Photographs by GEOFFREY BEWLEY

The CSS Virginia brought in the age of the ironclad ram when she sank the USS Cumberland at Hampton Roads in 1862. She started a fashion in warship design which didn't really die out until the First World War. In that 50-year span, nearly every major warship was built with a ram bow.

Battleships were designed for fleet actions like cavalry charges, where they'd attack head on in line abeam. Smaller ironclads were designed specifically as rams, with gun armament secondary or absent. The Dutch ram Buffel was one of them.

There aren't many survivors now of the fleets of Queen Victoria's age, but Buffel is one. In the first half of this century, the Dutch showed themselves reluctant to cast away their obsolete warships. The turret battleship Koning Der Nederlanden, launched in 1874, was serving as a depot ship when she was scuttled at Surabaya in 1942. Other veterans of the last century saw active service as German floating batteries during the Occupation.

The Dutch modified Buffel into an accommodation ship, and she survived as a hulk until the 1970s. Then she was saved for a museum ship, and now she's still afloat, looking her old self again, moored in a dock basin at Rotterdam. She's one of the most interesting naval relics in existence.

"Ironcald ram" sounds quaint and comic now, but in her day Buffel was an advanced design. Ramming tactics appealed greatly to naval thinkers for a couple of decades. There was a lot of evidence in their favour.

In the American Civil War, both sides were keen on ramming. At Hampton Roads the Virginia and the USS Monitor each tried to ram the other. The CSS Albemarle rammed and sank the gunboat USS Southfield. The Confederates had the rigged seagoing ram Stonewall built in France. In Europe, in the Seven Weeks' War of 1866, the Austro-Hungarian and Italian ironclad fleets met at Lissa. The Austrian flagship Ferdinand Max rammed the Italian ironclad Re d'Italia, which sank like a stone with two-thirds of her crew.

This was ramming's biggest boost. Ramming enthusiasts pointed out that big guns then were slow-firing and inaccurate, and readily foiled by armour plating. Virginia and Monitor hadn't hurt each other much. In 1864, it had taken a whole fleet to fight the Confederate ironcald Tennessee to a standstill at Mobile Bay. At Lissa, casualties in the surviving armoured ships had been very light.

BUFFEL in the dock basin at Rotterdam, surrounded by other old Dutch craft. Her original waterline was roughly the top of the red stripe along her hull. Note the fairly modest, safe proportions of her business end.

BUFFEL's rather nicely shaped stern. Old-fashioned gilt-painted quarter gallery windows, auxiliary helm on poop. More or less clear flush deck, but for funnel, turret, sketchy bridge, hatches.

Ramming's opponents pointed out that lots of other ships at Lissa had tried to ram and failed. The Re d'Italia had bought it because she'd been momentarily dead in the water, a sitting target. Successful ramming attacks were only possible in a confused close-quarters action, and then they'd probably be the result of luck rather than skill.

Meanwhile, new seagoing ironclads were given ram bows. That didn't cost much, after all. Purpose-built ironclad rams were small, with few guns and small crews, so at least they were cheap. Big navies built them as experimental additions to their fighting strength. Small navies bought them because they couldn't afford anything more impressive.

In the ironclad era, the Dutch navy was rather small. It had never recovered its strength after its defeat at Camperdown in the French wars. Now it settled for a force of coast defence ships for home service and unarmoured cruisers to police the East Indies. In the 1860s the Dutch rebuilt a 2800-ton screw frigate as a small broadside ironclad, and they ordered a 3400-ton rigged turret ship from Lairds in Britain.

Buffel was one of the first of more than a dozen small rams and monitors added to the fleet in the 1860s and 1870s. Her sister, Guinea, was built at Amsterdam, but Buffel herself was ordered from Napier at Glasgow. The Dutch yards then were new to iron shipbuilding. Napier's yard had already produced several more or less successful ironclads, including HMS Black Prince, HMS Hector, and the Danish turret ship Rolf Krake. The Dutch navy wanted the benefit of the latest British practice.

Only a handful of purpose-built rams had yet been delivered. The Royal Navy had the rigged HMS Pallas. Stonewall was sold to Japan, and a sister to Prussia. The French had just built the stubby turtle-decked Taureau, and laid down four improved versions. None of these were turret ships.

When Buffel was laid down in 1868, most existing turret ships were American monitors left over from the Civil War. They had

BUFFEL – IRON CLAD RAM – CONTINUED

clumsy Ericsson turrets and freeboards best measured in inches. They were slow, unhandy, and liable to sink in bad weather. The Royal Navy had two coast defence turret ships. The Italians and the Danes had one each. The Russians were building others.

The value of the turret was as hotly debated then as the value of the ram bow. On the one hand, they allowed bigger guns to be carried more easily, they gave wider fields of fire, they reduced the ship's silhouette so that less or thicker armour could be used. On the other hand, their weight meant they couldn't be carried high above the water, so turret ships had to get by with reduced freeboard and reduced seakeeping ability.

Masts and rigging restricted the arcs of fire of the turret guns, but a square rig was still obligatory for a seagoing ironclad. Obviously, Buffel wasn't as seagoing as all that. She was meant for short-range work close to the Dutch coast. Nonetheless, she was designed to carry an impressive brig rig.

In theory, turret guns with wide arcs of fire were especially valuable on a ram. They could readily engage the enemy ship ahead, being rammed. In practice, it was feared, a turret might be disabled by the shock of ramming. Buffel's turret was placed well aft, just forward of amidships, as far as possible from the danger zone, and where its shooting would be least affected by the ship's motion.

Ramming enthusiasts argued among themselves over the best design for a ram bow. A long jutting beak would readily penetrate the enemy's hull, but then it might be wrenched askew, starting leaks, or it might become trapped, so the doomed ship took the ram down with her. But a tall, steep, slightly curved bow might chop a tall gash in the enemy, then disengage without trouble.

But a tall bow needed a big ship to wear it, making a big target. A ram needed to be short and handy to outmanoeuvre its target. It also needed to be low in the water, to make a small target for the enemy's guns. Finally, the long, jutting sort of bow gave any ship a fine, speedy, aggressive look.

Buffel's designers avoided extremes. The tall brig rig didn't get any farther than the builder's model, and she would up looking like a derivative of the USS Monitor, single turret, conning tower and funnel, with two pole masts and an extra deck's worth of freeboard all along. Her bow's profile was a swelling curve, not a jutting beak. Her 8 or 9 feet of freeboard was excellent for a turret ship of her size.

She was just over 200 feet long, with a beam of 40 feet and a maximum draught of 16 feet 3 inches, and she displaced just under 2300 tons. Her Dutch-built sister, Guinea, was 100 tons heavier and drew 6 inches more.

She was too small and high in the water to carry thick armour all over. But she had a 6-inch belt along the waterline, with 8 inches on the turret and on the turret trunk inside the hull. This was generous for a ship her size, by the standards of the day. The British ironclad Penelope, twice Buffel's size, had 6 inches on the waterline and 6 inches over her broadside battery.

Buffel's turret held two 9-inch 12-ton Armstrong muzzle-loading rifles, firing 254-pound shells theoretically capable of penetrating more than 11 inches of wrought iron at point blank range. She also carried four 4.7-inch short Krupp breech-loaders, two a side on the main deck amidships, for no very clear purpose. They were too close to the waterline to be much use in a seaway, and they were too small to do much damage to an armoured enemy. Nor would they bear ahead, where a ram's enemy was most likely to be found. A single gun on the upper deck aft would have been better value.

She had twin engines and twin screws, with 2000 indicated hp for 11.5 knots. This was hardly fast enough to keep up with most contemporary ironclads, never mind outmanoeuvring and ramming them. Her bunkers held 150 tons of coal, giving enough range for coastal service. Lack of speed was a common fault of ironclad rams. Designers built them short and handy, and tried to make them fast enough by improving the ratio of horsepower to displacement.

Looking forward from the auxiliary helm. Nothing much in the way of upper works.

They nearly always failed.

Buffel's performance wasn't exciting even by these moderate standards. Her length to beam ratio of about 5 to 1 wasn't bad for a ram. But the French Belier class, half as big again, with a length to beam ratio of only 4 to 1, reached 12 knots with only 1800 ihp.

Long hindsight suggests that ironclad rams were a doubtful operational prospect, and that the Buffel wasn't an awfully successful example of the type. This wasn't so obvious when she was built, of course. It became more obvious when she got into trouble in heavy weather on her delivery voyage across the North Sea. Her officers considered she was dangerously unstable, because of the weight of the turret high in the ship.

They may have been exaggerating from lack of experience with ships of her kind. On the other hand, they may well have been right. In any case, that appears to have been her biggest adventure. In Dutch service she led a very quiet life. The Dutch navy wasn't going to see action in European waters until 1940.

She had a crew of 117 officers and men. Her list shows the captain, 6 other officers, 2 cadets, 22 petty officers, 37 seamen, 9 boys, 5 engineers, 2 assistant engineers, 17 stockers, a petty officer of marines, 13 marines, a piper and a drummer. It was a first class ship's complement in miniature. The Dutch navy may have kept up the division between deck and engineer officers for longer than most.

After some years of service, Buffel's gun armament was updated. The 9-inch muzzle-loaders were replaced in the turret by a single Krupp 22-calibre 11-inch breech-loader. The 4.7-inch guns were removed, and four 1-pounder quickfirers and two 1-pounder revolvers were mounted on her upper deck. Apparently torpedoes were never fitted.

Buffel was never really fast enough to look like a useful ram, and her deep draught made her an unsuitable defender of the Dutch coast. She was finally taken off the effective list in 1896, and converted into a floating barracks.

This conversion was a thorough job. Her guns and turret were removed, her engines and boilers were lifted out and the 8-inch armour was stripped from her hull. This reduced her draught by more than a third. Then an extra deck was built up all along her hull, pent-roofed, so she looked like a giant houseboat or a Noah's Ark. Accommodation and facilities for a couple of hundred seamen were fitted inside. Only the officers' cabins, right aft, were left untouched.

Between 1896 and 1920 Buffel was used at Hellevoetsluis, on the coast west of Rotterdam. In later years she was towed round to *various other moorings. Even as a barracks she became less and less* useful, and she was put up for sale to scrappers in 1974.

However, by then ship lovers had become interested in saving and restoring floating relics. Dutch ship lovers, many in number, rallied and protested. Then the city of Rotterdam took her over, and charged the Prins Hendrik Maritime Museum with her reconstruction.

BUFFEL – IRON CLAD RAM – CONTINUED

This was a big job. She couldn't be returned to her original condition, since her engines and guns had disappeared long ago. But the barracks tophamper was cut away and her upper deck was rebuilt to its original appearance, with a light dummy turret, a dummy funnel and a replica conning tower and bridge. Her simple rig presented no problems.

Now she's tied up in a basin off Rotterdam's Churchillplein, a mile or so from the central railway station. She looks just as she must have when she was tidied up after her delivery voyage, black hull, buff funnel, gold leaf around the ports aft. Only her waterline has changed. She's still free of a great weight of armour, guns and machinery, so she shows more than 6 feet more of her sides now.

Several of the officers' cabins aft have been kept in their original order. The forecastle still contains a big washroom from her barracks days. The rest of the inside has been made into a museum, with marine engines, model ships and guns, pictures, plans, maps, a small video theatre and a snack bar. One model shows the heavy brig rig she never received, another shows her as completed and as she looks now.

On the upper deck, Buffel's steering looks like another weak point in the design. There's a single wheel right aft, on a raised black grating, completely exposed to the weather as well as to shot and shell. In fact, this is the auxiliary steering position. The proper wheel was originally amidships, below decks, but it was taken out in 1896. The original plans have been lost, and nobody could reconstruct the original linkage.

The light exposed bridge was the captain's normal post. The engine-room telegraph was by the binnacle, with speaking tubes to the engine-room, the helmsman and the turret. In action the captain was supposed to go down to the conning tower, a cramped armoured cylinder the size of a public lavatory, out of the way behind the turret.

The turret is an obvious dummy, planked all round. it would look better covered with light plating. The conning tower is thin metal, not armour, of course. There's a hand capstan on the long forecastle to work the anchors. When Buffel was launched, steam power hadn't travelled far from the engine room.

Buffel's historical value to us is general rather than specific. On the one hand, her career was utterly undistinguished. She exchanged no shots, her ram remained unblooded, no Dutch Nelson died on her deck, no Gridley fired.

On the other hand, she gives us an insight into the technical concerns of her time. Five minutes on her upper deck will give you a better idea of the Monitor-Virginia duel, for instance, than five weeks of studying descriptions and illustrations. When you compare the photos of her as a barracks ship with the present reality, you're inclined to give the Dutch a lot of credit for detecting her value and her possibilities.

Looking aft from BUFFEL's forecastle. Good view forward from light bridge, not much of a view from the conning tower.

EARLY USN MISSILE SUBMARINES

PHOTOGRAPHS COURTESY
A.D. BAKER III

The American Navy's postwar experiments with guided missiles captured from Nazi Germany soon led to tests on launching and controlling such weapons from submarines. The missile used was the Loon, a copy of the German V-1 "buzz bomb," which was launched from the CUSK (SS 348). The CARBONERO (SS 337) was at first used only as a control ship but later was fitted with a launching ramp like that on the CUSK. Shortly a watertight hangar capable of holding two missiles was installed abaft the conning tower of each boat but for some reason the CARBONERO was never classified as an SSG during her service as one. A number of other fleet boats were fitted with guidance equipment to pick up and direct the missile to its target after it had passed out of the range of the launching vessel.

The Loon program was terminated in 1953 and the CUSK was converted to a fleet-snorkel submarine while the CARBONERO, although similarly modernized, was kept in use for tests of a new missile, the Regulus I. This was a so-called cruise missile that resembled a pilotless airplane and was considerably larger and more powerful than the Loon. Under the so-called Trounce program this missile was perfected for submarine use and the TUNNY (SS 282) was converted to an SSG in 1953 to carry it. Her conversion involved the removal of one main engine and the auxiliary engine, the installation of a missile hangar, a retractable launching platform, a snorkel and streamlined sail, and the rearrangement of much internal equipment in order to make room for the missile control and servicing equipment.

USS GROWLER in 1958. The rails upon which the missiles were launched are visible. Each boat could carry four missiles.

In 1955 the BARBERO (SSA 317) was converted from a cargo submarine to a guided-missile carrier as an interim measure, pending the anticipated delivery of a new class of nuclear-powered submarines armed with the Regulus II missile. But this program was curtailed in favour of the Polaris ballistic missile. The BARBERO had lost two main engines and her stern torpedo tubes in the earlier conversion, and her officers' and crews' quarters had been rearranged. A hatch connected the hangar to the main hull and six crewmen had their bunks up there with the missiles. The submarine later received a streamlined Guppy-type sail to go with her snorkel.

With the completion of the test phase of the Regulus I program the CARBONERO had her missile handling and control equipment removed, and reverted to normal attack-submarine duties in 1961. Three years later the Regulus I was itself phased out of service, at which time the much-altered BARBERO was stricken from the register and the TUNNY was reclassified briefly as an ordinary submarine before undergoing a new conversion to a transport submarine.

The Regulus II missile which followed into service, was carried by the two diesel submarines USS GRAYBACK and USS GROWLER and the lone nuclear boat USS HALIBUT.

In the two conventional boats the missiles were housed in a large compartment forward of the bridge and whelled out for launching on the deck. Four missiles were carried. With the advent of the Polaris missile force the need for the boats lessened and in 1964 the pair were withdrawn and used as attack submarines.

Later GRAYBACK, in 1968 was converted to an amphibious transport submarine and her missile area used for carrying troops, swimmers and their gear. She was finally stricken in 1984.

HALIBUT reverted to the role of an attack submarine in 1965 and was paid off in 1976.

With her regulus missile in the launch position, USS GRAYBACK arrives in San Diego Harbour.

USS BARBERO, with a Regulus guided missile on her stern, at the June 1957 International Naval Review.

USS TUNNY, SSG 282 in April 1953. The boat was fitted to fire the Regulus missile. She ceased SSG operations in 1964.

USS CUSK, SSG 348 in December 1950. CUSK was active between the years 1948 to 1953.

The nuclear powered, SSGN, USS HALIBUT in November 1959. This boat operated only until 1965, when she reverted to the role of an attack submarine.

HMNZS KUPARU – MARCH 1944 TO MARCH 1989

(Courtesy New Zealand Navy News)

On 14 March 1944 sixteen Harbour Defence Motor Launches were commissioned into the RNZN. One of these motor launches, Q1348 remained in service as TASMAN (1948-51), ML 3563 until mid-fifties, then as P3563 and since 1967 as KUPARU until 2 February 1989, when she was destored, awaiting disposal.

KUPARU saw service in Fiji, from November 1944 until November 1945 (a long passage for a 72ft wooden ship, with a speed of 10-12kts), and subsequently served with each of the four Reserve Divisions (HMNZS Toroa, Olphert, Pegasus and Ngapona), and with the Fishery Protection Squadron. Since 1984 she was based in Auckland, to provide navigation and seamanship training for young officers attending the Officer Training School at HMNZS Tamaki.

Many thousands of regular and volunteer reserve officers and sailors sailed aboard KUPARU and her sister ships, and her retirement will invoke many memories, and recall the distinctive smell and dampness of these cramped craft.

Her last official duty in the RNZN was to tow the contestants in the Hawea Cup to the start line at Stanley Bay, and escort them back to the training jetty at HMNZS Philomel, then tow them to the Tamaki Boatyard.

For the technically minded the motor launches were built in California (under lease lend) from a British design. They were 72 feet long, 5 feet 4 inches deep and had a breadth of 15 feet 10 inches; were powered by a diesel engine driving two screws and could travel at 12 knots; had a wartime armament comprising 1x20mm cannon, 1 x .5 and 2 x .303 machine guns, plus depth charges, and had a crew of one officer and eight ratings.

HMNZS KUPARU in 1984 – Photo courtesy RNZN

The last official duty, Hawea Cup Race on 1 March 1989. – Photo courtesy New Zealand Navy News

BOOK REVIEWS

SEAGULLS, CRUISERS AND CATAPULTS: AUSTRALIAN NAVAL AVIATION 1913-1944

Author: **RAY JONES**

Publisher: **Pelorus Publications, 11 Atunga Street, Taroona, Tas 7053.**

Pages: **144 pages, B5, paperback.**

Available: **By mail from publisher, post| and packing free.**

Recommended price is: **$24.95.**

Seagulls, Cruisers and Catapults is an authoritative account of the technical, operational and political aspects of Australian naval aviation from the first plans for a naval air arm, prepared in 1913, until the last aircraft disembarked from HMAS Australia in 1944.

The Navy's role as catalyst in the formation of the Air Force is outlined for the first time and details of the sometimes acrimonious struggle between Navy and Air Force over naval aviation are included. No serious work of RAN history can deal with the mid-war years without taking account of advice from London and the Admiralty's influence on RAN planning is made clear.

Operation of aircraft, such as the Seagull 111 and Seagull V amphibians, from Australian warships is described and the rationale for Australia's unusual seaplane carrier is explored. The hazards of cruiser aircraft operations are illustrated by the number shot down or damaged while performing their essential tasks in wartime. The vital role of aircraft operating from cruisers searching for raiders and taking part in fleet operations defending Australia in 1942 is stressed.

Extensive archival research in Melbourne, Canberra and London has been combined with details gathered during hours of interviews with the men who flew aircraft from cruisers and seaplane carrier to provide a balanced and well-rounded narrative which is an essential addition to the library of any naval or aviation history enthusiast.

ESSEX CLASS AIRCRAFT CARRIERS

by **ALAN RAVEN**

Published by the United States Naval Institute

Price: **$60.00**

This is the second in the series of the new Warship Design History books, the first having dealt with Fletcher class destroyers. Like the first, the Essex class book is a compilation of text, 100 black and white illustrations and over 150 scale line drawings.

As the publication describes a class of ships, the author (and also illustrator) has successfully highlighted a number of the units over the lifespan of the type. This has involved the large number of drawings, depicting every conceivable part of the ship from overall views to specific items of equipment.

Essex class Aircraft Carriers spans 192 pages and measures about 7 by 7 inches. It begins with a narrative of 13 pages including tables of data before entering into the plans and photographs.

Like the previous Fletcher class, this book is highly recommended to both naval historians and model makers alike.

"CRUISERS OF THE US NAVY 1922-1962"

by **STEFAN TERZIBASCHITSCH**

A total of 110 individual ships are described and illustrated within the 320 pages of this most comprehensive account of US cruiser types over a 40-year period.

From the 1922 Omaha-class cruisers of the post World War One Washington Treaty to the huge nuclear-powered guided-missile cruiser USS LONG BEACH of 1962, it is truly a superb reference.

Predictably, a majority of the book is devoted to a detailed examination of individual ships and classes.

Each entry gives the operational histories and comprehensive data tables list technical characteristics.

Some 395 photographs illustrate each ship listed and 20 sets of detailed line drawings cover every class.

There are some truly magnificent photos of some truly graceful ships spread throughout this easy-to-read reference work.

Several photos of USS OKLAHOMA CITY which made a historic visit to the yet-to-be commissioned STIRLING Naval Base on April 19, 1976 is naturally one of interest.

USS OKLAHOMA CITY was the first foreign warship to visit the fledgling base and the only World War Two cruiser to ever come alongside at Garden Island.

Other prominent ships include USS CANBERRA, the cruiser named to honour the RAN cruiser of the same name lost in the Battle of Savo Island in 1942; USS HOUSTON, lost in the Battle of Sunda Strait in company with the Australian cruiser HMAS PERTH also in 1942 and the USS PHOENIX – better remembered as the Argentinian cruiser General Belgrano lost in the Falklands War in 1982, some 31 years after leaving US Navy service.

Twenty cruiser classes are listed in this work and one other designated IX-300 (standing for 'unclassified vessel'), better known as the former German heavy cruiser PRINZ EUGEN.

It is a little known fact that after she was allotted to the United States by order of the 1945 Potsdam Conference, PRINZ EUGEN served for six months with a mixed German-American crew whilst her high-pressure superheated steam turbines and other installations were examined.

Full coverage of US cruisers specific features included in this book includes armament; aircraft and helicopters; electronic installations including fire control systems and radar fittings; colour schemes and camouflage; deployment and war losses.

Published by Arms and Armour Press of London, this book is distributed by Capricorn Link (Australia) Pty Limited of Lane Cove, NSW.

Retailing at $65 it is not cheap. However, for the enormous amount of information contained in this reference work it is reasonably priced.

Recommended reading and a most enjoyable book.

AUSTRALIAN SHIPS

Author: **ROSS GILLETT**

Publisher: **Child & Associates, 5 Skyline Place, Frenchs Forest 2086.**

Pages: **146.**

Price **$39.95. Hard cover.**

Reviewed by **Peter Plowman**

The most modern form of fast ferry transport is the wave-piercing catamaran, the latest state-of-the-art vessels of this type presently being built in Hobart. The catamaran ferry is generally considered a very recent innovation, yet in "Australian Ships" there is the story of a catamaran ferry built in Hobart as long ago as 1855. Unkindly known locally as "Old Double Guts", but officially named KANGAROO, it operated for seventy years across the Derwent River in rather erratic fashion. The story of the KANGAROO is just one of over 150 such vignettes that make up "Australian Ships".

Ross Gillett is well known as an author of several excellent histories of the Royal

Australian Navy and its ships. In recent years he has turned his attention to more general shipping topics, and his latest effort falls into this category. There is a wide coverage of ships both naval and merchant, plus brief histories of some of the best known Australian shipping companies. During the Bicentennial year, a number of books appeared purporting to describe various features of our first 200 years. Many of these were of poor to non-existent value, but that charge cannot be levelled at this work.

Subtitled "Over Two Centuries of Our Maritime Heritage", this book is very difficult to categorise, as it includes such a diverse range of material. Whilst having no pretensions to being a comprehensive review of our maritime history, the author has selected his material carefully to present as wide a view as possible, yet keep it all in order, concise but informative. The book is intended for those ship-lovers interested in many facets of matters maritime, the once majestic sailing fleets, the vanished coastal steamers, the harbour and river craft, numerous marine mishaps, and the Navy.

"Australian Ships" is divided into 162 short chapters, most covering a page or less, each of which consists of a brief description of some event, company or ship that has played a role in Australian maritime history. The text is arranged in chronological order, commencing with the 1770 voyage of discovery by Captain Cook in the ENDEAVOUR, finishing with the sail training ship YOUNG ENDEAVOUR of 1988. In between are many names well known to those with an interest in ships, along with the occasional unexpected or unknown vessel.

Some of the vessels described achieved notable "firsts" or "lasts". These include the First Steamers, SOPHIA JANE, SURPRISE and WILLIAM THE FOURTH, the First Australian Warships, SPITFIRE and VICTORIA, The Last Manly Paddle Steamer, BRIGHTON, the Last Manly Steam Ferry, SOUTH STEYNE, the Last Colonial Warship, COUNTESS OF HOPETOUN, and one ship that falls into both categories, CRUSADER. Major incidents over the years are also recorded, among them the sinking of the AUSTRAL in Sydney Harbour in 1882, the wreck of the WOLLONGBAR in 1921, the collision between the TAHITI and ferry GREYCLIFFE in 1927, and the more recent disasters involving the STRAITSMAN and the LAKE ILLAWARRA. Amongst the more unusual titles are "Lifeboat that Never Attended a Rescue", "Coaster to Mother Ship", "The One and Only", "Tasmania's Aircraft Carrier" and "Cinderella Ship".

Of particular interest are the sections devoted to vessels that now form part of restored fleets, JAMES CRAIG, LADY HOPETOUN, JOHN OXLEY, KANANGRA and WARATAH. There is also coverage of other veteran ships that have been preserved for posterity, including the paddle steamer ADELAIDE, NELCEBEE, ENA, ALMA DOEPEL, BARAGOOLA, LADY DENMAN, FALIE, the steam tug FORCEFUL, HMAS DIAMANTINA and HMAS WHYALLA.

Very brief histories of some famous Australian shipping companies are also included, namely McIlwraith McEacharn, The Adelaide Steamship Co., Huddart Parker, the AUSN, State Shipping Service and Australian National Line, as well as several smaller intrastate companies.

Without doubt the highlights of this book are the 60 colour prints, spread throughout the text. The quality and variety of these pictures are well worth the purchase of this book on their own, as they bring so many of the ships to life. Some of the finest colour pictures show WARATAH, ENA, ALMA DOEPEL and YOUNG ENDEAVOUR under full sail, NORTH HEAD crossing the Heads in stormy weather, JAMES CRAIG arriving in Sydney for the first time, and KRAIT. In addition, every page includes one or more black and white pictures, over two hundred in all. Most are of good quality, and many have not been published previously.

"Australian Ships" is a book to be browsed through at leisure, and returned to frequently. It would make an ideal gift for anyone with an interest in ships and the sea, or a youngster wishing to learn something of our maritime past.

NAVY LEAGUE AND CADET NEWS

FROM THE WEST

T.S. ANZAC, the Naval Reserve Cadet unit at Rockingham WA, had its annual inspection by the Naval Officer Commanding Western Australia, Captain G.J. Earley RAN on Sunday 4th June.

The weather was unexpectedly fine and many parents, friends and Ex Naval personnel came to see what the Cadets could do.

Following the inspection of the parade, cadets were ordered to perform a series of evolutions to demonstrate their abilities, teamwork and efficiency. They undertook fire and damage control exercises, rigging and sailing dinghies, demonstrations of mooring and anchoring, a snap lecture on the history of Rockingham and then prepared afternoon tea for their guests.

The day was much enjoyed by all, and Rockingham should be proud of its Naval Reserve Cadets for their skills, teamwork and attitudes.

T.S. LISMORE

The Naval Reserve Cadet Unit, T.S. Lismore, has operated for many years in the City of its name, Lismore, on the Northern Rivers of New South Wales.

The City of Lismore gave its name to the world war two Corvette, HMAS Lismore, which saw very distinctive active service in many theatres, and, the Naval Reserve Cadet Unit, T.S. Lismore, took its name from that Gallant little ship.

The Unit was formed with assistance from the then, Richmond Valley Sun section of the Naval Association of Australia, and operated out of premises in South Lismore made available by Mr *Stan Moore, himself a WW2 Navalman.* The Premises were, in fact, part of the Old Norco Bacon Factory and the old cold rooms were converted into class rooms and mess and office space for the officers and instructors.

Over the years, the premises took on a more active roll in the Industrial build up in South Lismore, and the Unit committee in recent years were becoming somewhat concerned with the increased risk of accident and serious injury from the Industrial activities.

The Lismore City Council was approached for suitable land, preferably with water frontage, ideally, fronting Lismore lake, an area used for Boating Recreation. Unfortunately, council was unable *to accede to the request and the future development of* T.S. Lismore looked none too bright.

The Unit committee continued with the many fund raising activities undertaken, and funds were salted away in a special high interest "Building Account".

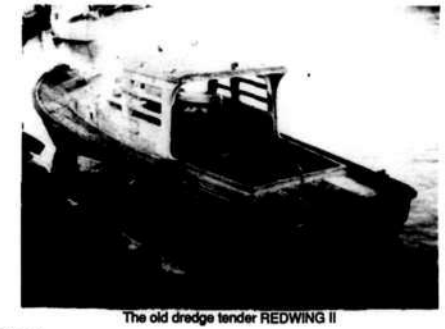
In 1987, an approach was made to the Shire Engineer, Ballina Shire Council, Mr Fred Woods, to ascertain if any suitable location could be acquired in Ballina. Three members of the Unit accompanied Mr Woods on an inspection of an industrial Estate in North Ballina, under development which was to front onto a man made lake with an average depth of some three metres, which would have navigatable access to the Richmond River. Mr Woods indicated that some 2800 square metres could be set aside for use by the T.S. Lismore to develop a headquarters base.

A letter was submitted to Ballina Shire Council concerning the land, together with letters of support from the Ballina Sub Section, Naval Association. The Ballina Sub Branch of the RSL of A. and the Ballina, Korea, South East Asia, Vietnam Veterans Association. The matter was discussed by the council and the Unit committee was informed that the land would be placed under their control, at no cost, for the development of the Naval Cadet movement. Council also assured the committee that assistance, where possible, would be given.

It was an elated committee which met to form the necessary Sub Committee's needed to bring the project to fruition. A plan concept was formulated of a building 120' x 40', of block construction with a colourbond roof. The building was to be so situated on the block for an overall outlay which would have, and create, a similarity to an RAN establishment. Entry would be gained past a quartermasters lobby and through a boom gate and the main building would have three classrooms, heads and showers, instructors office, CO's office, an office for the "XO" and "SO", a clothing store, Bos'n store and armoury. A fully equipped galley would front onto a messing area. A parade ground would be adjacent to the building and a boat-shed and classroom would be constructed on the Northern Boundary of the block.

A Ballina draughtsman, Mr Bert Pickup was approached and agreed to undertake the drawings at no cost to the committee. So to, did a local firm of consulting engineers, David Ardill and Associates, undertake the necessary engineering plans.

The problem now was how to finance the building. An approach was made to both the Federal and State Governments, but to no avail. No funds could be made available either as a grant or low interest loan for this youth training organisation. The building fund held $28,000, and it was estimated we would need about $45,000, to get to lock up stage. An approach was made to the Ballina Sub Branch of the Returned Services League of Australia and we were



The old dredge tender REDWING II

successful in negotiating a low interest loan form them $20,000 repayable over 10 years. Letters were sent to all ex service organisations throughout the district requesting donations towards the project but unfortunately, outside a few, no assistance was forthcoming.

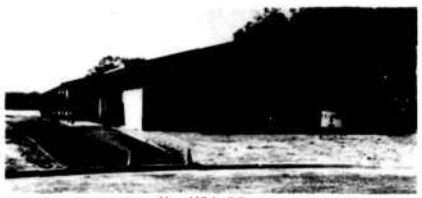
In September/October 1988, contracts were signed to commence building operations. Local Solicitor and RSL member, Peter Carmont handled all legal work at no cost to the committee. Just as building operations got under way, down came the rain which finally put the project some three months behind schedule. Cadets commenced full time parades at the new headquarters in April (1989) but a lot of work remains to be done to complete the main building and the overall concept.

It is to the credit of the Ballina Ex service organisations, together with the Naval Association Sub Sections from Ballina, Lismore and Mullumbimby and the Ballina RSL Club Ltd that the Unit committee could take advantage of this magnificent offer from Ballina Shire Council.

At the time of discussions regards the land, Ballina Shire Engineer, Mr Woods, made the offer of an old dredge tender of no further use to Council, to use as a training vessel. The Commanding Officer, T.S. Lismore, Lieut Earle Dundas, NRC, Together with several members of the Ballina Sub Section of the Naval Association, inspected the vessel. She was of timber construction, some 30' in length, weighed in at nine ton, about 2'6" were below the water and she was powered by an old 3 cylinder Gardner Diesel, somewhat the worse for lack of maintenance. A programme of restoration was undertaken and after an estimated 1400 man hours, which saw her stripped of paint, several major jobs undertaken by the "Chippies" and overhaul of the engineering plant by several Ex engineering branch members and a paint job by the Ex navalmen in Ballina, she took to the water resplendent in her new role as a cadet training aid to better equip the youth of the unit in the ways of the sea.

In November 1988, the flag officer, Naval support command, Rear Admiral Tony Horton and Mrs Horton with the Director of Naval reserves and cadets, Captain Tom Lewis, took to the water in the old girl for a short cruise on the Richmond River.

Restored as the TV RICHMOND.



New HQ building.

The vessel has been recommissioned as the Richmond the previous vessel of the name being a long serving pilot boat in government service, now on static display at the naval and maritime museum in Ballina

TS SHROPSHIRE WINS INAUGURAL PETER BALLESTY MEMORIAL TROPHY

TS SHROPSHIRE, the Naval Reserve Cadet Unit at Grafton, New South Wales, had a double occasion for celebration on Saturday, 22nd July.

The NRC Unit was the first to be awarded the Peter Ballesty Memorial Trophy, a trophy donated by the New South Wales Division of the Navy League as a memorial to the late Commander Peter Ballesty RFD RD RANR, a former President of the NSW Division of the League and a former Commanding Officer (Reserves) of the Sydney Port Division of the RANR.

The trophy is a scale model of HMAS ARCHER, an Attack Class patrol boat, once commanded by Commander Ballesty and formerly used for training by the RANR. The trophy is to be awarded annually to the NRC Unit in New South Wales demonsrating the greatest proficiency in seamanship judged by the Unit's performance during the year and on results obtained in *examinations for higher ranks*

On the day of the award TS SHROPSHIRE was being inspected by Captain T. E. Lewis RAN, Director of Reserves – Navy, as the Unit had also been judged to be the Most Efficient NRC Unit in the NSW & ACT Area and

Captain Lewis presented the Unit with The Yarra Shield, a shield awarded by HMAS YARRA.

The parade was supported by the presence of a large number of local dignitaries, parents and friends.

Pictured is Mrs Maree Ballesty presenting a photograph of the trophy, which is permanently housed in HMAS WATSON, to the Commanding Officer of TS SHROPSHIRE, LEUT Mike Richards NRC who, co-incidently, built the model for the League.

PLEASE NOTE

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