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We've changed our logo and our motto - but not our philosophy.

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The Navy, July-September 1995 1
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In addition, ADI’s testing and calibration centres in Sydney, Melbourne and Perth are available to check any equipment for the Navy.

Preparation of manuscripts:

<table>
<thead>
<tr>
<th>FROM OUR \ READERs</th>
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<tr>
<td>Dear Sir,</td>
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<td>...Lessons Learned?...Continued...</td>
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<td>\FOOTNOTE</td>
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<td>In the last edition of The Navy I wrote of the need to constantly remind the community that our continent is an island. Of the need to keep the importance of maritime matters to the fore. Of the difficulty when such emphasis is placed on the land. From the above views were barely published when another reminder was given of just how necessary it is for the league to be a little evangelical. It was brought to my attention that Australia Post was about to issue four commemorative stamps to mark the end of the Second World War. Two depict members of the army, one a navy officer and one an airman. No Navy! I am happy to say that the Minister for Veterans’ Affairs has informed me that Australia Post will now issue in August a further four stamps including a naval hero.</td>
</tr>
<tr>
<td>Graham HARRIS</td>
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<td>Federal President</td>
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| Full credit for any help received will be given in my publication. |

| faithfully, |
| Tom LEWIS |
| MA, RA, Dip Ed, RAN |
| GP0 Box 2935, Darwin 0880 |
| Fax: 089 48 0236 |
| Internet: lewist@peg.apc.org |

| A few Naval posters of naval ships. |
| always. |

| sincerely. |
| Tom LEWIS |
| MA, RA, Dip Ed, RAN |
| GP0 Box 2935, Darwin 0880 |
| Fax: 089 48 0236 |
| Internet: lewist@peg.apc.org |

| \* \* \* |
| \* \* \* |

| Dear Sir, |
| The Farmers’ Association is currently compiling a history of the Rammle B Motor Launches, the Harbour Defence Motor Launches and associated small ships in service with the RAN in the Second World War. |
| Peter EVANS |
| Turramurra 2074 |

| dear Sir, |
| My husband Eric Leman was a member of the League for some years and received much pleasure and interest from the League’s magazines. Sadly, he passed away on the 4th November, 1994. I have enclosed a list of navigational maps which belonged to him and I am wondering if any of your members would be interested in having them. They are all in good condition. |
| AES B Cape Patterson to Kent Group (2 maps) 1079 Tasmania Great Barrier Reef to Port Douglas Qld 1595 English Channel and Western Approaches AES 75 Approaches to Port Jackson Australia and South-East Asia Morton Bay, Brisbane, Qld Kumra to Moreton Head North Head to Crowdy Head Port Phillip Vic Port Phillip & Gabo Island Nelson to Wollongong Port Jackson Capt James Cook Bicentenary Map |

| \* \* \* |
| \* \* \* |
Naval Matters
An ADF for UH Operations?

By A.W. Grazebrook

Periodically, it is argued that the Australian Defence Force should include units and/or equipment specifically to enable or improve Australia’s ability to contribute to United Nations peacekeeping and military relief operations.

Similarly, it is suggested that the need for regional defence cooperation should influence the choice of capabilities of the Australian Defence Force.

Both these arguments are strenuously opposed by the Department of Defence, the Australian Defence Force’s senior command and staff officers and its major defence academies. Their argument is that the ADF’s primary strategic role is to defend Australia and its area of direct military interest against all forms and levels of direct military attack. That is, the United Nations and its forces may influence the equipment (with its logistic support capability) with the possible exception of Australia’s national defence strategy.

Thus, to Somalia for famine relief and other United Nations operations, the ADF sent an Army battalion to protect UN forces on the ground; the RAN sent a high performance combat aircraft in the form of AV 8B Harriers to give support; and the RAAF sent an aircraft to help provide medical relief. All regional navies have and need a greater amphibious capability than the ADF. This illustrates another opportunity for the ADF to benefit from regional defence cooperation.

Until the recent Huon class coastal minesweepers are completed, the ADF is behind regional navies in important aspects of mine counter measures that are essential to any case to Australia’s national defence strategy. With the growing power of China and the reduced United States defence interest, the need for regional defence cooperation becomes an even more important aspect of Australia’s national defence strategy.

The desirability of Australia playing an active part in United Nations peacekeeping and associated military activities is not an argument. However, regional defence cooperation has become an increasingly important part of Australia’s national defence strategy.

The growing power of China and the reduced United States defence interest has led many nations to re-evaluate the need for regional defence cooperation. The Royal Navy is no exception to this. However, the ADF is not well prepared for this new role.

Portsmouth, the United States Navy’s home port, has a population of 70,000 people and is a major naval base. Portsmouth has a defence industry that provides employment to one in seven of the city’s population. It has a long history of naval defence cooperation. The Royal Navy is well prepared for this new role.

In recent years, there have been extended periods when the RAN has had no MCM capability and regional navies have had numerically limited but technologically advanced MCM forces.

With the dependence of Australia’s economy on international maritime trade through south east Asian waters, mine counter measures will become an area of prime importance in regional defence cooperation. With the Huon class coastal minesweepers, supported by the Australian AN/SPY-1D Airborne Early Warning System (AAM) for detection and the Royal Australian Navy’s Bay Class minesweepers, the RAN will be able to perform this role.

The RAN submarines, supported by the RAAF VIP Falcon 900’s and Australian Army GAF Light Air Camps, are essential to any case to Australia’s national defence strategy. They provide an anti-submarine capability for regional navies which do not yet operate their own submarines. The anti-air warfare capabilities of our DODG and HFOG, protected by the high performance combat aircraft, are essential to any case to Australia’s national defence strategy.

On the other hand, there are two types of naval capability which are not required by the RAN for the defence of Australia’s area of direct military interest but from an opportunity to operate with which the RAN can benefit.

The limiting factor is not types of capability but numbers. Many of Australia’s most competent defence observers say the Somalia commitment absorbed an impossibly large portion of the Australian Army’s frontline strength. Thus RAN submarines, supported by the Royal Australian Navy’s Bay Class minesweepers, and the RAAF’s VIP Falcon 900’s are essential to any case to Australia’s national defence strategy.
The Small General Purpose Escort

By Ross Gillett

During the seventh decade of the 20th century, the Royal Australian Navy undertook the design of a new "middle of the range" General Purpose Escort (GPE).

Few particulars survive of the 1960s effort except for a broad outline of the characteristics and proposed armament. The GPE was required to satisfy a broad cross-range of wartime and peacetime duties. These included a surface to surface role, with a sufficient anti-aircraft capability. Anti-submarine weapons were to include Mk 48 Mod 5 torpedoes fired from Mk 32 tubes.

The 330 ton long escort was to be a 34 foot moulded breadth and 11 foot deep draught. Maximum displacement was 7,100 miles at 12 knots, reducing to 5,200 at 15 knots and 3,700 miles at 18 knots. A fuel capacity of 200 tons was envisaged.

To arm the proposed class of GPEs, naval authorities agreed on a well balanced outfit of weapons. A single Sea Cat triple launcher for the sub-sonic Knebworth-Corvus Window launchers and the two MODINI type rocket flare launchers forward of the bridge on No 1 deck were included, along with 5 inch starshell and one Xenon-Arc searchlight. Countermessures equipment included Knobworth Corvus, Window launchers and Novo Isopod decoys.

Small arms in the form of L2A1 rifles (four in number), Owen 9mm Carbines (four in number). The Seacat triple launcher for the sub-sonic Knebworth-Corvus Window launchers and the MODINI type rocket flare launchers forward of the bridge on No 1 deck were included, along with 5 inch starshell and one Xenon-Arc searchlight. Countermessures equipment included Knobworth Corvus, Window launchers and Novo Isopod decoys.

No names were ever allotted to the class of General Purpose Escorts, although a sketch of the design has the prototype allocated the H07 hull number. With the entry into service of the Attack class patrol boats, and the decision to design and build three light destroyers (DDLs) in Australia, the project to acquire a new class of General Purpose Escorts was finally dropped.

Fleet Concentration Period (FCP) Kakadu Two, with 22 ships, two submarines and more than 35 aircraft, represented a significant advance on FCP Kakadu One conducted in May 1991. It was also a good example of the value of lateral thinking both in terms of deriving maximum benefits from a limited number of steaming days and aircraft hours and of improving regional security.

The first FCP of the year could have been reorient it to the north every other year, with some input from New Zealand.

However, thanks to the decision to reorient it to the north every other year, for the sea phase of the most recent FCP. In the sea phase, while night steaming in company, officer of the watch embarked S70B2 Seahawks, represented observers from Indonesia, represented with observers from the Philippines for the sea phase of the most recent FCP.

The Royal Malaysian Navy increased its commitment to two corvettes instead of one and the Royal Thai Navy sent a surface combatant to FCP Kakadu Two rather than the training ship sent to inaugural Kakadu.

The Royal Malaysian Navy increased its commitment to two corvettes instead of one and the Royal Thai Navy sent a surface combatant to FCP Kakadu Two rather than the training ship sent to inaugural Kakadu.

Indonesian, represented observers from New Zealand. The FCP Kakadu increased South East Asian interest. The RAN commitment was considerably greater with guided missile destroyers (DDG), guided missile frigates (FFG), two cruisers, two destroyers, two frigates, two submarines, and several replenishment vessels. RAN commitment considerably greater.

...A Photo Essay

By Antony Underwood

More than 5000 sailors and airmen from eight nations recently gathered in Darwin to participate in the first major event on the RAN's 1995 calendar.

Seven view of the Kakadu Two Ships. (Photo - APMI Tracy Casteleijn)

RAN commitment considerably greater.

assets and the sensors and weapons systems with which they are fitted. And the second FCP Kakadu showed considerable South East Asian interest.

The RAN commitment was considerably greater with guided missile destroyers (DDG), guided missile frigates (FFG), two cruisers, two destroyers, two frigates, two submarines, and several replenishment vessels.
CMDR Peter Clarke, said FCP Kakadu and strike and combat aircraft including serials. We have developed our ability to cooperate at sea. We have clearly demonstrated an ability to communicate successfully but I do not know any multilateral activity where communication has not been a problem but as with FCP Kakadu One, there is still room for improvement in some areas."

RADM Chalmers described the Kakadu write of FCPs as "unique and important."

"Unique" in that it is the only activity in which we see regional naval and air forces coming together in Australia in such numbers," he explained. "Important because Kakadu is firmly in keeping with Australia's foreign policy in particular that element of policy which seeks through regional engagement to have Australia contribute to stable forms of cooperative security based on relationships which reflect a greater wave of genuine partnerships."

RADM Chalmers added that the security environment in the Asia region "requires us all to take an increasing interest in the strategic affairs of the area.

Australian Government initiatives involve specific economic, cultural and diplomatic programs tailored to reflect our partnership in the region," he said.

"The strengthening of links between Australia and our neighbours in South East Asia is fundamental to our security."

"Regional security and maintenance of stability are also essential for continued economic growth and development of the region."

Meanwhile, HMAS SUCCESS (CAPT John Mount) and HMAS WESTRALIA (CMDR Steve Hooke) made RAN history during Kakadu Two. On Wednesday, March 22, the two tankers met in the Darwin exercise area to do a consolida
dated replenishment of SUCCESS.

Commencing at 1500 and finishing at 2100, WESTRALIA pumped to SUCCESS 4775 cubic metres (roughly 4775 tonnes) of diesel fuel. It was the largest amount of fuel passed between RAN ships while underway at sea.

While conducting the replenishment it was necessary for the tankers to make two alterations of course while still connected.

The first alteration was of 30 degrees and the second, just on sunset, was almost a complete reversal of course from west to northeast to east.

It was also the third largest underway replenishment conducted by SUCCESS. During the Gulf War, Operation Damask, she received 5275 cubic metres from VALDEZ, a merchant replenishing tanker, and in September 1993 4940 cubic metres was received from USNS PECOS.
NEW ZEALAND'S NAVY
...Today and In The Future

Why a Navy?

For many in New Zealand, like other western countries, their first question is "why do we need a Navy, why pour money into warships when the Cold War is over?"

New Zealand is an island nation. Dependents on exports and consuming imports. That is an immutable fact that has been true since 1840. It is the fundamental strategic fact for our island and it does not alter because the armed strength in the former Soviet Union and the West is now indeed, not one of the business in this country could long continue without the 4000 or so merchant ships that come here every year.

Freedom to trade across the sea is a hard won privilege. Freedom to trade is an internationally accepted situation because the nature of the west have been since the Anglo Dutch wars of the 18th century.站起来 researcher. And listening to keep the sea open for trade is not only an ancient history of Singapore and Malaya, but it is a fact of Europe and North America.

New Zealand's part in this is to be able to exert our sovereignty and support international law, order and our interests. Our Navy today is not just a few ships, but a dynamic amalgam of people, skills, and equipment.

The RNZ Today

The RNZ has five main task elements in five main capabilities that we provide the government:

- The naval combat force, currently three frigates and ENDEAVOUR our fleet replenishment tanker. In fact we have four frigates, but as of 1 March this year RNZ NAVY's SURVIVAL was commissioned so as to release frigates and operating tasks for the new airship. Our CHARGE de MARS was the one carrier that was the core of the navies and that would provide the essential combat power should conflicts need our support.

- The next element of our Navy is the Hydrographic fleet. The navies combat role includes the ENDEAVOUR a multi-purpose ship. The ship is a familiar sight in New Zealand's part in the defence policies. Our Navy today is not just a few ships, but a dynamic amalgam of people, skills and equipment.

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- The Royal New Zealand Navy is a 2,500 strong organisation controlling over $2 billion in assets, a $1 billion cash flow and invetved in building projects worth $1 billion to New Zealand's industries; by any commercial measure in this country it is a large operation. Understanding the Navy is important, however, for New Zealanders know that it is an international law of the sea.
The task of mine clearance and the diving capabilities of the Navy also mean we must have a high standard of medical support. The hyperbaric chamber at Devonport was the only one in the United States. TUI plays a key role in the work of the Defence Scientific Establishment both in underwater and off-shore operations. The hyperbaric chamber allows for acoustic studies and bottom profiling for civilian medical use. The chamber also serves for civilian medical purposes.

The hyperbaric chamber at Devonport was the only one in the United States.

Another part of ensuring that the ships can sail clear of threats or dangers is to have a good system of communications. The RNZN has a good system of communication, as well as the SHIPSTAN companies. I have to note that the ANZUS dispute has been very strong in this area.

The last force element of the Navy is stealth. The RNZN's PUMA with full camouflage has double the length of the JSI and is able to sail in the same kind of weather. The RNZN has a good system of communication, as well as the SHIPSTAN companies. I have to note that the ANZUS dispute has been very strong in this area.

The RNZN is addressing the challenges I the RNZN is addressing.

The RNZN Today
Naval Combat Force
HMNZS WELLINGTON and HMNZS CANTERBURY
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HMNZS WAIKATO
- upgraded Leander-class, 2 x 36mm guns, 2 triple rocket tubes

HMNZS ENDEAVOUR
- Fleet replenishment tanker

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The Navy, My September 1995

The Navy, My September 1995
Naval Task Group On Tour

Ships from a Royal Australian Navy task group have undertaken a series of visits to North Asian ports in Korea, Russia and Japan.

Under the command of Captain Tim Stapleton, the task group comprised the guided missile destroyers HMAS HOBART, supply ship HMAS SUCCESS, and guided missile frigates HMA Ships SYDNEY and ANBERRA.

To ports only rarely visited by Australian Naval ships, the visits included:
- HOBART and SUCCESS visiting the port of Seoul, South Korea, May 19-20, making a port call which featured 'Australia Day in May' celebrations by ships' companies (designed to commemorate Australia Day at a more suitable time of year than the deep freeze of a Korean January);
- SYDNEY making the first ever visit by an Australian Naval ship to Russia's eastern port, Vladivostok, combined with an AUSTRADE exhibition at Australian commodities on board, in the period May 25-27;
- SYDNEY and ANBERRA visiting Yokosuka, Japan, in the period May 22-25, providing a combined Naval guard for a wreath laying at a Commonwealth War Cemetery on May 27.

A Navy spokesman said the task group's visits to North Asia were one feature of a busy year of RAN deployments to fleet concentration periods, maritime and combined exercises in Australia and with a variety of countries in the Pacific and Indian Oceans.

Navy Celebrates VE Day

Across Australia, Navy celebrated the 50th anniversary of the Second World War Victory in Europe on May 8.

In Sydney the day was highlighted by an ex-cannibal commemoration service in the Opera House forecourt where the Royal Australian Navy Band and a 100-strong service guard marched on. HMAS KANIMBLA, the recently acquired training and helicopter support ship, anchored in Farm Cove adjacent to the Opera House.

For the commemorations, the RANs youngest guided missile frigate, the 17-month-old HMAS NEWCASTLE, was also berthed at the Overseas Passenger Terminal, West Circular Quay. The same morning, her first Commanding Officer, Rear Admiral Chris Ovens, and the boats' commanding officers and crews were expected to enter service later this year.

After their formation entry the boats joined a column for the passage up harbour. A brief ceremony was held at HMAS PLATYPUS, with the new Maritime Commander, Rear Admiral Chris Ovens, and the boats' commanding officers.

Australia's six Oberon class submarines, ORION, OCEAN, OSCAR, OCEAN, OCEAN and OTAMA have enjoyed long careers in the Royal Australian Navy with the first commissioned in 1967 and the last in 1978. During their careers all the boats underwent major mid-life modernisations.
The Maritime Commander, RADM Chalmers AO RAN recently visited ALBATROSS with a purpose of familiarising himself with the Maritime Lodge units at the station and as an opportunity to present the Squadrons with annual awards.

In his opening address, RADM Chalmers stated that 1994 has been a busy year for the Fleet Air Arm. The year commenced with units being deployed to the Bass Strait for the Sydney to Hobart Yacht race, followed by assistance with the NSW Bush Fires, numerous deployments around Australia and overseas and involvement in various races. The most notable of these was the rescue of the French yachtswoman Isabelle Autissier in January 1995. The McNicoll trophy was presented to 817 SQN for displaying the highest efficiency and effectiveness in the conduct of their duties throughout 1994. In particular, their assistance with the NSW Bush Fires, their numerous deployments and their support to the local community. LCDR Smith, CO 817 SQN graciously accepted the trophy on behalf of his squadron personnel.

The Navy League Shield was presented to all the Squadrons for their outstanding service to the local communities, especially during the January Bush fires. RADM Chalmers made comment on the remarkable show displayed by the Squadron personnel who were recalled from leave at the time. They received the support of the whole Air Station and were the outward face of the NAVY.

CMDR Wright, CO HS 816 SQN accepted the shield on behalf of the Squadrons.

First visits by Canadian City Class

Her Majesty's Canadian Ships, HMCS VANCOUVER and REGINA, the second and fifth Halifax class, arrived in Sydney having completed all with the Royal Canadian Navy arrived in Australia waters in June to begin port visits to Fremantle/Sydney once again.

As part of the deployment to Australia, VANCOUVER participated in exercises with RAN units along the NSW coast in late June and on 2 July opened its gangways for public inspections. Crowded by 24 officers and 201 enlisted personnel, the 5,200 ton destroyers form part of the 12 unit Halifax class designed and built in Canada to replace the numerous 1950s-1960s vintage destroyers that had formed the basis of the Canadian fleet for the past thirty years.

The first six of the new destroyers was ordered in 1983, followed by the second group in 1987. Compared to the older destroyers, optimised for the anti-submarine warfare role, the new class mounts a balanced armament to counter anti-ship, surface and submarine threats. During 1994, the lead ship, HALIFAX, was deployed to the Adriatic in support of the United Nations sanctions against the former Yugoslavians while VANCOUVER participated in the multi-national RIMPAC exercise from Hawaii.

VANCOUVER was formally handed over to the Navy in September 1992, the total value of the whole project being $10 billion. The ship is armed with sixteen vertically launched Sea Sparrow surface to air missiles, eight Harpoon surface to surface missiles, one Bofors 37mm gun, a Phalanx Close in Weapon System, six 50 caliber machine guns and Mk 46 torpedoes launched from the ship and via the two embarked Sea King helicopters.

Maximum speed is more than 28 knots with power provided by two LM 2500 General Electric Gas Turbines and for cruising, one Paxistock diesel.

Navy Move To New Headquarters

The new Naval Support Command Headquarters was formally opened by Rear Admiral Tony Hunt on Monday, 1 May. The site on Jones Bay Road at Pymont has been occupied by the Royal Australian Navy since early 1947, when the buildings were commissioned as a victualling yard for ships homeported in Sydney. The day also witnessed the beginning of the official occupancy by NSC and civilian staff, all within only a few minutes of the central business district and by boat, no more than ten minutes from the Fleet Base. Garden Island, HMAS WATERHEN at Waverley and HMAS PLATYPUS in Neutral Bay.

As part of the refurbishment of the 40 year old complex, special attention was paid to retaining as much of the original buildings as possible, with only a few low profile additions added to provide a modern security entrance, cafeteria and gymnasium, conference room and credit union facilities.

The resultant Headquarters now houses 270 uniformed and civilian staff, all within only a few minutes of the central business district and by boat, no more than ten minutes from the Fleet Base. Garden Island, HMAS WATERHEN at Waverley and HMAS PLATYPUS in Neutral Bay.

Continued
Mine Countermeasures Exercise From Geelong

The RAN mine countermeasures teams recently conducted “Phosphorus-bromide” 1995, an exercise involving vessels and personnel operating from the Port of Geelong between mid-March and early June. Also participating were the Reserve divers, a mine sweeping drone unit and the mine warfare operational systems support and auxiliary systems groups.

For the first time, the Forward Support Unit (FSU) was transported from Sydney by rail, the success of the deployment possibly determining future such exercises. In contrast to the last years, mine warfare operations in Port Phillip where the FSU was self-supporting in a remote area, the 1995 exercise was concentration on the heavy industrial and populated area of Geelong. Support of the naval activities. Australian Army units assisted with the necessary heavy lift and transportation tasks. Shore-based naval personnel operated from Corio Bay, the ESL comprising various containers including storage and offices, technical workshops, an operations room, accommodation, communications, dining and galley.

New Navy Hydrographic Office

The Royal Australian Navy’s new Hydrographic Office on The Drive, Wollongong, was officially opened by the Minister for Defence, Senator Robert Ray, on Friday, 7th April.

Accompanying Ellsworth as aircraft pilot and observer was the Australian Antarctic explorer, Sir Hubert Wilkins. By the end of the voyage, Ellsworth had become increasingly vexed by the excessive rolling of the ship. Returning to the United States from Antarctica via Japan, in 1919, he presented WYATT EARP to Wilkins, who promptly sold her to the Australian government for 4,400 pounds. Shortly afterward, World War II began and the government used the ship, renamed HMAS WONGALA, to carry stores and ammunition from Sydney to Darwin in 1919. From 1940 until 1944, she was a Guard Ship at Port Pirie and Whyalla, and as a mother ship in the Sub-Antarctic and to carry out a reconnaissance of the Antarctic coastline of George V Land to try to find a site suitable for a third station. It was decided...
HMAS WHYATT EARP

The two island voyages. to use a Navy LST (Landing Ship Tank) for the two island voyages. Finding a ship for the 1947 Antarctic voyage had presented a real problem. There seemed to be no vessel suitable in Australia, and time was too short to search for and charter one from overseas.

Then Dir. Douglas Mawson, who lived in Adelaide, remembered the WYATT EARP. He suggested to the ANARE Planning Committee that she could be rented and used. He was supported by his old colleague and captain, John King Davis, who believed that wooden ships were superior to steel ones for polar sailing.

WONGALA was placed in the Torrens Dock at Port Adelaide. There she was refitted and used. He was supported by his old colleague and captain, John King Davis, who believed that wooden ships were superior to steel ones for polar sailing.

The Royal Australian Navy agreed to be responsible for the project, and the WONGALA was placed in the Torrens Dock at Port Adelaide. There she was largely rebuilt, at a cost of about $50,000 pounds. Rotting timbers in her hull were replaced, and the superstructure was extended forward, to enlarge the accommodation, and upward, to provide a new bridge and chartroom. A cabin for the captain and a cosmic ray laboratory. The thick wooden hull of the WYATT EARP was extremely strong. With oak beams between the planking, sea water would be forced through into our cabin. The installation of a new diesel engine of much greater weight than the original small power unit was taken to have very serious results, which I shall describe later.

The RAN, in making the ship available for ANARE use, returned to the Ellsworth name, based on its Antarctic associations. The vessel became HMAS WYATT EARP on 16 July 1947.

The ship was commissioned at Port Adelaide on 17 November 1947. In the presence of the Governor of South Australia, Sir Willoughby Norrie, Sir Douglas Mawson, the Naval Officer in Charge in Adelaide and other dignitaries, the ship was to be launched from the dry dock into the Torrens River. With the commissioning pennant flying proudly from the mainmast and the uniformed crew lined up on the deck, the chocks were removed and the little vessel slid smoothly down the slipway, stem first into the water.

Extra fuel tanks fitted into the hold gave the ship a cruising range of 10,000-15,000 miles at a maximum speed of 10-12 knots. An echo-sounder, a gyro-compass and a small radar set were installed on the bridge. The sails of the Marconi rig were retained, partly as an emergency provision in the event of engine failure, but mainly to help stabilise the ship. The first Officer, Bill Cook, was later to write:

"Perhaps we were the last of His Majesty's ships under the white ensign to use sail. I know I got a great thrill out of creeping astern of us, which because of the forecastle bulkheads between these areas were left unlined, so that the heat from the galley could permeate the steel to warm the messes. This proved extremely effective. A large 6-cylinder 400 HP Crossley semi-diesel engine was installed, together with two auxiliaries to provide electric power.

Views of the southern continent

Galley and Cook

SEAMAN Norman Tate told me that, with outside temperatures around 47°F, the forecastle accommodation was about 74°F. When, in Antarctic waters, the outside temperatures dropped below freezing point, inside temperatures were around 60°F.

The Captain's accommodation was on the upper deck, port side of the bridge, and astern of this was a drying room, and then my laboratory.

The officers were in two-bunk cabins running down each side of the main deck. The accommodation block was not the engine.

HMAS WHYATT EARP in Drydock at Williamstown. The ship was under refit to repair the storm damage suffered during the abortive Antarctic mission in December 1947.
discomfort throughout the voyage. Except commodity was a continuing source of fresh water, and shortage of this with all sorts of men. Unusually cheerful live with and in addition, was a Resources. He was used to living in Bureau of Mineral geomagnetic with the University of Western graduate in science from 22 The Navy, July-September 1995

the Wyatt Earp sailed 10 degrees each side of the vertical in an ordinary sea, and in very tough weather sailed 35 degrees or more. She was the stiffer ship I have ever known, with a period that a double roll at 4½ seconds. This was reassuring in one sense, for she was unlikely to capsize, but the angular accelerations generated as she moved through 100 degrees or more and back again in 4½ seconds had to be experienced to be believed. In a heavy sea, objects not securely fastened would be hurled horizontally against the bulkheads, while objects carelessly lashed would tear loose and follow the same trajectory.

There were two toilets on the main deck, one at the after end and one at the after end of the galley. The forward one was the toilet for the officers' suites and superintendents. The time-and-tide toilet however became more used as we approached the Antarctic waters, and then we used the toilet on the starboard side of the ship. The ships' toilets discharged straight onto the ocean from the side of the ship. The officer's toilet with a detachable non-return valve and when the ship rolled as she did most of the time, and the outlet port dipped beneath the waves, sea water contaminated by the toilet bowl recirculating the contents in a disgusting fashion it was no surprise the ship was moreporter than she was佣人.

I could not understand why provision had not been made for sea-water showers and for salt-water soup. It was not until long after the voyage had ended that I found out that crew members had salt-water soup and could collect pots of hot sea-water each day for washing from the cooling system of the ship's engines.

Leading Cook Stan Partridge had no relief cook. He worked from 0430 until 21.30 hours for seven days a week, with an occasional Sunday off, providing meals for the whole ship's company. Various women were rostered, one each day, to wash up and give other assistance in the galley. There was no refrigeration on the ship, and the voyage was limited to what could be carried in the form of tinned goods and dried provisions except for meat. Surprisingly, no tinned victuals were supplied in tins, such as canned beet or pork in brine or salted fish. The tinned meat tins resembled those provided to Australian troops in New Guinea during World War II — bully beef, ham, meat and vegetables, lamb and green peas, and sausages. We had tinned beef and dried milk. The dried vegetables were of good quality, as were the tinned meats. In general, the cook was faced with a lack of variety in the materials available to him, but he used his imagination and ingenuity to good effect, and we dined surprisingly well.

One problem he had was that, when stores were loaded in Port Adelaide, the cases of food were stacked in the hold, along with other stores, without any overlying stores had been consumed. Until late in the voyage, when the items that appeared on his bill of lading for the provisions could not be reached until late in the voyage, when the provisioning stores had been consumed. A passage had been left between the stores in the hold so that crew members could move them as consumption of the items in the store part of the ship through the engine room to the mess, and the bridge, thus avoiding crossing the exposed deck.

In an attempt to provide a source of fresh meat in the early part of the voyage, a cow's udder was on the port side of the forecastle was fished about a foot deep, and alternate layers of ice, meat and seaweed were stacked right up the ceiling. The sides of the cow remained chilled until we reached cold Antarctic waters south of the Convergence. At that stage the meat was removed and hung from the rigging to keep cool. However, various cows soon detected the stratagem, despite Mr Guay and Grey among themselves by patting shooting with a .22 rifle.

Changes had been provided among the foodstuffs but they were placed in an unheated store and, hence long, became rotten. Then they were thawed. Potatoes also thawed and became soft upon use because of unheated storage.

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22 The Navy, July-September 1995

FACSIMILE (02) 707 4327
The Japanese Maritime Self Defence Force
REBORN FROM THE ASHES

By Mike James

Rising, Phoenix-like, from the ashes of Japan’s WWII Imperial Japanese Navy, the new Japanese Navy, the Maritime Self Defence Force (MSDF), has grown slowly and surely to take its place as one of the world’s most powerful navies.

Currentl, the MSDF operates 17 conventional submarines, 30 destroyers and a host of smaller craft. By 1999 it had increased the total to over 100 and another maritime patrol aircraft. This does not greatly exceed most of the world’s navies with the French and British navies only dominant in the areas of nuclear submarines and aircraft carriers. When counting blue-water combatants disregarding patrol boats and other “brown-water” coastal forces, Japan emerges as one of the world’s third largest navies after the US and Russia with Asia’s most powerful fleet.

The roots of the JMSDF lie in the aftermath of Japan’s defeat in World War II. General Douglas MacArthur was appointed as commander of the Allied occupation forces, acting as de facto government. Under his direction the current Japanese constitution was written with the express intention of preventing the resurgence of a militaristic Japan. Under this constitution Japan was forbidden to have military forces and was not permitted to solve international disputes. In 1950 however, war broke out on the Korean Peninsula and the United States were plunged into the conflict to defend South Korea. US forces operated in Japanese bases throughout the war, providing air support, naval support facilities and staging posts while employing 8 US in Japan. As the Korean War drew to a close and the “domino theory” of communist expansion developed, the US and Japanese government approved the creation of a Southeast Defense Command (SDC).

The naval arm of the SDC, the Maritime Self Defence Force, is tasked with the defence of the home islands, later increased to defending Japan’s sea lines of communication (SLOC) out to a distance of 1000 nautical miles. Today the MSDF is organised as follows:

1. Four Escort Flotillas, each comprising a mix of up to eight anti-aircraft (AAM) and anti-submarine (ASW) destroyers. Flotillas are based at Yokosuka, Kure, Sasebo and Maizuru.
2. Submarines are operated in two squadrons based at Kure and Yokosuka.
3. Two Mine Countermeasures (MCM) Flotillas are based at Kure and Yokosuka.
4. Five District Flotillas (comprising six to eight destroyers and patrol boats) are based at Yokosuka, Kure, Sasebo, Maizuru and Ominato.
5. Numerous support ships divided amongst the five major bases.

Beginning in 1954 with a force made up of ex-US warships and survivors of the Imperial Japanese Navy of WWII, the MSDF today operates a modern, powerful force of state-of-the-art ships and submarines. While Japan’s constitution outlawed the use of force in solving international disputes, it is well to remember the maxim “capabilities, not intentions.” To this end an examination of the equipment and capabilities of the MSDF is in order.

Submarines

The submarine arm of the MSDF is made up of ten YUKUSHIO class (commissioned 1988-89) and four HARUSHIO class (commissioned 1990-91) with two more building. Basically similar in size to the 2350 ton YUKUSHIO to 2450 tons HARUSHIO, they all have a crew of 75. Both classes are equipped with a mix of twenty Sub-Harpoon surface to submarine missiles (SSM), Harpoon and Tomahawk anti-ship cruise missiles (ASCM).

 destroyers and patrol boats are capable of over 20 torpedoes. One boat is being used to trial a Sterling air-independent propulsion system for fitting to the new Improved HARUSHIO class of submarines.

Yokosuka, Kure, Sasebo and Maizuru.

2007 are used for trials with 20 torpedoes. Twenty years old, the oldest front line is but 15 years old with an average fleet age of eight years. This compares with the USN and RN where the average age of the attack submarine arm is 15 and 12 years respectively.

Destroyers

The MSDF has long operated a dual stream of destroyer classes. Anti-air warfare (AAW) destroyers to protect the Anti-submarine (ASW) destroyers from aircraft and missiles, allowing the ASW vessels to concentrate on their real task of denying the enemy submarines.

AAW Destroyers

The majority of the JMSDF surface combatants are designed for ASW and are armed with only a point defence
system anti-missile system such as the standard octuple mount for the eight nautical mile range Sea Sparrow missile on the last of Dahlgren's early low in weapon system (IWS) for missile defence. It was felt that the threat of Soviet bombers armed with long range anti-ship missiles such as the much as 180-kg rocket being air to air the two modern missile ships. The standard 610-mm 12-day launchers for the twenty-five nautical miles-templates to carry a full set of anti-missile systems on a convoy. With the exception of the most recent class, the MSDF's AAW destroyers have followed basically similar lines-mounting a standard single MK 112 launcher for two of the twenty-five nautical mile range Standard SM-1 Surface to Air missile (SAM). Additional armament usually includes an octuple Anti-Submarine Rocket (ASROC) launcher and two banks of triple Sea Harpoon missile launchers. For self-defence the usual armament has been two 5 inch guns at single mounts. None of the AAV vessels are fitted with a helicopter hangar although all the classes are fitted with a platform (vert-45°) that allows: 

During the eighties all of the AAW destroyers were fitted with two quad mounts for eight Harpoon SSNs and two Phalanx close in weapons systems (CIWS) for missile defence. The exception being the original AAV vessel, the JSO 10 AWA 21 Kongo class. Considered too old for upgrading with Harpoon and Phalanx, the ships remained armed with two 5 inch guns, ASROC and ASW torpedoes and in due course going into commission in February 1995. Replacing two 5 inch guns, two Phalanx close in weapons systems (CIWS) and six torpedo tubes carrying anti-submarine homing torpedoes are fitted. The heart of these vessels are their ASW radars and fire control systems. Primarily employed on the JSU's TINCON/SCRA cruisers, the lightweight and improved system existed on the JSU's allowing the ships to detect, track, engage destroy submarine threats at ranges far in excess of conventional AAW's. The Kongo class to be completed, the two ships of the ASW class, are designed to provide a Sea King helicopter, in addition to the Harpoon SSM quad mounts. The four Phalanx CIWS and an octuple Sea Harpoon SAM launcher. With so much attempted on a limited displacement it carries no surprise that stability may have suffered. Most of the stabilizers were incorporated into the design and the "Brasstrap" for rough weather helicopter operations. 

As a recognition of the limitations inherent in trying to do so much on a limited displacement, the new 1100 ton YAMAGUMO class would incorporate the ASW systems to allow the HATSUYUKI's still manage to operate Sea Sea Hawk helicopters, as well as being fitted with a towed array sonar and an incorporation of a vertical launch system. 

Construction commenced on a follow on to the ASAGIRI class, with four ships of the 4400 ton MURASAME class in hand two being under construction and two on order. The first of the new class, the KASUGA, one of her sisters. The displacement to 3250 tons and a rise in displacement to 3250 tons and a rise in displacement to 2400 tonnes. The JAPANESE MARITIME SELF DEFENCE FORCE

The most recent destroyer class to enter service are the four ships of the KONGO class. The first ship KONGO was commissioned in 1994 with the remaining three due to commission in 1995. These ships, initially, classed as destroyers but weighing almost 10000 tons at full load, are armed with a mix of cruise missile launchers, cruise missile launchers, cruise missile launchers and vertical launch (VERTREP) by helicopter hangar although several of the vessels with better armament. The oldest ASW destroyers in service, the MINEGUMO class set the pattern for the essentially similar YAMAGUMO class ships commissioned 1977-81. When proving a success, the MSDF requirement would allow the type to be expanded. The Harpoon SSM quad mounts are carried hence the stabilisers were incorporated into the design and the "Brasstrap" for rough weather helicopter operations. 

AASW destroyers-Submarine warfare has long been the major task of the JSDF's warships. With the completion of the class was delayed by the suspicions at the US legislative bodies in Japan and a revised programme was not having taken into consideration the work done on the ASW class had to be replaced by new missile launchers. The HATSUBUKI class, completed in 1976 with twin 154 mm guns, the two ships of the TAKASHI class (commissioned 1967-68) and the two 460-ton TAKAZUKI class commissioned 1967-68.

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The Japanese Maritime Self-Defense Force (JSDF) ships have a variety of capabilities that reflect the nation's strategic priorities. The JSDF has a mix of missile armed attack craft, patrol vessels, and mine hunters that are equipped with modern weaponry and capable of conducting a wide range of missions.

**Missile Armed Attack Craft (MACE) and Patrol Vessels**

- The Kongo-class MACEs are armed with up to 100 tonnes of cargo, capable of launching cruise missiles, and have enhanced sonar systems for anti-submarine warfare.
- The Atago-class are armed with Harpoon anti-ship missiles and possess improved fire control systems.

**Mine Hunters**

- The Shohou-class mine hunters have been modernized with upgraded sonar systems and mine-sweeping capabilities.
- The JMSDF operates two MCM support ships, which are equipped with MCM capabilities and are tasked with overseeing and supporting the fleet's mine countermeasures efforts.

**Support Vessels**

- The flagship JSDF vessels, the Nisshin-class, are equipped with advanced command and control systems and are capable of operating in all weather conditions.
- The JSDF operates a fleet of auxiliary vessels that support the fleet's operations, including those equipped with hangars for helicopters.

**Maintenance and Repair Vessels**

- The JSDF operates a number of repair and maintenance vessels that deploy to remote locations to support the fleet's operations.

The JSDF has a long history of modernization and expansion, driven by the nation's strategic and defensive needs. The JSDF is committed to maintaining a strong and capable fleet that is well-equipped to address a range of potential threats.
Mutiny and Black Magic

...HMAS Geranium 1923

By Greg Swinden

Launched at Greenock, Scotland, on the 8th of November 1915, GERANIUM was a Flower class slopge of some 1250 tons and capable of 16½ knots.

GERANIUM arrived in Australia in late 1919 with her sister ships MARGARET and MALLOON to conduct mineweeping operations (to clear minefields laid by the German raider WOLF). The three engagements gained them success as only one mine was swept, this being off Cape Enderby, Victoria on the 8th of September 1919.

All three were paid off from the Royal Navy in Sydney on the 18th of October and handed over to the RAN as part of the Royal Navy's gift to Australia. For the remainder of her career GERANIUM operated as a survey vessel, which often saw her operating in Northern Australian waters.

In mid-1921 GERANIUM was sent on a cruise to the Gulf of Carpentaria in a survey cruise which was to see the ship struck down in black magic and a mutiny of sorts.

On the way north GERANIUM called at Cairns and leaving Cairns that night nine of the men who were aboard ran across the Captain (Captain Harry Bennett DSO, RNI. and Lieutenant W. P. with the United States under a Command and Control systems program. Australia is to develop the system at a government-programmed height and speed, thus presenting an alternative and more attractive look for upcoming missile systems.

Current Status

Following the successful full scale engineering development program, another project, SEA 1229, has been established to acquire an Active Missile Decoy system, which uses the NULKA decoy, for the defence of RAN major surface combatants against Anti-Ship Missiles.

SEA 1229 is a phased project. The first phase is for the development of the Fire Control System, installation of the system into a lead ship, an FFG, and Acceptance into Naval Service by December 1997. A subcontractor's phase allows for installation in the remaining five FFGs and eight ANZAC ships.

The contact for Phase 1 was let in June 1993.

The Department of Defence announced in January that the first contract for the NULKA active missile decoy had been awarded with Australia Defence Industries (AWADI).

The licence agreement gives AWADI the right to market, manufacture and sell the NULKA system to the Royal Australian Navy and other approved customers.

AWADI was selected in 1988 as the Australian prime contractor to develop the launch and launch system and in the same year the United States Navy placed a contract with AWADI for the development of the payload.

The development process involved both the Royal Australian Navy and the United States Navy in comprehensive sea trials.

With development successfully completed and production underway, launch and system testing clears the way for AWADI to begin marketing in earnest.
THE OTTOMAN STEAM NAVY 1828 to 1923
By Bernd Langensiepen and Ahmet Guleruk
Published by Conway Maritime Press
Reviewed by Ross Gillett

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l

The Ottoman Steam Navy 1828 to 1923 is quite amazing. From 1828 up to and including the First World War, the Ottoman Empire was a major naval power, with a fleet of ships that were capable of challenging the Royal Navy. The book provides an excellent overview of the Ottoman Navy, from its early days up until the 1920s, when it was dismantled and its ships were sold to other countries.

The book is split into two main sections. The first section covers the Ottoman Navy from its inception in the 1820s, up until the First World War. It provides a comprehensive overview of the Ottoman Navy's growth, expansion, and its role in the First World War. The second section covers the Ottoman Navy's post-war history, including its dissolution and the sale of its ships.

The book is richly illustrated with photographs, diagrams, and maps. It also includes a comprehensive list of abbreviations and acronyms, which makes it easy to follow the various ships and fleet movements.

The book is written in a clear and concise style, making it easy to read and understand. It is a valuable resource for anyone interested in the history of the Ottoman Navy, or the history of naval warfare in general.

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OPVs, HOW MANY IS ENOUGH?

There has been considerable discussion about the proposed successor to the Fremantle class patrol boat. The debate is about the type of vessel needed and the number that should be obtained.

One option that is said to be under consideration is for a vessel much larger than the present Fremantles. Apart from benefits in range and seakeeping the real need for the increase in size is to enable the new vessel to carry a helicopter.

This type of vessel would no doubt have greatly increased capabilities. It is envisaged that it would have much better defences than the Fremantles. The helicopter would increase the area it could cover very considerably.

The RAN is acquiring such a ship would be taking a step up from patrol boats to something much more capable. A real offshore patrol vessel (OPV). Some navies would call them covert vessels.

In addition to increased capability another factor which will be affecting the mind of both Navy and government is the prospect of such a vessel presenting the opportunity for a joint venture with Malaysia.

The prospect of a larger helicopter carrying OPV is attractive. So too is the concept of a Transfield consortium building these ships in concert with Malaysia. The whole prospect seems a plus. Bigger more capable ships being produced for the RAN in a programme with real industry, trade and diplomatic benefits.

There always seems to be another side to the coin. In this case is the relevant word. If rumours are correct the cost of building these new ships would be such that 15 Fremantles will be replaced by only 9 OPVs.

There seems to be a trend here. 20 Attack class patrol boats were replaced by 15 Fremantles. Now it is suggested that 15 Fremantles will be replaced by 9 OPVs. Are the capabilities of the new ships such that they can make up the difference? Or is it that there will be less work for them to do?

In this context it is worth noting that the 200 nautical mile Australian Exclusive Economic Zone has recently been proclaimed. At the same time Australia has acquired new rights over the Continental Shelf. Within the Exclusive Economic Zone (EEZ) Australia has sovereign rights over the resources of the water, the seabed and what lies beneath the seabed. On the Continental Shelf Australia has sovereign rights over the seabed and what lies beneath it. The two areas overlap. The total offshore area to which Australia, on one basis or another, now claims sovereignty is about 15 million square kilometres. This includes water and seabed not just around Australia. There are Christmas and Cocos Islands in the Indian Ocean. Lord Howe and Norfolk Islands in the Pacific. Heard, McDonald and Macquarie Islands in the Antarctic. The offshore areas of Australia's subantarctic Territory are also included.
To patrol so large and in some cases distant waters will no doubt require ships larger than our present Fremantles. But surely we will need more than 9. That number would seem to be taking on increasing constraints, have to make a choice between having more OPVs and getting less of something else. This difficult choice might involve the question of replacements for the DDG's. Whatever the solution, it is to be hoped that it results in more than 9 OPVs. 

**Continued**

**THE NAVY LEAGUE OF AUSTRALIA**

**ANNUAL GENERAL MEETING 1995**

Notice is hereby given that the ANNUAL GENERAL MEETING of THE NAVY LEAGUE OF AUSTRALIA will be held at the South Park Motor Inn, Main Conference Room, No 1 South Terrace, Adelaide, South Australia on Friday 17 November 1995 at 8pm

**BUSINESS**

1. To confirm the minutes of the Annual General Meeting held in Canberra on Friday 11 November 1994.
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 30 June 1995.
4. To elect office Bearers for the 1995/1996 year as follows:
   - Federal President
   - Federal Vice President
   - Additional Vice Presidents (2)
5. General Business
   - To deal with any matter notified in writing to the Honorary Federal Secretary by 28 October 1995.

**ALL MEMBERS ARE WELCOME TO ATTEND**

By order of the Federal Council
Roger Blythman
Honorary Federal Secretary
PO Box 309 Mt Waverley 3149
Telephone (03) 9888 1083
Fax (03) 9888 1083

**A SLOW BOAT TO STIRLING**

By Mike James

In a career spanning 26 years, HMAS Ovens has on numerous occasions quietly slid down one of the most magnificent harbours in the world, but this would be her final such voyage. After some 407,000 nautical miles, Ovens was commencing her last voyage from Sydney, a journey of 21 days "round top" around northern Australia bound for HMAS STIRLING.

Ovens departed from the submarine base at HMAS PLATYPUS for the final time on Friday, 4 August 1995. A crisp sunny winter morning saw Ovens, some 60 crew, fifteen trainees, four assorted media and one somewhat apprehensive "NAVVY" correspondent, slide down harbour, dodging the ferries and pipsits and quietly run for the Heads. As quietly as one can that is, with a television helicopter buzzing around the masts like a hyperactive blowfly at a B-B-Q. Fortunately, upperworks still intact, Ovens escaped to the open sea and turned left, bound for HMAS STIRLING in WA. The 21 day journey would give the large contingent of Phase 3 trainees aboard the opportunity to gain additional experience towards the coveted "Dolphins" submariners badge. A passage through the Great Barrier Reef would also provide advanced piloting training for a number of the watchkeepers. As Ovens dive certification had lapsed, it had been decided that a southerly surface passage in the depth's of winter might be a bit much on the stomach's of some of the less hardy souls. A television crew from the Nine Network's 'Today' programme was aboard to record the unique nature of the life aboard while a photographer from the 'Age' newspaper compiled a photo essay of the submarine's routine. All declared themselves "surprised" by the conditions aboard, with some expressing themselves even more strongly. Several hours passed, while below, the usual bustle of departure gave way to the quiet routine of submarine life and the quiet duty of departure was over.

"Age" newspaper compiled a photo essay of the submarine's routine. All declared themselves "surprised" by the conditions aboard, with some expressing themselves even more strongly. Several hours passed, while below, the usual bustle of departure gave way to the quiet routine of submarine life and the quiet duty of departure was over.
A SLOW BOAT TO STIRLING

The passage out from Newcastle took OVENS almost directly abeam of the growing south-easterly swell, increasing the uncomfortable roll and making the first signs of queasiness in the stomach, definitely not improved by the forms from the diesel engines. Several of the trainees also looked a little sick so your correspondent didn’t feel totally at his own. After all money loves company.

Moving through the boat, one is struck by the almost lack of personal space to avoid the smell of diesel spreading through your other clothes. From lurid won experience I can also attest to how hard it is to get the taint off the skin and out of your hair.

A SLOW BOAT TO STIRLING

Almost impossible to fit into the standard bunk, simply because there is no end of the bunk, simply because there is no end to the width. Unfortunately this is bigger doesn’t necessarily mean better.

The passage out from Newcastle took OVENS almost directly abeam of the growing south-easterly swell, increasing the uncomfortable roll and making the first signs of queasiness in the stomach, definitely not improved by the forms from the diesel engines. Several of the trainees also looked a little sick so your correspondent didn’t feel totally at his own. After all money loves company.

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As night fell I reluctantly left the fresh air of the bridge and climbed back down into the confines of the sea. Red lights were already in place and dinner had already started. That was fine with me as I was still not feeling too well and just looking for something to distract me from the feeling of nausea that the boats motion was causing me.

What I found was Leading Seaman Bryce Chandler of Booroon South City, Coffs Harbour. LCDR Jones explained that it was planned to use her as an exotic training submarine until 1997 when she will be handed over to the WA Submarine Association.

Their intention is to submerge OVENS up to the casing in concrete, allowing her to be used as a display open to the public in addition to acting as a memorial to the submarines that operated from Fremantle in World War Two. Mr Nehl suggested that it was a far better fate for OVENS than being torn up for scrap metal to make razor blades. It was suggested that another submarine, one of the new Collins class, might take over the OVENS close association with the district.

Later that evening I watched as the visitors came to grips with the cramped nature of life aboard. Much as I had when I came on board previously, they managed to find every protrusion and hatch coming off at an angle, working to find every space and nook, and protrusion from their own lives. Much as I had when I came on board previously, they managed to find every protrusion and hatch coming off at an angle, working to find every space and nook, and protrusion from their own lives.
A SLOW BOAT TO STIRLING

The galley, tiny for the number of meals it has to produce, 80 at a time!

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STORM BOY, Москва, Россия

DIPLOMATIC DISARRAY

At the beginning of 1995 it was inconceivable that by mid-
year Australia would be diplomatically at odds with two major
countries and publicly criticising a third. In July Indonesia
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THE ROYAL AUSTRALIAN NAVY
IN THE SECOND WORLD WAR

By Joe Straczek

From the outbreak of the Second World War until the cessation of hostilities in August 1945, the men, women and ships of the Royal Australian Navy served in every theatre of operations, from the tropics to the Pacific to the frigid Russian convoys. They took part in almost every major naval battle from the Battle of the Coral Sea to the D-Day landings on D-Day through to the savage kamikaze attacks in the Philippines and Okinawa.

The personnel and ships of the RAN helped the Allied Navies establish and maintain command of the seas, and this facility had contributed significantly to the end of the war. This included the transport of men, equipment and material of war to the battle fronts in the Middle East, Europe, Asia and the Pacific. Ultimately, it was command at sea that allowed the troops, equipment and material of war to flow to the battle fronts throughout the south-west Pacific. After the war RAN ships were involved in the repatriation of all ranks. This included the Women’s Royal Australian Naval Service and the Nursing Services.

3,740 Australians died serving in RAN ships, included in these were 1,900 members of the RAN. In addition to this production, repair and modification work was also carried out. This work included:
- Relining of 4 inch, 4.7 inch and 8 inch naval guns.
- Modifying over 280 Army 40mm Bofors guns for mounting on RAN and RAAF Pacific fleet ships.
- Designing and modifying twin Oerlikon mountings to take 40mm Bofors (designed Bofors). Over 100 mountings were delivered.
- Design and production of a powered Bofors mounting.

RAN ships were involved in the dangerous but important task of convoys. They took part in almost every major naval battle from the hunting of the BISMARCK, the landings on D Day through to the destruction of the Japanese fleet in the Philippines and Okinawa.

Sustained damage as a result of a torpedo hit.

The major losses suffered by the RAN included:
- 149 men.
- 601 were delivered.
- 1100 Australian and New Zealand troops were convoyed to the Middle East.
- 2,400,000 tons of stores were delivered.
- 3,740 Australians died serving in RAN ships.
- 3,740 Australians died serving in RAN ships.
- 8,000,000 tons of war stores were delivered.

The war placed large demands on Australian manufacturing industry. Items which in the past were imported had to be manufactured in Australia. During the course of the war Australian industry provided the RAN:
- 4 inch guns: 268.
- Naval Mines: 12,316.
- Radar equipment: 174 sets.
- MK V/II Depth Charges: 34,000.
- Type M Depth Charges: 3,600.

Work also commenced on the construction of a torpedo factory and this facility had contributed significantly to the end of the war. In addition to this production, repair and modification work was also carried out. This work included:
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NAVY'S NEED FOR NEW DESTROYERS

By Navy Leager

The months go by and there is still no result from the Defence Department study into the number and capabilities of surface combatants that it is envisaged the Royal Australian Navy needs to fill its strategic role in the first quarter of the twenty-first century.

On the contrary, there are few delays in Project Sea 1400: the acquisition of up to eight new destroyers to replace the DDGs and older FFGs when they reach the end of their life.

It has been confirmed that completion of the preliminary studies for Project Sea 1400 has been delayed from 1995/96 to 1996/97. It is reported, but not confirmed, that the project definition studies have been delayed from 1996/97 to 1998/99.

The last of the DDGs is due to pay off in 2001. With the introduction of the Anzac class frigates, the RAN is expected to maintain its major surface combatant strength until 2001, after which it is envisaged that the Adelaide class frigates will take over.

It is proposed to give the Adelaide class frigates a major upgrade, quite unlike the upgrades to the Sea Vanguards that have been implemented in the past several years. This proposed upgrade will be made during the first years of the twenty-first century.

The proposal to fully arm the Adelaide class frigates is at the stage of major study. This study requires the identification of the number and capabilities that are needed to the Adelaide class frigates.

With so much dependent on projects which are currently only unsolicited proposals, the target strength for 2005 looks extremely optimistic. The chances are that the destroyer/frigate strength of the RAN will fall below eleven before the fourteen is reached.

Thus, if all these proposals are implemented promptly, by 2005, the surface combatant strength of the RAN should be:

- six upgraded Adelaide class guided missile frigates
- eight fully armed Anzac class frigates
- two new offshore patrol combatants

At first glance, this appears to be a significant improvement on the current position. However, it is an optimistic scenario.

At this stage the imaginative and much needed Adelaide class AAW upgrades are still proposals only. No commitment will be made until 1996/97.

The propostal to fully arm the Anzac class frigates is at the stage of major study. The Anzacs will be more capable than the DDGs, in other words, the Anzacs will be the primary multirole platform for the RAN.

The first of the Adelaide class frigates is due to pay off in 2008. To ensure timely availability of a successor design must be finalised and a construction contract signed by 2000.

To take their place in the balanced force that the Australian Defence Force needs in the increasingly uncertain years of the first quarter of the 21st century, the new Sea 1400 ships will need:

- A diverse and advanced air-defence capability including anti-missile systems, surface-to-air missiles, and long-range anti-aircraft missile systems.
- A strong and diverse anti-air warfare capability.
- A surface warfare capability capable of defending ships in company and with layered defence.
- A strong and diverse anti-submarine warfare capability.
- A strong and diverse anti-surface warfare capability.
- A strong and diverse command and control capability.

These are the key capabilities that are needed to maintain the RAN's strategic role in the twenty-first century.

Furthermore, even the most capable high performance combat aircraft are far from invincible: heed both the air war in Bosnia and the United States Air Force Air in the Persian Gulf in 1991. There, the only ships that actually provided any meaningful air cover were those with Sea Skimming Capability.

There are worrying reports emanating from Defence. There is an urgent need for new destroyers to replace the DDGs and older FFGs when they reach the end of their life.

The Royal Australian Navy needs to fill its strategic role in the first quarter of the twenty-first century. The Canberra defence minister has been quoted as saying that the RAN is expected to maintain its major surface combatant strength until 2001, after which it is envisaged that the Adelaide class frigates will take over.

It is proposed to give the Adelaide class frigates a major upgrade, quite unlike the upgrades to the Sea Vanguards that have been implemented in the past several years. This proposed upgrade will be made during the first years of the twenty-first century.

The proposal to fully arm the Adelaide class frigates is at the stage of major study. This study requires the identification of the number and capabilities that are needed to the Adelaide class frigates.

With so much dependent on projects which are currently only unsolicited proposals, the target strength for 2005 looks extremely optimistic. The chances are that the destroyer/frigate strength of the RAN will fall below eleven before the fourteen is reached.

Further, the RAN will not have the fourteen major surface combatants for long, unless a decision is made on the Project Sea 1400 is made promptly. It has taken eight years from the signature of the contract to build the first class to the commissioning of the first ship. This eight years is not exceptional by international standards.

Therefore, sea skimming missiles are a threat to all ships - war and, much more so, merchant. However, the threat is a very far cry from proving that sea skimming missiles will overwhelm properly defended warships. There is available the combination of phased array radars and new generation fighters, long range aircraft missiles, medium range missiles, short range self defence missiles and electronic counter measures such as the Vluka active all beam decoys.

However, there are other potential threats, wide in variety and intensity. Any realist would agree that some of these are far more likely than the threat of major invasion. We need a balanced force to respond to these threats and to participate in regional defence activities.

Furthermore, even the most capable high performance combat aircraft are far from invincible: heed both the air war in Bosnia and the United States Air Force Air in the Persian Gulf in 1991. There, the only ships that actually provided any meaningful air cover were those with Sea Skimming Capability.

Looking further ahead, the prospects are even darker. The RAAF's F/A18s, F111s and F35s are all due for replacement within a few years of each other - about 2010.

Clearly, the prospects of that massive block obsolescence problem, budgetary prudence and the need for a balanced force dictates a prompt decision on Project Sea 1400.
The Republic of Singapore Navy

By Mike James

The Republic of Singapore Navy is one of the youngest in Asia, having been established after World War II. Two with the Republic itself. Growing from humble origins as a constabulary force to today's modern navy, the RSN has been shaped by the constraints of mission and geography. As a small island state surrounded by larger neighbours, the RSN has had to adapt the strategy of "sea denial," denying the waters surrounding the island nation to would-be aggressors. This, in turn, has determined the structure and equipment of the RSN, leading to a combat force principally composed of missile and gun armed corvettes and attack craft, supported by a force of amphibious vessels for army support.

Tasked with policing the Straits of Singapore, one of the world's busiest and most vital waterways, the RSN must combat the almost endemic piracy that plagues the area, in addition to the more normal roles and functions of a navy. With plans afoot for further increases in the RSN's combat capabilities and Singapore taking a more active role in the region's maritime affairs, it seems appropriate to take a closer look at South-East Asia's most technologically advanced navy.

CORVETTES

The introduction into service of the VICTORY class corvettes, beginning in 1990, introduced a quantum leap in the capabilities of the RSN. Displacing 550 tonnes with a complement of only forty-nine (including eight officers), the six German-designed Lurssen MCB 52 class mount a 76mm gun, up to eight Harpoon surface to surface missiles (SSM), and six anti-submarine homing torpedoes. An Israeli-designed Barak vertical-launch point defence surface to air missile (SAM) system is scheduled to be fitted in the near future.

FAST ATTACK CRAFT - MISSILE

Until the arrival of the Corvettes, the main striking power of the RSN resided in the six Lurssen FRB 45 missile boats of the SEA WOLF class. Displacing 260 tonnes...
and armed with a mix of two 130 km range Harpoon and two 20 km range Gabriel SSMS, in addition to single Bullets 57mm and 20mm cannon, the SEA WOLF and her sisters are capable of almost long range, making them ideally suited for the style of hit and run warfare that characterises archipelago and inshore warfare. All six sister Squadron 185 of the first fast attack craft. They are scheduled to be supplemented and eventually replaced by a new design of fast attack craft to be built in Singapore.

This new design, the FEARLESS class, are under construction and displace 500 tonnes at a speed of up to 35 knots, making them ideally suited for the style of hit and run warfare that characterises archipelago and inshore warfare. All four are due to commission in 1995.

A number of projects that will expand the capabilities of the RSN dramatically in the years to come are currently underway. In addition to the new FEARLESS class fast attack craft, the RSN plans to introduce up to four Landing Ships (Platform/Dock) to replace the current class of aging MV22 Victory class vessels. The new vessels will operate helicopters and will have a stern ramp that can be lowered to allow landing craft to be loaded directly from the storage and vehicle area. The ships are designed to transport personnel and equipment to remote locations.

THE FUTURE

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THE REPUBLIC OF SINGAPORE NAVY
Pegasus
Next generation Mark V, high speed special operations craft

Halter Marine, Inc., of the Trinity Marine Group has been selected by the U.S. Special Operations Command (SOCOM) to build the Mark V, the next generation of high-speed craft designed to insert and extract U.S. Navy SEAL teams and other special operations forces (SOF) personnel.

The Halter/Trinity Mark V Pegasus class Special Operations Craft (SOC) is an all-aluminum monohull design variant of Trinity's XFPB 36' fast patrol boat now in service with the Mexican Navy, was selected after months of intensive testing and evaluation.

The initial SOCOM contract estimates it to be over $31 million, with options for up to 18 additional craft and transportation systems, bringing the potential contract value up to approximately $190 million U.S. All of the boats will be built at Equitable Shipyards, Inc., New Orleans, LA., an affiliated shipyard of Halter Marine, Inc. in the Trinity Marine Group.

SOCOM solicited proposals from shipyards with the stipulation that the vessels should be a variant of an existing parent craft. Nine proposals were received and Halter as well as Peterson Builders Inc. and Cougar Marine Inc. were selected to build actual vessels for testing and evaluation near SOCOM's headquarters at MacDill Air Force Base in Tampa, Florida.

Halter built two variations of the same design, but of different materials and power suites. The winning Halter Pegasus Mark V SOC is an all-aluminium monohull craft 82 feet in length with a 17.5 foot beam and seven foot nine inch depth. It is powered by two diesels developing 2,253hp each at 2,000rpm through two water jets.

The stringent SOCOM design and performance criteria included items such as: the boat had to be diesel powered and able to reach a top speed of well over the 45 knot minimum and cruise speed of over 30 knots in specified sea states; the boat's support equipment and personnel had to fit in a U.S. Air Force C-5 aircraft for rapid loading and unloading while meeting the aircraft's balance requirements; at light load the boat had to be able to carry its crew of five, a full load of fuel and lubricants, at least 6,800 pounds of payload including 16 fully armed and serviced crew members; and prime mover could not exceed 150,000 pounds, range at maximum speed had to be at least 500 nautical miles at cruising speed; the boat had to be able to launch, retrieve and store four inflated combat rubber raiding crafts and six outboard engines; the crew and passengers compartments had to be covered by removable hard canopies; the cockpit had to permit unobstructed weapons-living and quick access and exit; removable, track-mounted, sufficiently cushioned door shock absorbed seating was required as well as fore dons for a 500 gallon fuel bladder, and minimal radar, infrared and human eye detectability were also among some of the design features.

In making the announcement, John Dane III, president of the Trinity Marine Group said, "We knew this would be a very challenging competition for requirements which call for the world's faster patrol crafts of its size. We were quietly confident the Halter/Trinity Pegasus Mark V SOC would be selected based on previous Navy competitions we have won because of our mission and costs sensitivities and design and manufacturing experience and expertise."

The first two boats in the contract are scheduled to be delivered by September 1995. Dane said while no new employment positions will be created by the contract, it will keep approximately 60 people employed at Equitable. The shipyard is the site of the former Higgins Inc. where many of the famed U.S. Navy World War II PT boats were built as well as thousands of landing craft used in most theaters of that war.
Two Thai Warships

Two Thai Navy training ships, the guided missile frigates HMTS CHAO PHRAYA (hull no. 455) and HMTS KRABURI (457) arrived at Fremantle on Monday, August 7 for a four day visit.

HMTS KRABURI commanded by Captain Prayut Paksorn, RTN. had Rear Admiral Sumporn Polathorn, Deputy Commander Royal Thai Naval Academy embarked. The ship carried a complement of 16 officers, 19 enlisted men, 61 cadets and nine civilians.

HMTS CHAO PHRAYA (Commander Rungert Sattapanukul, RTN) carried a complement of 28 officers, 119 sailors, 80 cadets and nine civilians.

The Chinese-built ships, constructed at the Hudong Shipyard, Shanghai were officially opened by the Navy's Maritime father. The first time HMAS CERBERUS in Victoria. The ceremony was concluded with the

NAVAL NEWS Continued

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The concept of the studies is to reduce garbage and its disposal at sea. Lieutenant Polglaze obtained permission to take his "team" onboard from HMAS WESTRALIA's captain, Commander Steve Hooke before the ship sailed for Exercise Kangaroo '95.

Royal Navy Returns

The British Duke class (Type 23) frigate, HMAS MONMOUTH arrived in Fremantle on 26 July at the start of her visit to Australia. Lasing 14 days, the visit was the first to a Royal Navy warship to Sydney since 1988.

The deployment of MONMOUTH to east Australia puts remember the ships of the British Pacific Fleet (including several RANs) which featured prominently in the latter stages of the Pacific War. After Sydney, the vessel sailed at Brisbane, Townsville and Cairns before returning to the UK. She was in Brisbane on VP Day (15 August). Two other ships in her Task Group, the destroyer HMAS SHEFFIELD and the frigate RTA BRAMBLEDALE visited Darwin.

Displacing 4000 tonnes, the 133 metre frigate was commissioned in September 1993, the sixth ship of a class of thirteen ordered to date. She is armed with one 4.5 inch gun and two 30mm Oerlikon guns able to fire in both anti-surface and anti-aircraft roles, as well as Harpoon anti-ship missiles.

Sea Wolf missiles are carried for anti-aircraft defence and Stingray torpedoes for close-in anti-submarine protection. MONMOUTH's weapon systems are complemented by her embarked Westland Lynx helicopter.

Smoke does not always get in your eyes.

Classic Aircraft Carrier

One of the oldest and most honoured U.S. Navy aircraft carriers has got a five-month reprieve from the scrap heap and went on a sentimental voyage across San Francisco Bay.

The ship is the Hornet, a 51-year-old veteran of three wars and three space missions. Carrying a cargo of Navy veterans, the ship made the trip from Hunters Point in San Francisco to Alameda Naval Air Station, where it will be on display through at least October.

The Hornet looked like a huge gray ghost as four tugs slowly pulled it across the bay. The ship has no power of its own and the four-mile voyage took three hours.

The Hornet has been laid up at Bremerton, Wash., for 25 years and shows it. The paint is peeling, and weeds are growing out of the flight deck.

Inside, the Hornet has the feel of a floating haunted house. The navigating bridge is silent, and the deck is littered with pieces of equipment. The hangar deck, which resembles a huge garage for planes, is empty and echoes to the sound of footsteps. The ship's ladders go down and down into hundreds of compartments far below.

Yet the dead and empty ship is full of memories. It was launched in 1943 to replace an earlier Hornet, a famous ship that carried 16 B-25 bombers that made the famous first air raid on Tokyo. The previous Hornet was sunk in 1943, but this one was lucky - and deadly.

Pilots from the Hornet sank 1.2 million tons of Japanese ships, including a cruiser and a carrier, shot down 1,200 planes and earned 11 battle stars. The vessel also saw service in the Korean war and made three voyages to the waters off Vietnam.

'A piece of history,' Captain James Dodge, commanding officer of Alameda Naval Air Station, called it. "This ship also picked up three of the Apollo space missions and President Richard Nixon stood on this deck in 1969 to welcome the first men back from the moon." Dodge said in a lecture on the

Two of the BAF's Oberson class submarines working with a S-70B-2 Seaknight helicopter. (Photo - NPU)
The Canadian Department of National Defence (DND) is studying the concept of a Multi-Role Support Vessel (MRSV) to replace Maritime Command's three ageing auxiliary replenishment ships and provide Canadian forces with an organic logistics capability. The MRSV's secondary role would be to support forces operating ashore. A draft statement of requirements has outlined a hybrid vessel combining the features of a tanker with those of a roll-on/roll-off ferry. The diesel-driven single-shaft design has a deep displacement of 26,000t, an overall length of 195m, a maximum beam of 28m and a draught of 8.5m. Ice strengthening to Lloyds IAS or equivalent would allow for operations in near-Arctic waters and to move in first-year ice up to one metre thick.

Affordability is the key driver, with significant emphasis placed upon the use of commercial standards wherever practicable. Built-in weight is a feature of the design. Procurement processes may also be streamlined, with the DND adopting a performance-based procurement specification and employing commercial acquisition and oversight practices. Approval for Preliminary Project Development may be forthcoming later this year. Maritime command currently envisages a four-vessel MSRV programme, allowing two units to be based on both the Atlantic and Pacific coasts.

Legends of the base. What could be better, thought one, than a nuclear-powered carrier, like the Carl Vinson, or an old one, like the Hornet. The Vinson is already in port, so Dodge talked the scrappers into lending him the Hornet. He plans to have it open to the public as soon as he finds enough volunteers to clean it up a bit.

There was some talk yesterday about saving the ship. But seeing the ship again and riding aboard one last time were enough for Ray Crescent, Rivett.

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HMCS CANBERRA Rescues Noah's Ark

Eight crew members from the Royal Australian Navy's guided missile frigate HMCS CANBERRA visited the national capital on 31 July/1 August.

The Navy personnel carried out much needed repair work to the Noah's Ark Centre at Rivett Primary School, Rivett Crescent, Rivett.

"The Noah's Ark Centre has been associated with our frigate since the early 1980s and we come down as much as possible to help out," said Commander Matt Stipouch, Commanding Officer of HMCS CANBERRA. "Our crew will be providing some eager working hands to complete a number of outstanding jobs."
Launching Parramatta

During the opening stages of the battle for the Atlantic in World War II the Canadian Navy was sharply criticised by the Royal Navy. This came about through its failure to escort convoys safely, its lack of professionalism and skill in Anti-Submarine Warfare (ASW) against German U-boats. Following these charges the Canadian Navy embarked on a massive re-training programme and an upgrade of ships and ASW tactics. Throughout the remainder of the war the Canadian Navy was considered one of the best in the world. The skills and professionalism gained during the war have not been forgotten and are still in practice. Canada is now a world leader in ASW technology, building its own towed arrays, helicopter launch and recovery gear as well as helicopter ASW equipment and ships. Canadian designed and built ships are among the best in the world.

Sydney recently hosted a visit by HMCS VANCOUVER, a newly built “City” class frigate. What many in the media failed to realise and identify as a news worthy item was that this vessel is one of the new “stealth” warships entering the naval scene. The VANCOUVER is the second of 12 “City” class frigates which Canada is building. Her principal role is ASW and she is designed to stay at sea for 90 days free of all shore facilities in a hostile environment. It is in this environment that her stealth qualities can be appreciated.

The ship’s “stealth” features are not restricted to radar evasion only as many may have thought. The ship’s stealth features are not restricted to radar evasion only as many may have thought, but also infra-red (IR), magnetic and noise suppression.

By Mark Schweikert

HMCS VANCOUVER arriving alongside the Fleet Base East in Sydney, June 1995. (Photo - NAPA)
exhaust pipes and ducts throughout the ship as well as cooling ventilation of turbine exhaust in the funnel. The hottest part of the ship, as told to me by one of the evaluation officers, are the full angled panel covering the launch tubes. Two prairie air masker bubble units are fitted, these form tiny air bubbles over the hull of the ship to mask any radiated noise. The underwater bearings for the propellers and shafts are the same found on US nuclear powered submarines and are very quiet. These noise reduction measures reflect the ship's primary direction of ASW. As the ship is so quiet it makes it far more difficult for a submarine to detect. This gives it the ability to employ "Soft Kill" measures such as chaff and Electronic Counter Measures (ECM) which the small RCS enhances to further aid in concealing the ship from an incoming missile.

Magnetic Signature
The magnetic signature of the ship can also be manipulated to any setting that is desirable or necessary for the mission it is undertaking. This is achieved by a comprehensive on board degaussing system which can be utilised in any state and is continuously fine tuned.

Radar Cross Section (RCS)
The other stealth feature of the "City" class is its small Radar Cross Section (RCS). This 430 tonne 134 metre long frigate actually looks more like an open ocean sized trawler than a warship. A number of features have gone into giving the "City" class a low RCS, low number of topside radar reflecting corners, very few superstructure decks, an angled funnel, angled superstructure surfaces and flared hull sides. If one looks closely at the ship they will notice that no panel of the ship is at a 90 degree angle to the water line. This allows radar energy to be reflected in different directions rather than the one it originated from. Consequently only a small amount of radar energy actually makes it back to the searching radar, making the ship look far smaller than it actually is and far less detectable at longer ranges. Anti-ship missiles also have trouble locking onto the ship as their low powered search radar's must close in farther than would be desirable. At a range of 4km a search radar teamed with an incorrect bearing to intercept and start a search pattern for the ship may in fact engage a target. For the ship can employ "Soft Kill" measures such as chaff which incidentally was the only thing the class was lacking. The gun mount shell is also designed with "stealth" in mind with the turret sides being angled and the edges rounded.

Infra Red (IR)
IR photos of the ship in motion, show no heat emissions from the engine exhaust funnel. The hottest part of the ship, as told to me by one of the evaluation officers, are the pipe under the left launch tube which vents the missiles exhaust gases up and out.

Acoustic Suppression
Noise suppression has been achieved by a strict noise control programme. The propellers are designed to produce maximum speed with no cavitation. The two gas turbine engines are equipped with jet exhaust and its diesel engine on a double rabb mounting. Double rabling was also provided for other systems such as the gear box and where needed, noise attenuating resilient mounting and flexible connexions are also fitted to further reduce the acoustic signature. Underwater hull openings have been kept to an absolute minimum with the necessary openings designed in such a way to avoid turbulence or resonance. Two prairie air masker bubble units are fitted, these form tiny air bubbles over the hull of the ship to mask any radiated noise. The underwater bearings for the propellers and shafts are the same found on US nuclear powered submarines and are very quiet. These noise reduction measures reflect the ship's primary direction of ASW. As the ship is so quiet it makes it far more difficult for a submarine to detect. This gives it the ability to employ "Soft Kill" measures such as chaff and Electronic Counter Measures (ECM) which the small RCS enhances to further aid in concealing the ship from an incoming missile.

Weapons
Apart from the impressive stealth features of the ship which make it far more survivable in a modern naval warfare theatre its weapons and electronics also have the ability to fully defend it from almost any threat.

The ship's main anti-aircraft and anti-missile defence's are in the form of 24 Sea Sparrow missiles from two Mk 48 Vertical Launch Systems (VLS) located on either side of the ship. Although only 16 missiles are carried in peacetime, these are two STIR tracking radar's facing forward and all to control and guide the Sea Sparrows. During exercises with the RAN and RANZAF, A-4 Skyhawk and Tornadoes towing missile sized targets were launched against the "Vancouver" to simulate an air and anti-ship missile attack. Informed sources from the ship indicated that they were firing two Sea Sparrows each at two targets simultaneously.

To back up the anti-aircraft and anti-missile defence a Bolovski 57mm rapid fire gun. This gun can fire 220 rounds per minute at air, surface or sea skimming target using different types of ammunition for each target. The gun mount is unmanned and can change ammunition types automatically and in a split second. i.e. for surface targets or Hitz-Resistance fused pre-fragmented rounds for an air borne threat. The gun receives fire control data from one of the STIR illumination radars but can also take fire control information from other sources such as the Sea Giraffe search and tracking radar or from an optronic sensor, which incidentally was the only thing the class was lacking. The gun mount shell is also designed with "stealth" in mind with the turret sides being angled and the edges rounded.

The ship anti ship missile was to get past the RACS, the ECM, the Sea Sparrows, 57mm gun and the ship's towed sonar array. This is achieved by a comprehensive on board degaussing system which can be utilised in any state and is continuously fine tuned.

Anti-ship missile defence is a Bofors 57mm rapid fire gun. This weapon can fire 220 rounds per minute at air, surface or sea skimming target using different types of ammunition for each target. The gun mount is unmanned and can change ammunition types automatically and in a split second. i.e. for surface targets or SSDR-Resistance fused pre-fragmented rounds for an air borne threat. The gun receives fire control data from one of the STIR illumination radars but can also take fire control information from other sources such as the Sea Giraffe search and tracking radar or from an optronic sensor, which incidentally was the only thing the class was lacking. The gun mount shell is also designed with "stealth" in mind with the turret sides being angled and the edges rounded.

If an anti ship missile were to get past the RACS, the ECM, the Sea Sparrows, 57mm gun and the ship's towed sonar array it then has to contend with a Mk 15 Mod 1 Phalanx Close In Weapon System (CIWS). This weapon is a stand alone bolt to the ship's gun system which detects a target and classifies it as friendly or hostile. If hostile it then tracks the target and fires 3000 30mm rounds per minute at it. The Phalanx is equipped with a six barrel fast firing gun with a range of 1km and can also be targeted from inputs by the command and control centre or placed on automatic mode.

The anti-surface warfare (ASuW) component is made up of two Mk 141 quadruple launchers for 8 AGM-84D-1A Harpoon anti-ship missiles. This is one of the latest versions of the Harpoon anti-ship missile and has a range of approximately 130 km and a 227kg HE warhead.

The ships ASW weapons are mainly air launched from the EH 101 helicopter. This large helicopter can travel long distances and gives the frigate the ability to patrol 120,000 square km. It can also independently prosecute a submarine contact with dipping sonar, tomography or radar as well as being able to provide Over The Horizon Targeting (OTH) for the Mk 46 Harpoons. First line maintenance can be carried out on board the ship as well as some second line maintenance. A helicopter landing recovery system is fitted making it possible to launch and recover the helicopter up to sea state 6. It is hoped that the Sea Giraffe will be replaced by the EH 101 helicopter in the near future.

The ship launched ASW weapons comprise two twin Mk 32 Mod 5 torpedoes or two quad Mk 32 Mod 1 or Mod 5 active or passive torpedoes. On board ASW sensors include an AN/SQS50 or AN/SQS-41 mounted sonar and an AN/SQR-91 towed sonar array.

The radars on the ship include the Sea Giraffe and SPS-49 which have both been selected for use on the ANZAC frigates. The Sea Giraffe radar is capable of detecting and tracking both high flying and slow skimming anti-ship missiles out to a range of 44km and as mentioned before, can supply tracking data to other weapons systems such as the 57mm gun or even the Sea Sparrow missiles.

The Raytheon SPS-49 is a long range air and sea skimming radar able to detect a 2.5m target at 457kms and able to track 250 targets simultaneously. The SPS-49 gives the ship this added ability of an impending air threat as possible with the Sea Giraffe providing close range detection and tracking cover in a high clutter environment.
HAMC VANCUnVER

The 57mm gun is one of the best anti-missile defence weapons on the market today. Its fire control system, for detection, identification, classification and engagement is as well as presenting a comprehensive index. The 0.9 Mach missile, such as the Harpoon or Exocet, to travel 15km is approximately 50 seconds. For a missile "City" class frigate is its fire control combat system, which allows the weapon system to engage and destroy a target in less than a second. The computer has also been designed with stealth in mind, evidenced by the angled and rounded sides of the turret.

Another unique feature of the "City" class frigate is its fire control combat system. In a modern naval high threat environment, the ship's combat system allows the operator to provide target engagement data to the weapons system. All the operator needs is to keep the cross hairs on the target. An optoelectronic fire control system, such as the AN/SQR-501 CANTASS towed array sonar, allows the operator to engage simultaneously, whilst the radar illuminators are engaging other targets. The Sea Sparrows on the class are extremely well suited to defend from low flying aircraft at short range and high diving or sea skimming anti-missile missiles but not for long range anti-air defence. The ship has the capability to use longer range anti-aircraft missiles and this may be a future upgrade option. The addition of longer range missiles such as the US Standard SM-2MR would allow the ship to keep potential attacking aircraft at a further distance from it and provide some anti-air defence for the Sea King helicopter and for a Mechanized combat. All in all the "City" class frigate is indeed an extraordinary and described with the ability to take on nearly any assigned naval task. The technology represented is now considered the bench mark for new warship design.

CHARACTERISTICS

Displacement: 4300 T (Operational) 4750 (deep draft). Dimensions: length 134m, beam 16m, draught 5m. Machinery: 2 shafts. CODCOG: 2 shafts 145000 bhp turbines, 1 SEMT-Pielstick 20 PA-2820 MPC diesel. Armament: 8 RGM-84D-1A Harpoon surface to surface missiles. 2 ASROC Vertical Launch Systems (VLS) for 24 (war time) Sea Sparrow Missiles, 14 in peace time. 1 Bolob 57mm L70 Gun. 6 12.7x50 cal machine guns. 1 Mk 15 Mod 1 Phalyn 20 mm CIWS. 2 twin Mk 32 Mod 9 torpedo launchers. (24 Mk 46 Mod 17 (tubes) and 6 5.5” bow tubes. Electronics: AN/SSG-595 or AN/SSG-510 hull mounted sonar. AN/SPS-51C/ANTASS towed array sonar. AN/APS-56 air search radar. Sea Giraffe HC 150 air/surface search radar. 2 SIR illumination radars. MK 171 EFP. Type 107 navigation radar. A-159/6 Jun TACAN. Countermeasures: 4 Shield II decoy launchers. 3/4 wave ASQ52 towed acoustic decamph. RAN/SEAS SQ-53C ECM. Communications intercept equipment. Helicopter: 1 Sea King ASW helicopter. Complement: 135 officers and ratings, accommodation for 230.

RCS. As mentioned before the ship lacks an optoelectronic sensor or optoelectronic fire control director. This video imaging unit can be slaved to a gun or missile fire control radar in order to provide target engagement data to the weapons system. All the operator needs is to keep the cross hairs on the target. An optoelectronic fire control system, such as the ones found on the Royal Navy’s Type 22 batch 3 and Type 23 frigates allow another target to be engaged simultaneously, whilst the radar illuminators are engaging other targets. The Sea Sparrows on the class are extremely well suited to defend from low flying aircraft at short range and high diving or sea skimming anti-missile missiles but not for long range anti-air defence. The ship has the capability to use longer range anti-aircraft missiles and this may be a future upgrade option. The addition of longer range missiles such as the US Standard SM-2MR would allow the ship to keep potential attacking aircraft at a further distance from it and provide some anti-air defence for the Sea King helicopter and for a Mechanized combat. All in all the "City" class frigate is indeed an extraordinary and described with the ability to take on nearly any assigned naval task. The technology represented is now considered the bench mark for new warship design.

**BOOK REVIEWS**

**THE NAVY IN FOCUS IN WORLD WAR II**

By Sydney Goodman and Ben Warlow
Published by Maritime Books

This is the eighth naval photograph booklet produced by Maritime Books. In this book the authors have illustrated an unprecedented number of photographs of ships in action from 1939 to 1945. The illustrations come from the private collection of Sydney Goodman. Many of these fine illustrations are being publicly published for the first time.

The ships illustrated in this book are arranged alphabetically with one photo per page. Each of the photographs has a single paragraph caption which briefly encapsulates the history of the ship.

An interesting cross section of ships has been selected to illustrate this book. Apart from the usual battleships, aircraft carriers, cruisers, destroyers and frigates, a number of miscellaneous craft are also illustrated. One of the more interesting is the torpedo training ship HAMS MENELAUS. Originally built as a monitor she is shown with a single torpedo tube mounted over her bows.

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**STATESMEN & SAILORS: Australian Maritime Defence 1870-1920**

Published by Bob Nicholls

STATESMEN & SAILORS: Australian Maritime Defence 1870-1920 describes the battle to establish and develop an Australian Navy. The book describes also the important and dominant role played by Admiral W.R. Creswell in his fight to establish an Australian Navy as opposed to a division of the Royal Navy in Australia.

In conducting his research Bob Nicholls has made extensive use of archival material in both the United Kingdom and Australia. Many of these sources have previously not been used by researchers of Australian navy history. Accordingly, the book is one of the more original works on Australian history, especially naval history. Previous books on this subject have been very limited in their coverage and research. STATESMEN & SAILORS: Australian Maritime Defence 1870-1920 has set a new benchmark for such publications.

This book should not only appeal to those interested in naval and defence history but also to readers in the development of the relationship between the newly established Commonwealth of Australia and the United Kingdom. How the Commonwealth related to the maritime interests of the England and the Empire and the powers of the Commonwealth are clearly described here.

Unlike most scholarly works, the author has not only researched and written the book but has also privately produced and distributed it. The fact that the author has had to go to this extent to see the fruits of his labours is in itself an indication of his strong interest in the history of shipping.

Overall this is an excellent book covering a very important period of our history. STATESMEN & SAILORS: Australian Maritime Defence 1870-1920 will remain for many years as a standard reading for anybody studying the development of Australia’s navy and defence in general. Highly recommended.

STATESMEN & SAILORS: Australian Maritime Defence 1870-1920 is now available in Australia or can be purchased from the USNI, Annapolis, Maryland, USA. The book is a highly recommended addition to the naval enthusiast’s library and provides many hours of informative reading or browsing.

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Throughout the Second World War, the Royal Navy recorded and analysed the course of the naval war. This was done for two reasons; one was to collect information for the writing of the future official histories. In order to disseminate the lessons learnt a number of Battle Histories were produced and distributed to units of the Royal and Commonwealth navies. These Battle Histories subsequently formed the basis, with other reference material, for the writing of Naval Staff Histories. This latest offering is titled “War With Japan” and was originally published in six volumes. This reprint has been published in four volumes each with an accompanying map case.

The first Book consists of the original Volumes 1 and 2. This covers the political and strategic background to the war and the initial defensive phase, including the invasion of the Philippines, the battle of the Coral Sea and Midway. The second half of Book 1 provides a detailed analysis of the Pacific War through to the battle of Midway. This includes a study of the development of the Pacific Fleet and the command and control of the war against Japan. Book 2 covers the campaigns in the Solomons and as the operations of Japanese submarines against Australia. Also dealt with in Book 2 are submarine operations and blockade runners in the Indian Ocean. British operations in the Indian Ocean, including the occupation of Madagascar, are also covered. This book covers the period when Allied sea power began to sway the balance against the Japanese and they were eventually forced onto the defensive.

Book 3 is the third combined volume in this case Volumes 3 and 4. The first half of the book covers operations in South East Asia, Central Pacific advance and the division of British naval forces between the British Pacific Flotilla and East Indies Flotilla. The second half of Book 3 deals with the blockade of Japan by submarines and mining. While much has been written about the US Navy’s submarine campaign less is known about the Royal Navy’s participation in this campaign. Of equal importance to the submarine campaign, but again little known, was the extensive mining campaign against Japanese ports. This is coupled with the submarine campaign destroyed the Japanese merchant marine and crippled her military-industrial infrastructure.

The final book, Book 4, commences with the defeat of the Japanese in the Central Pacific and the invasion of Iwo Jima, Borneo and Okinawa and finally Japan’s ultimate surrender. Though combined into four books the integrity of the original six volumes has been maintained. For ease of handling the maps which were at the end of each volume have been removed and placed into slip cases.

Most recent books that have been written about the war against Japan approach this war as the “Pacific War” and totally ignore operations in the Indian Ocean, Burma and Australian waters. This is especially true with American books which tend to cover Pearl Harbor, the fall of the Philippines, the battle of the Coral Sea and Midway and then go onto the central Pacific campaign and Japan’s surrender. British books on the other hand, keep reminding the reader about the “Forgotten Fleet” and only scantily cover the other details of the war in the Pacific. The “War With Japan” suffers from none of these faults. It is the most comprehensive series of books dealing with the naval war against Japan ever to be published.

Originally written to be read by professional naval officers, these books lack the excitement or the conspiratorial theories which some authors feel they must insert into their books today in an attempt to increase sales. Naval Staff Histories were written with the intention of passing on knowledge and providing a basis from which naval officers could learn the lessons of the war. As such they are perhaps more valuable than some of the more recent offering which deal with the war against Japan.

Given that the original volumes were written some forty to fifty years ago these books contain some minor errors in the text. However, these are only superficial and in no way detract from the value of these books. The narrative chapters of the various volumes are supported by a large number of appendices containing supplementary information, orders of battle for both sides, statistical information and lists of various historical documents and signals. The scope and magnitude of these four books is truly magnificent, drawing together every aspect of the naval war against Japan.

Extensive use has been made of explanatory footnotes and at the end of each volume a comprehensive bibliography is included. Interestingly, and very unusually this bibliography is arranged so as to show the principle documents used in each chapter. This will prove to be an invaluable aid to researchers.

The “War With Japan” which is pleasing is that the service rendered by ships of the Royal Australian Navy is not glossed over as in most commercial publications. The role played by the cruisers, destroyers, corvettes and support ships is placed in the context of the various campaigns. The only thing which detracts from these books is the price which ranges from £55 to £70 for a volume. As a boxed set they will cost £190. While these prices will put a hole in the average wallet the books are of a high quality and very well produced and do represent excellent value for money. Also noting how official histories have a tendency to appreciate in value faster than most normal books, this set may represent a valuable investment.

All in all, the “War With Japan” consisting of over 1600 pages supported by numerous organisational charts, tables and some important facts represent one of, if not the best history ever written about the naval war against Japan. These books are a must for anybody interested, not only in the naval war against Japan but also, in naval warfare generally. They not only describe the strategy and tactics of the greatest oceanic war ever to have been fought, but also provide an objective analysis of the errors and limitations on both sides. The “War With Japan” will prove to be an invaluable reference and research tool which will last the test of time and is very highly recommended.

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The Indonesian Tribal class frigate, MARTHA CHRISTINA TITAHANU, was the former HMS ZULU.

One of the remnants of the Indonesian Navy of the 1960s, the old Don class depot ship, shown here laid up, after her withdrawal from active service.

The Command Ship MEDITATAKU was completed in 1961 as a submarine depot ship. Ship is now used as a flagship for the eastern force.

The Indonesian Tribal class frigate, MARTHA CHRISTINA TITAHANU, was the former HMS ZULU.

The Claud Jones class frigate, SAMADILUH, ex USS JOHN R PERRY was transferred from the USN in 1971.

One of the more modern mine warfare vessels currently in Indonesian service is the Tripartite minehunter PULAU RUPAT.

The South Korean logistic support ship CHELUN JEE.

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Australian Coastal Minehunter

The Minister for Defence, Senator Robert Ray, has laid the keel of the first Australian-built coastal minehunter (MHC) at Newcastle.

On Tuesday 12 September he opened the new $25 million Australian Defence Industries' construction facility at Throsby Basin, Newcastle before activating machinery to lay the keel of HAWKESBURY, the first MHC to be built completely in country.

The opening also marked the start of operations of the largest glass-reinforced plastic (GRP) ship production facility in Australia.

The new minehunters are more than 50 metres long and fully equipped, will weigh 720 tonnes. They will be the largest GRP vessels to be built here. In all, six MHCs are being built for the Royal Australian Navy.

The fast-track project, to enable the timely introduction into service of this high priority capability, involved choice of the proven Italian Gaeta design with the first hull being moulded in Italy.

The imported hull of the first MHC, HUON, arrived in Newcastle on September 1 and is being fitted out.

Lights flashed and bells rang after Senator Ray pressed a button for a crane to lay the first mat of fibreglass in the 52 metre steel mould for the MHC's hull, some 20 metres above his head.

The six 720-tonne minehunters will be based in Sydney at HMAS WATERHEN. From there they will work to ensure that Australian ports and sealanes are free of mines.

Soviet Submarine Arrives

The old Foxtrot submarine delivered from Russia to Sydney in September. The boat is shown in Harbour with her towing vessel.

The former Soviet submarine was retired from active service in 1994 after her sale to the Australian company.

The Fastnet will be refitted to be placed on exhibition and public inspection at the National Maritime Museum.

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ADI has continually developed and upgraded its material management system and expertise in both commercial and defence supply systems. This allows ADI to offer the Navy much more to facilitate purchasing and inventory control functions.

In addition, ADI’s testing and calibration centres in Sydney, Melbourne and Perth are available to check any equipment for the Navy.
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