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*The Magazine of
The Navy League of Australia*

APRIL, 1981

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THE NAVY

Vol. 43

APRIL, 1981

No. 2

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The magazine of the Navy League of Australia



The first Soviet Kirov class nuclear powered guided missile cruiser (CGN) conducts sea trials in the Baltic Sea in late 1980. The ship, armed with new anti-ship cruise and surface to air missiles was expected to continue trials into 1981. Forward of the bridge are sited 20 hatches covering a similar number of SSN-X-19 anti-ship missiles and another 12 smaller hatches for SAM 4 long-range A/A missiles. (Photo — USN).

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Halfway Around the World in Eighty Days

By LCDR R. G. THOMAS, RAN
Commanding Officer, HMAS FREMANTLE



Arriving in Sydney Harbour for the first time, 27th August, 1980. (Photo — RAN).

WHEN HMAS FREMANTLE arrived in Sydney on 27 August last year to a hot reception from the media, the controversy which had arisen over the ship's overweight problem appeared to be the main concern of the Press representatives.

The fact that the ship had just completed what is claimed to be the longest solo passage by any patrol boat seemed to escape recognition. The overweight problem was always more significant in terms of contractual specifications than it was in terms of operational performance.

The Fremantle Class were chosen as replacements to provide substantial improvements in endurance, sea-keeping, and habitability over the ageing Attack Class ships in service. What better could there have been of proving the qualities of this new class than for FREMANTLE to sail from the United Kingdom to Australia. Despite the obvious advantages of such a proving run for the first of class, the decision for FREMANTLE to steam to Australia was not taken lightly. Patrol Boats built by Brooke Marine Ltd for the Royal New Zealand and Omani Navies had made their delivery voyages as deck cargo on a heavy lift ship and such an option obviated much of the administrative effort required to sail a small warship half-way around the world. However, the issue was decided by the desire of the RAN to learn as much as possible about their new PTF as soon as possible, and the unsettling loss of a newly refitted Omani guided missile patrol boat over the side of a heavy lift ship during a storm in the Bay of Biscay.

In March, 1979, alternative passage plans east and west about were presented to the Australian Naval Representative in London and the less enticing but more prudent "east via Suez" plan was duly submitted to Canberra for approval. At that stage the Arab-Israeli conflict was still smouldering and a delivery

voyage via the Panama Canal and spiced with port visits such as Bermuda, Acapulco, San Francisco, and Pearl Harbour seemed a likely event. But, although a lot was to change in world affairs and the completion of the ship at Lowestoft in the ensuing 15 months, the way home didn't and on Saturday, 7th June, 1980, FREMANTLE sailed from what had seemed her permanent home in Lowestoft on passage to Sydney. East Anglia produced some rare blue sky for the ship's departure, perhaps in an effort to lure her back but it was a final parting.

Passage of the Channel and South West Approaches was made in excellent weather with super-refractive atmospheric conditions providing an amazing radar picture of the English Coast from Great Yarmouth to Dover and the coast of the continent from Zeebrugge to Calais, with all contacts therein. The second day dawned on a flat calm sea and Ushant was rounded into an unusually calm Bay of Biscay. The area's well-known reputation was restored by a freshening south-westerly wind in the afternoon which reached Force 6 and gave Fremantle an uncomfortable 24 hours until past Cap Finisterre.

The remainder of the passage to Gibraltar was thankfully uneventful.

The all too short day visit to Gibraltar was followed by a weekend visit to Cagliari in southern Sardinia. A brief spell of steep head seas was encountered before arrival at Cagliari and this necessitated delaying the ETA two hours — the only late arrival of the trip. For the remainder of the ship's time in the Mediterranean the weather was idyllic and the passage from

Cagliari through the Straits of Messina and Western Greek Islands provided a most memorable highlight to the trip. During this time the opportunity was taken to allow the hands to bathe over the side on three occasions. The ship's transit of the Corinth Canal at first light on the day of arrival at Piraeus was a spectacular event which delighted the amateur photographers among the ship's company.

If the weather up until Suez had seemed a little too good to be real, the conditions changed for the worse from then onwards. Continual overcast and light to fresh north-westerly winds persisted throughout the transit of the Red Sea. Daily temperatures varied between 27° to 32°C and the humidity was oppressive. The ship's company was glad of the effective air-conditioning but the cool interior conditions did have their drawbacks. Overnight the condensation on the bridge windows necessitated operating the windscreen wipers continually to maintain clear visibility for the Officer of the Watch. The Navigating Officer's sextant telescope also lacked an effective demister. To add to the climatic assault, a sandstorm was encountered at sea and the ship had a distinctly two-tone appearance by her arrival in Djibouti to fuel on 2nd July, 1980. The starboard side of the mast and superstructure was brown from the caked dust.

From the ship's departure from Djibouti until her arrival in Singapore, the ubiquitous south-west monsoon made the passage via Bandar Jissah (Oman), Karachi, Marmagao (Goa), and Colombo less than pleasant and, at times, decidedly difficult.

The winds which never eased to less than 15 knots and occasionally gusted to 40 knots in squalls created a long, large swell of 15 to 25 feet which followed the ship ceaselessly. During this portion of the voyage FREMANTLE joined a Royal Naval Task Group transiting the area and received some welcome assistance in the way of fresh bread, news bulletins, and movies. Manoeuvring for station-keeping during those weeks was more akin to surfboard riding than shipbuilding.

The ship and her company were well in need of the seven-day maintenance period in Singapore at the end of July. Our arrival at Johore Shoal Buoy was greeted by HMA ships BRISBANE and SWAN. The ship was in familiar territory at last. If hopes were held for some calm equatorial sailing through the Indonesian Archipelago, they were quickly shattered a day out of



HMAS FREMANTLE, August, 1980 (Photo — RAN).

Singapore, when the sonsoo's antipodean relative the CE Trades took over the task of constant companion. Fortunately, the head seas were not of the same magnitude as those which followed the ship in the northern hemisphere and conditions were no more than uncomfortable. FREMANTLE arrived in Darwin to a gratifying warm welcome on 11 August, having called at Surabaya en route from Singapore. The passage from Darwin to Cairns was made against some uncomfortably strong south-easterly winds. The strong high pressure system over South Australia caused a deep low in FREMANTLE's morale. During the five-day visit to Cairns engineers from North Queensland Engineers and Agents (who were building the follow-on ships) scrutinised every part of the FREMANTLE seeking apparent confirmation of ideas or how some difficult constructional aspect was overcome in the prototype.

Whatever the attractions of northern Australia or sunny Queensland, the day every member of the ship's company had awaited since February finally arrived on 27th August, 1980, when FREMANTLE entered Sydney Harbour at 0915 escorted by HMA ships IBIS, SNIPE, and BOMBARD. The trip from Lowestoft to Sydney of 14,509 nautical miles had been completed to programme in 80 days at an average passage speed of 13 knots. No significant defects occurred during the passage and opportunities were taken to prove all systems. The ship's company had lived onboard for five and a half months without any undue effect on morale or health.

FREMANTLE is a prototype and undoubtedly her Australian built sisters will benefit from the vast amount of experience gained from her passage to Australia.

For the RAN FREMANTLE represents a quantum leap forward in surveillance capabilities; for those who stood by her and sailed her home, FREMANTLE represents an experience never to be forgotten.

Front Cover Photo
HMNZS MONOWAI (Photo — RNZN)

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HMAS FREMANTLE leads the Attack class patrol boats HMAS AWARE and HMAS BARBETTE into Darwin Harbour at the end of her delivery voyage from Great Britain. (Photo — RAN).



One Weapon Danger

Reshet class missile gunboats. (Photo — Israeli Navy).

In October, 1973, some 300 men of the Syrian Navy put to sea to fight the Israeli Navy in the Yom Kipper War. The Syrian sailors were confident of victory. They were, after all, using Russian-built fast attack craft, armed with surface to surface guided missiles, also made in Russia. The fast attack craft were of the OSA and KOMAR types and the missiles were the legendary STYX (SS-N-2). The Syrians knew for certain that they had the invincible weapon.

Not only the Syrians, but the whole world knew that that weapon — STYX — had proven invincible against the Israeli destroyer EILATH in 1967, and again in 1971 when used by the Indian Navy against Pakistan.

The world now knows that the Syrians' confidence in their one significant weapon — which they believed invincible — was misplaced and very much so. The Syrians suffered a resounding maritime defeat at the hands of the Israelis.

Contrary to earlier reports, the Israelis won not because their own surface to surface guided weapons (GABRIEL) proved faster, more flexible or longer ranged than the Syrians' STYX, nor because their own fast attack craft were faster or more manoeuvrable than those of the Syrians. The Israelis won because they had developed, and fitted to their fast attack craft electronic counter measures which over rode the guidance systems used by the Syrians and redirected the STYX missiles after they had been launched.

The result was that not one single Syrian (or Egyptian) launched STYX

missile found its target (1). On the other hand, the Israeli GABRIEL found its target repeatedly and devastatingly.

The Israeli development of ECM for use against ship-launched SSGW, was, apparently, wholly unknown to the Syrians, their Russian masters, and their Egyptian allies. The Syrians were 100% confident that they had the weapon to make them invincible at sea. Under Russian guidance, they developed their Navy around this one weapon STYX and paid little, if any, attention to other aspects of maritime weapons and warfare.

In summary, the Syrians failed to develop a maritime force balanced to meet the possible needs of their strategic circumstances, and put all their money on one solitary type of weapon. The Syrians paid the full penalty for their capital error of judgment — conclusive defeat at sea at the hands of the Israelis.

Any realistic student of Australia's maritime affairs and defence matters is aware of successive Governments' emphasis upon maintaining and developing a balanced Australian Defence Force.

by A. W. GRAZ/BROOK

Under this policy of a balanced force, we have a Navy with airpower, submarines, destroyers, mine counter measures craft, etc. The RAAF maintains a bomber strike force, a tactical fighter force, a long range maritime patrol element, C130 transports and so on. The Australian Army maintains an Armoured Regiment, infantry, jungle fighting capabilities, special air service forces, etc.

Successive Australian Governments have steadfastly refused to deploy all our defence financial resources against the most likely threat. Available money has been spent on a balanced Defence Force, regardless of whether possible threats envisaged require (say) tanks, fighters or mine counter measures. The Australian policy has been if we may need them, we must keep at least some units of each arm. Australia must maintain a balanced force. The risk of putting all our money on one arm or weapons system, and then finding the enemy has something better, is too high.

In short, Australia has repeatedly refused to make the capitally conclusive error of judgment made by the Syrians. What, then, has Australia to learn from the Syrian defeat?

The answer lies in the tendency apparently developing, in recent months, in the Australian Defence Force, of depending upon not one arm, but upon one weapon — the HARPOON missile system.

Recent announcements and reports confirm or suggest that this undeniably effective weapon is to be fitted to a wide diversity of Australian ships and planes:

The RAAF's P3C ORION aircraft — and possibly to the F-111Cs.

The RAN's surface warships — the four FFGs building in the US and to the three DDGs HOBART, PERTH and BRISBANE when they undergo their half life modernisation.

The RAN's six OBERON Class submarines as they undergo their half life modernisations.

It has even been reported that HARPOON is to be fitted to the RAAF's P3B ORIONS — at the expense of fitting modern ASW equipment when these aircraft are refurbished in the next two or three years.

The world's defence commentators have recognised that HARPOON today (in 1981) is an extremely effective weapon against major maritime surface targets — merchant ships, destroyers and larger warships.

HARPOON's versatility of guidance system and launching method and platform is very impressive. The missile can be launched from first class combat aircraft such as the F111C, heavier, slower, longer-ranged aircraft such as the P3C, from destroyers from frigates, from fast attack craft, or from submarines.

In surface ships, the missile can be launched from the TARTAR launcher, from the STANDARD missile launching system for surface to air missiles, from the ASROC launching system such as is fitted to many of the US Navy's escort sized ships, or from coffin launchers of the type fitted to missile armed fast attack craft. The same basic missile can be launched from submarines' torpedo tubes.

From Australia's point of view, HARPOON has another major advantage — commonality with our major allies such as the United States, and with other friendly regional maritime powers such as Japan.

There is no denying that HARPOON is an extremely effective weapons system — against surface warships, an enemy's trade or an invading force. Few defence observers would argue that we should not include HARPOON in our weapons inventory.

However, it can be argued equally strongly that we should limit our dependence upon HARPOON. Australia should not make the mistake of the Syrians and come to be wholly dependent upon one weapon — HARPOON or any other weapon — for our maritime defence.

Firstly, there are some things HARPOON cannot do. For example, HARPOON cannot be used against submarines and mines — the most likely threat, most easily applied, to Australia.

Secondly, history shows that the very apparent invincibility of a weapon system convinces potential enemies of the absolute necessity of finding an effective counter to that weapons system. In due course, the potential enemy finds a counter to an "invincible" weapon. The threat to him is so great that he simply must find that counter, just as the Israelis



P3B Orion anti-submarine aircraft of the Royal Australian Air Force. (Photo — RAAF).

found the answer to STYX to the surprised and conclusive discomfiture of the Syrians.

Although the Government has, and practices, a policy of developing and maintaining a balanced force, there are reports which suggest too much dependence may be developing upon HARPOON.

The foundations for this concern rest upon reports that the RAAF's P3B ORION aircraft, which are due for modernisation, will be provided with HARPOON, but the P3Bs' obsolescent anti-submarine detection and weapons equipment will be left untouched — and inevitably become ineffective against the types of submarines that will be operated by regional navies (and are already

operated by Russia in our region) in the mid-1980s and beyond.

A change in emphasis of role of the ORION P3Bs — from ASW to anti-surface target — would suggest strongly that Australia is entering a "one weapon danger" situation. We would be risking relying upon one undeniably effective weapons system (HARPOON) to do a great deal more than it is designed to do.

NOTES

(1) NO VICTOR, NO VANQUISHED — THE YOM KIPPER WAR by Edgard O'Ballance, London, 1979, p323.

ACKNOWLEDGEMENTS

Contributors in this issue of "The Navy" include Harry Adlam, Graeme Andrews, Lieut-Comdr D. Davies, RNZN, David Diment, Geoff Evans, Tony Grazebrook, Mark Lee, Michael Melliar-Phelps, John Mortimer and Lieut R. Thomas, RAN. Photos were supplied by Graeme Andrews, Mark Lee, Michael Melliar-Phelps, Ministry of Defence, John Mortimer, Navy Public Relations (Sydney, Canberra and Melbourne), the Royal New Zealand Navy and the United States Navy.

CORRECTION

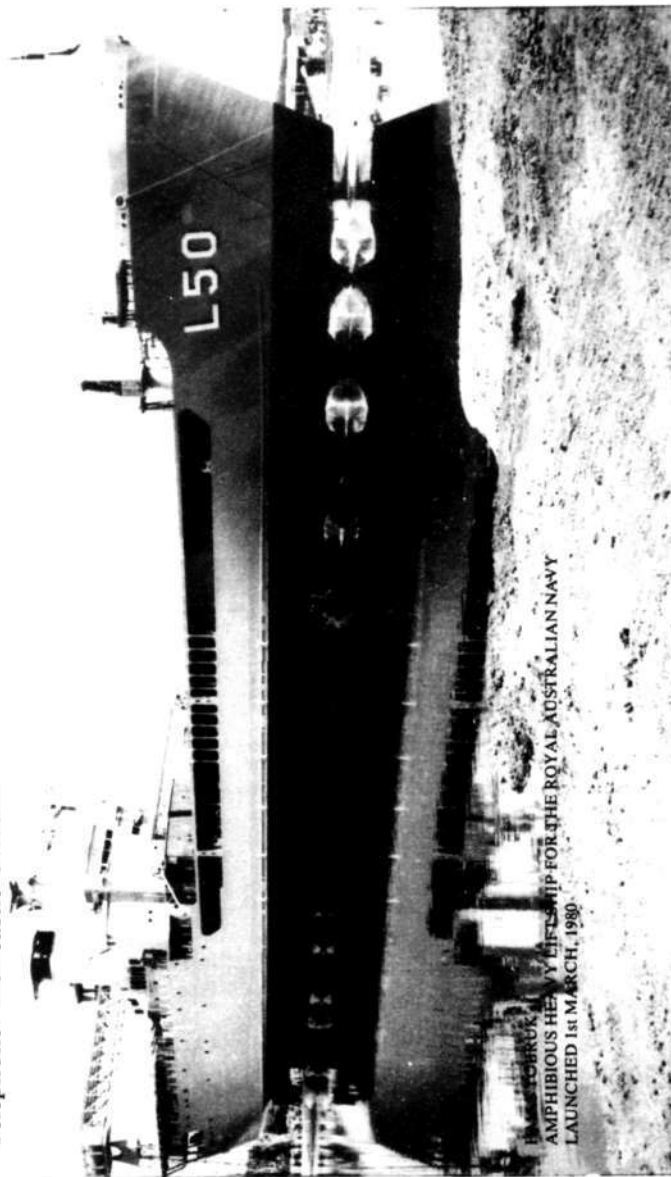
January, 1981, issue — Page 9. The dimensions of the Grimby class sloops should have read: Length 266 feet, and beam 36 feet. Page 10 — Top photo of HMAS PARRA-MATTA taken 1940.



Gabriel surface to surface missile launchers, singles (fore) and twins (behind). (Photo — Israeli Navy).

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HMAS TORRUK
 AMPHIBIOUS HEAVY LIFT SHIP FOR THE ROYAL AUSTRALIAN NAVY
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NAVAL ROUNDUP

By: GAYUNDAH



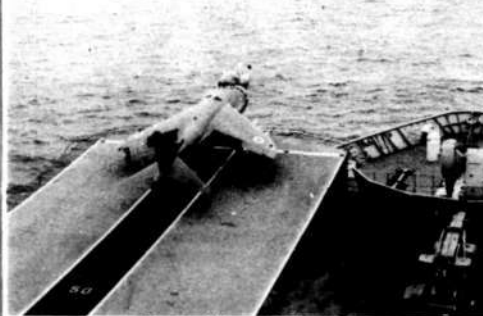
HMS INVINCIBLE

The first Sea Harrier Ski Jump Launch at sea took place in the English Channel from the anti-submarine cruiser HMS INVINCIBLE on 30th October, 1980.

Sea Harrier (Serial No. XZ 439), flown by Lieutenant Commander David Poole, Royal Navy, was launched at 1000 hours, followed by the second (Serial No. XZ 440) flown by Mr Taylor Scott, test pilot for British Aerospace, at 1002 hours. The ramp angle was 6½ degrees and the take-off speed of the aircraft was approximately 80 knots. The adjacent photographs show the launch procedure.



(Photo — Ministry of Defence).



(Photo — Ministry of Defence).



(Photo — Ministry of Defence).



(Photo — Ministry of Defence).

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The new Soviet Sovremenny class guided missile destroyer. (Photo — USN).

THE ADMIRAL WHO ENDED WORLD WAR II DIES

Grand Admiral Karl Doenitz, who presided over Nazi Germany's unconditional surrender in World War II as Adolf Hitler's successor, has died at the age of 89.

Doenitz, who commanded Germany's devastating submarine campaign was buried without military honours. The Defence Ministry, apparently fearing pro-Nazi demonstrations at the funeral, banned soldiers from attending in uniform.

Doenitz, who escaped the hang-man's noose, but served a decade in prison for war crimes, had been ill for several weeks.

Doenitz's wolf-pack, U-boats came close to winning the battle of the Atlantic and isolating Britain in the war. To the end of his life, Doenitz maintained the submarines would have cut the lifelines to the US if Hitler had realised the strategic importance of the sea and given priority to the submarine fleet.

But Doenitz was loyal to Hitler to the end. After Hitler's suicide in the chancellery bunker as Russian troops closed in, Doenitz called him "one of the greatest German heroes". Hitler repaid his loyalty by naming Doenitz his successor as Fuehrer in the testament Hitler wrote before he shot himself on 30th April, 1945.

Eight days later Doenitz presided over the unconditional surrender of Germany after a futile attempt to surrender in the west and fight on against the Russians in the east. Doenitz

considered the Allied demand for unconditional surrender a great political mistake which allowed Russia control of East Europe.

He said: "At the end of the war the Americans made a wrong assessment of the Soviet Union. Instead of a military aim the United States should have followed political goals. It failed to prevent the forward thrust of the Soviet Union into Europe." (From: UPI, Bonn, "Daily Telegraph", 27th December, 1980.)

NEW SOVIET DDG

Undertaking sea trials in the Baltic, along with the new heavy cruiser (battlecruiser) KIROV was the new Soviet guided missile destroyer SOVREMENNY.

The ship, seen here unarmed, was expected to have its major armaments installed after the trials.

AMPHIBIOUS EXERCISE

HMAS BALIKPAPAN (L 126) and HMAS JERVIS BAY (GT 203), recently tested the procedures involved in loading and unloading ships in a waterway.

As part of the exercise, code-named operation "Golden Sirand", the two ships transferred stores and equipment across the bow door of BALIKPAPAN and through the stern door into the vehicle deck of JERVIS BAY. In the test, five-ton trucks, fork-lift trucks and mobile cranes were transferred between the two ships. The tests were carried out over a nine-day period and were described as "successful".



HMAS BALIKPAPAN and HMAS JERVIS BAY. (Photo — RAN).

THE NAVY

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HMAS PERTH, 1976. (Photo — RAN).

HMAS PERTH DEPLOYED TO NORTH-WEST INDIAN OCEAN

The guided missile destroyer HMAS PERTH returned to Australia in early December, 1980, following a three-month deployment to the Indian Ocean, and was re-deployed to the north-west Indian Ocean area in late January.

The deployment would be on an independent national basis, although it was hoped that PERTH would be able to take advantage of opportunities to co-operate and exercise with allied naval units in the area.

TOP FLEET AWARDS TO FOUR SHIPS

The most coveted fleet award in the Navy, the Duke of Gloucester Cup for the most efficient ship in the RAN, has been

won by the guided missile destroyer HMAS BRISBANE for the 1980 calendar year.

BRISBANE's sister ship, HMAS HOBART, was awarded the Otranto Shield for the best and most consistent gunnery and missile achievements for the year, and the Commodore Wardle Cup for outstanding communications service in or to the fleet went to the destroyer escort HMAS DERWENT.

The Kelly Shield, for the ship considered to be superior in general efficiency in the mine warfare and patrol forces, was awarded to the Ton class minesweeper HMAS IBIS, and the Pakistan Shield for the best overall sporting performance, went to the destroyer escort HMAS SWAN.

NEW CANADIAN FRIGATES

The Canadian Government in December, 1980, announced the selection of Saint John Shipbuilding and Dry Dock Co. Saint John, NB and Scan Marine Inc of Longueuil, Quebec, to enter into the negotiations for the competitive contract definition phase of the programme to acquire six new Patrol Frigates.

Contracts for this phase are expected to be awarded to the two finalists in about six months, after which they would have approximately 15 months to prepare final design proposals and plans for constructing the new ships. The Canadian Patrol Frigate Programme, which was begun in 1977, is the first step of a long-term fleet replacement programme for the navy.

CANADIAN DESTROYERS TO RECEIVE REFITS

In August, 1980, funding approval was received to proceed with the refurbishment and refitment of the Canadian Navy's fleet of 16 operational steam-driven destroyers.

The programme, known as the Destroyer Life Extension programme (DELEX), is designed to ensure that the destroyers can continue to operate usefully and safely until their eventual replacement. The programme is two-phased and will be carried out over the next six years at a cost of \$186 million (1980 dollars). The first phase will involve work to maintain the combat capability in 10 destroyers of the Annapolis, Restigouche and Mackenzie classes. The second phase is intended to maintain the seaworthiness of these 10 ships, plus that of six of the older St Laurent class destroyers.



The improved Restigouche class destroyer escort, HMCS KOOTENAY, 10th March, 1978. (Photo — John Mortimer).

MAIDEN VOYAGE FOR TOBRUK

The navy's new amphibious heavy lift ship, **TOBRUK**, left the builder's yard on 16th December, 1980, for the first time under her own power.

The ship proceeded down the Hunter River to Newcastle, where she entered the floating dock to receive final preparations for her first sea trials. These trials commenced on Monday, 19th January, in calm weather off Newcastle.



TOBRUK, on sea trials, 19th January, 1981. (Photo — RAN).



TOBRUK, 16th December, 1980, passes under the Stockton Bridge. (Photo — RAN).



TOBRUK, 19th January, 1981. (Photo — RAN).

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GUIDED MISSILE FRIGATE DAMAGED

Australia's first guided missile frigate, the 3600 tonne **HMAS Adelaide**, suffered major damage to her propeller when she ran aground in Puget Sound, near Seattle, 8th January, 1981. There were no injuries to members of her crew of 183 officers and sailors.

ADELAIDE was undertaking high speed trials over the US Navy sound range in Carr Inlet, approximately 25 nautical miles from Seattle, when the accident occurred.

The guided missile frigate was refloated at high tide early the next morning and returned to Seattle with the assistance of tugs.

The ship entered dry dock on 9th January for an extensive and thorough survey to determine the full extent of damage. The accident is expected to delay the frigate's programme and subsequent arrival in Australian waters. **HMAS ADELAIDE** was scheduled to arrive in Australia in November of this year.

An RAN Board of Inquiry has been convened to determine the cause of the accident.



HMS HERMES Tugs ease the aircraft carrier **HMS HERMES** out of dock to a tidal berth in Portsmouth Naval Base during January, 1980. **HERMES** is nearing the completion of a one year refit during which she has been fitted with a 12 degree ski-ramp to enable her to operate Sea Harriers more efficiently. (Photo — Ministry of Defence).

TWO CANBERRAS TO BE LINKED

A ceremony was held on 31st January, on board the P&O liner **CANBERRA** at San Francisco.

Commodore J. F. Wachter, CBE of P&O Cruises, presented to Commander Brian Wilson, RAN, Commanding Officer of **HMAS CANBERRA**, Australia's newest guided missile frigate, now being completed at Seattle, an inscribed silver salver as a permanent link between the two ships.



HMAS COOK undergoing heeling trials. (Photo — RAN).

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M Class Frigates



JAGUAR. (Photo — Royal Netherlands Navy).

In 1954 the Royal Netherlands Navy received from the United States six 850-ton Wolf class corvettes for North Sea escort and fishery protection work. The vessels were supplied under Mutual Defence Assistance Programmes (MDAPs) and had been constructed to the wartime Patrol Craft, Escort design. As commissioned in 1954-55, the six escorts were armed with one 3-inch dp, six 40mm and eight 20mm anti-aircraft guns, 40 depth charges and two depth charge racks.

By the early 80's the armament had been altered by the addition of a hedgehog and the deletion of all 20mm guns. With a top speed of 15 knots and a complement of 96 officers and men, the Wolf class have served the Dutch fleet for over 25 years, and by now are beginning to reach the end of their useful and economical lives.

To replace the six corvettes, a four ship group, designated "M" class, has been prepared for construction in Dutch shipyards, when funds become available for building to commence in 1983. Although the "M" class will have as its primary mission, North Sea operations, the new frigates will need to be capable of operating across the entire North Sea sphere. In addition the Dutch Naval Staff have stipulated that the "M" class should be able to work with and if need be replace the numerically stronger "Standard" class frigates, of which 12 will eventually be in service.

However, one must question whether the "M" class, when completed in 1986-89, will in fact replace the Wolf class or the Van Speijk class frigates which by the end of the present decade will each be 20-24 years old.

When fully commissioned the new frigates will be capable of operating with the Standard class, a fact based primarily on the similarity of command, sensor and weapons systems. The major difference between the two classes will be manpower levels required: 90 of the "M" class as opposed to 176 in the

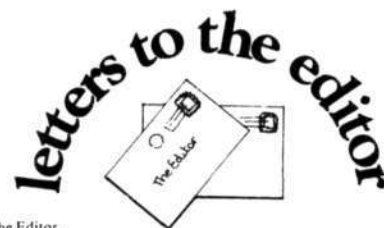
"Standards". Despite the difference in displacement of the two types, 2500 tons — "M" class and 3500 tons for the "Standard" class, the former will mount an impressive array of weapons.

Two quadruple Harpoon and one octuple Sea Sparrow missile launchers will be carried. The former will be mounted amidships immediately behind the bridge and Sea Sparrow atop the helicopter hangar. A reload facility is to be provided for the latter. For self-defence the "M" class frigate will mount an OTO Melara 76mm and one small VSRAP (Very Short Range Air-Defence) gun on the foc'sle in "A" and "B" positions respectively. ASW weapons include four launch tubes for torpedoes plus one Westland Lynx helicopter.

At the present stage of planning, the complement for the new frigate is envisaged to number between 80 and 90 officers and men. However, accommodation will be provided for another 10 as well as a marine detachment of 30 men.

Maximum speed in combat has been set at 28 knots with a cruising range of 4000 miles at 20 knots. Power in the ships will be via one Rolls Royce Olympus gas turbine plus two diesels. Engine room spaces will be unmanned, all equipment being handled and monitored from the main control room. At present the ship is being designed for cruising on one diesel at 14 knots or on two diesels for 20 knots. A single screw will provide the necessary sea speeds with a single rudder mounted directly astern of the propeller. Stabilisers are planned to be fitted forward of amidships and level with the bridge deck.

The present Dutch plan calls for four frigates which will complete in the late-80's, many years after the corvettes they replaced, were decommissioned. A decision in respect to addition units shall not be made for a number of years yet, but with the encroaching retirement of the Van Speijk class, further ships may well be ordered to bridge this gap, mentioned previously. The mid to late-80's will see the Dutch fleet at good strength with major units comprising three area defence Tromp class guided missile destroyers, 12 Standard class frigates, six modernised Van Speijk class frigates, six submarines and a balanced force of patrol, minesweeping and support craft. The addition of the "M" class shall add significantly to the strength of this navy and for the North Atlantic Treaty Organisation as a whole.



The Editor,
The Navy,

Dear Sir,

Regarding the letter from Mr Tom Strasser (January, 1981) on the Russian fleet at Tsu-Shima, I offer the following list of transports as shown in "Tsu-Shima—Grave of a Floating City" by A. Novikoff-Priboy. The colliers, etc, to coal the fleet were supplied by contract by the Hamburg-Amerika line and do not appear in any account.

Auxiliary Cruisers

Name	Year Launched	Displacement (Tons)	Speed (knots)	Armament
URAL	1890	10,500	19	All armed
DNIEPR	1894	9640	19	with 14 guns
RIONA	1892	12,500	19	smaller than
KUBAN	1900	12,000	18.5	120mm and two
TEREK	1899	10,000	19	torpedo tubes

Transports

KAMCHATKA	?	7207	12	8 guns small
ANADYR	?	12,000	13	8 guns small
IRTYSH	?	15,000	10.5	8 guns small
KOREA	1899	6163	12	Nil

Tugs

ROUSE	?	1202	16	Nil
SVIR	?	Very small	11	Nil

Hospital Ships

ORYOL	1889	6163	19.5	Nil
KOSTROMA	1888	3507	11	Nil

Warner in "The Tide at Sunrise" also mentions a tug ROLAND and a ship MALAY. In "the Emperor's Sword" by Busch a transport YAROSLAVL is mentioned as being used as a prison ship. He also states that seven auxiliaries accompanied the fleet into battle and that three were sunk, URAL, KAMCHATKA and RUSSE.

Reuterdahl in JANES Fighting Ships 1906-07, claims that RUSS (tug) and URAL were sunk and tug SVIET with transports, ANADIR, BELGIA, IRTITOK and COREA escaped to Shanghai.

Further, according to Busch, on the 21st May the KUBAN and TEREK were despatched to cause a feint off the Japanese coast. On 25th the Russians sent six auxiliaries, including two colliers, to Shanghai as they had no further use for them.

Busch also suggests that the reason for the tour of "The Great White Fleet" in 1908 was to impress on the Japanese that they would not make the blunder that the Russians had with a badly trained fleet. (The Americans had only recently occupied the Philippines, etc.)

I would also like to inform readers that an excellent article on the cruiser VARYAG can be found in WARSHIP No. 11 (July, 1979).

As regards to the article "Air Power and Gun Power to Remarry" might I recommend interested people who read it, to peruse the article, "The USN's Flight Deck Cruiser" in the No. 3 issue of 1979 WARSHIP INTERNATIONAL.

Yours faithfully,
A. J. LEE.

Page Fifteen



WOLF. (Photo — John Mortimer).



**If they were
any tougher
they'd rust.**

THE VISIT OF USS ENTERPRISE

by DAVID DINIEN

BETWEEN 31 July and 3 October, 1964, Task Force 1, comprising USS ENTERPRISE (CVAN 65) USS LONG BEACH (CIGN) and USS BAINBRIDGE (DLGN) conducted Operation Sea Orbit, the first circumnavigation of the world by a nuclear-powered naval force.

Commanded by Rear-Admiral B. B. Streen, USN, the ships "steamed" a total of 30,216 nautical miles in 65 days without refuelling or reprovisioning. The task force conducted underway demonstrations for visitors from 12 foreign nations along both coasts of Africa and South Asia and made port visits at Pakistan, Australia and New Zealand. Task Force 1 departed from Gibraltar and steamed south and east. The voyage terminated at Norfolk, Virginia, the port from which the ships had deployed to duty with the Sixth Fleet in the Mediterranean Sea in May, 1964.

As the Sydney press commented when ENTERPRISE visited in September, 1964 as part of this cruise: "Not even the most spectacular statistics will prepare Sydney for the surprise it will get at the size of the American nuclear-powered aircraft carrier."

ENTERPRISE was ordered on 16 August, 1957, laid down on 4 February, 1958, launched 24 September, 1960 and completed on 20 December, 1961. When launched, ENTERPRISE displaced

75,700 tons standard and 83,500 tons full-load with a length of 1123 feet overall, a beam of 133 feet, a width of 252 feet across the flight deck and a draught of 37 feet.

By any measure, ENTERPRISE was — and, of course, still is — very impressive. Indeed, being of such impressive proportions, the ENTERPRISE could not visit Melbourne. The Sydney press stated — in yet another display of Sydney/Melbourne rivalry: — "The ENTERPRISE yesterday by-passed Melbourne — it is just too big to enter Port Phillip Bay." Sydney Harbour, of course — which had seen so many ships come and go — had room enough for the ship. However, careful preparations had to be made. As the press commented: "Two officers were flown from the ENTERPRISE to confer with the port's senior pilot, Captain C. Macdonald who will bring the ship to its berth."

The berth was to be Athol Bight, the only place in the inner harbour deep enough to accommodate the carrier and

where, during the war, the QUEEN ELIZABETH and QUEEN MARY had anchored as troopships. Captain Macdonald had prepared thoroughly and was confident: "I have been three weeks studying the charts, distances and every inch of water... Just five minutes to get the feel of the ship and then I will bring her straight in..." The carrier would have, according to the Press, a minimum of 14 feet of water under its keel, in fact, the carrier's propellers did "churn up the harbour mud."

Sydney was eager to see this naval "monster" and presented a welcome that was in proportion to its size. A typical Sydney press description of the ship was: "Its length, 1123 feet, is the distance from the Quay to Bridge Street and the ship is too high to sail under the Harbour Bridge and is twice as long as the new (!) Overseas Shipping Terminal in the Quay."

At the same time USS LONGBEACH was arriving in Melbourne and the USS BAINBRIDGE was visiting Fremantle. So it was the "Big E" herself which entered Sydney Harbour on Friday, September 4, 1964. Predictably, the carrier dwarfed everything in sight, as it passed through the Heads at 1300.

The press was filled with spectacular photos of ENTERPRISE — her deck crammed with aircraft — moving through the heads and down the Harbour. Fifty thousand spectators crammed North and South Heads and the harbour foreshores. The crowd at Bradley's head "laughed when a passing Manly ferry was ludicrously dwarfed by the ship's huge grey walls. The band on the ENTERPRISE played *Waltzing Matilda* and seemed so close that the spectators took up the tune and began singing.

The carrier, described in the press as a "movable 51st State", made its way to Athol Bight. So much room was needed to allow the carrier to "swing" at anchor that she seemed to be moored outside the Bight rather than inside.

On the Friday and Saturday nights, the carrier was floodlit at the waterline to

prevent a "sneak" attack. Two or three cutters from the carrier joined police launches in a picket patrol around the carrier while on deck sailors with rifles and fixed bayonets stood on guard.

Sydney witnessed the worst traffic jams the northern harbourside suburbs had yet experienced as people attempted to drive down to Athol Bight to obtain a glimpse of the ship. Sydneysiders had no actual point of comparison except HMAS MELBOURNE or HMAS SYDNEY. MELBOURNE had just returned on 2 September from two and a half months in South-East Asia. Tens of thousands of

Sydney as only 1200 tickets were issued daily by the US Information Service.

While Sydney's traffic was in chaos, the sailors from the Enterprise spent what was described in the press as a "bright" weekend. Activities ranged from "free admission to the zoo" to the highlights of Kings Cross. The sailors came ashore with \$50,000 but, as the press stated: "Had trouble spending it". The sailors were "shouted" free meals and drinks. It appears that only the poker machines were untouched by the feeling of friendship displayed to Australia's allies. And friendship it was. The USS ENTERPRISE was a reassuring sight in



USS ENTERPRISE leads the USS LONG BEACH. (Photo — USN).



The "Big E" arrives in Sydney on 4th September, 1964. (Photo — RAN).



USS ENTERPRISE rounds Bradley's Head towards her anchorage in Athol Bight. (Photo — RAN).

people drove to see the ENTERPRISE and jammed Sydney's traffic for hours. Cars packed the roads from the Bridge to Bradley's Head. An ice-cream vendor who had set up his van in Ashton Park (above Bradley's Head) sold 45 gallons of ice-cream in three hours! The NRMA stated that the demand for service on the Sunday was abnormally heavy.

Thousands of people contacted the RAN to offer hospitality for a member of the carrier's crew. Only a few fortunate people were allowed to tour the ship in

those days of confrontation with Indonesia and the influx of sailors was just a taste of the huge crowds of American R and R servicemen who were to visit Sydney during the Vietnam decade.

Sydney had seen nothing like the USS ENTERPRISE and the vast size of the carrier would remain in the memory of those lucky enough to see it. In turn, the welcome that Sydney gave the ship and its crew members would make it hard for them to forget Sydney.



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HMS SPEEDY

The British shipbuilder, Vosper Thornycroft (UK) Limited, were recently responsible for the fitting-out and equipping to Royal Navy requirements the Boeing Jetfoil HMS SPEEDY.

SPEEDY was launched at the Boeing Marine Systems works in Seattle during July, 1979. Following trials she was accepted by the Royal Navy before being shipped to Southampton. On arrival SPEEDY was towed to the Vosper Thornycroft shipyard at Portchester for completion.

The hydrofoil was structurally complete with the retractable foils fitted and propulsion and auxiliary machinery systems installed. Accommodation areas were primarily empty and little of the upper deck equipment had been fitted. Two of the more substantial outfitting tasks carried out by Vosper Thornycroft were the complete furnishing of the accommodation, and the design and installation of a hydraulic davit and deck stowage system for the craft's two Avon Searider rigid-bottom inflatable boats.

Accommodation completed by Vosper Thornycroft included the communications room, navigation room, Commanding Officer's cabin, officers' cabins, wardroom, senior and junior ratings' cabins, ratings' mess and the galley. A wood and hardboard mock-up of the accommodation was built, with details such as cable runs, ventilation trunking



HMS SPEEDY, the Royal Navy's first jetfoil. (Photo — Ministry of Defence).

and pipe systems represented. The accommodation itself was fitted out with partitions of lightweight aluminium honeycomb cores. These were fitted to the main structure using resilient mountings to minimise noise transfer. Non-structural doors are of similar construction.

Furniture is, as much as practicable, made from thin-gauge aluminium alloy, using honeycomb-core sandwich construction where appropriate, and finished by stove enamelling.

The boat handling system consists of a davit on each side, capable of lifting one of the Avon Searider boats with a crew of two, outboard motor and other equipment totalling up to 855kg (1855lb) in weight.

Another major outfitting task was the installation of navigation and communications equipment to Royal Navy requirements. This included Decca CANE (Computer Aided Navigation Equipment) with automatic navigation plotter, AC 1226 radar, comprehensive internal communications system, depth recorder, Decca Navigator, Omega

receiver, VHF/UHF transceiver, HF direction finder, radio teletype equipment, associated antennae and many other items. Connection to electrical supplies and, in some cases, replacing existing socket outlets with RN pattern ones, was also involved. Much of the equipment is similar to that in the Royal Navy's Island class patrol vessels.

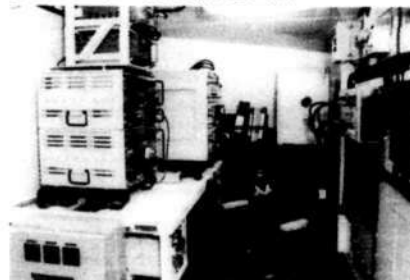
On deck there were also a number of stowages and miscellaneous equipment items to fit, including guardrails, lifelines, pyrotechnics and signalling equipment lockers, and seawater supply to upper deck.

The fitting out was completed and SPEEDY returned to Boeing for sea trials on 12th May, 1980. SPEEDY originally cost £6 million with an additional £1½ million for fitting-out. She was handed over to the Royal Navy in May, 1980 and in September joined the Fishery Protection Squadron for six months' duty, as well as performing off-shore oil platform patrols.

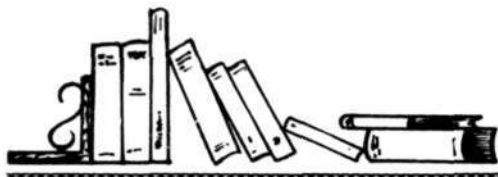
(Reproduced from High-Speed Surface Craft, September, 1980).



Wheelhouse. (Photo — Royal Navy).



Communications Room. (Photo — Royal Navy).



BOOK REVIEWS

"CONWAYS ALL THE WORLD'S FIGHTING SHIPS 1922-1946"

Published by:
CONWAY MARITIME PRESS

Reviewed by:
"GAYUNDAH"

"Conways All the World's Fighting Ships 1922-1942" is the second volume of a four-book series to be produced by Conway Maritime Press.

This latest publication provides the reader with an excellent coverage of the fighting fleets of the world from the Washington Naval Conference to the end of the Second World War building programmes in 1946. As a lead up to each individual nation the navy at 1922 is described in a summarised format, before proceeding on to the actual vessels constructed between 1922 and 1946. The general layout of the book follows the earlier 1860-1905 volume with the "super" powers leading the medium size and minor navies.

One disappointing aspect as far as this reviewer was concerned is the lack of a separate section for the RAN, RNZN and RCN, which have been placed with Great Britain and the Empire Forces. This format was well suited in the 1860-1905 volume, as there was no actual RAN, but to continue the trend is unrealistic.

Apart from this criticism, the book remains a magnificent collection of facts, photographs and line drawings. An excellent selection of Soviet warship photographs from the period has been included and a number of Australian warships are also illustrated. In this volume the authors have extended their parameters by including such types as auxiliary patrol vessels and minesweepers, the likes of which saw extensive service in the Second World War. As before a comprehensive index is included, listing not only ships from the 1922-1946 period, but also those in existence at the time the Washington Treaty was signed.

The book overall is a worthy companion volume, maintaining the high standards set by the earlier 1860-1905 publication. Two additional works are yet to be published; 1906-1921 and 1947 to the present day.

"A LOG OF GREAT AUSTRALIAN SHIPS"

By: GRAEME ANDREWS
Published by:
A. H. & A. W. REED
Price: \$16.95

Reviewed by:
ROSS GILLETT

This book was released in late 1980 and spans over 160 pages. Approximately 150 ships are described through

both text and illustrations.

This number includes many naval vessels, such as ALBATROSS, AUSTRALIA (I & II), BUNGAREE and CALLIOPE, to name but a few, plus good selection of the well-known merchant ships, harbour and riverine craft.

Each vessel allotted space is illustrated by one or two photographs, many of which have not been published previously, coming from such collections as Australian Consolidated Press.

Some relatively unknown vessels (in these modern times) are included. One which caught my attention was the Northern Territory patrol boat,



The Northern Territory Patrol Vessel LARRAKIA, from a "Log of Great Australian Ships". (Photo — Capt G. Haultain).

LARRAKIA, which earned much attention in the years before the Second World War.

A few errors have crept into the book, such as HMAS DOOMBA being described as a "veteran of two world wars". This cannot be correct as she was completed in 1919!

Taken overall, "A Log of Great Australian Ships" is an interesting maritime publication and one which should provide many hours of reading.

"WARSHIPS IN ACTION TODAY"

By E. L. CORNWELL
Published by:
IAN ALLAN LTD
Price: \$17.50

Reviewed by:
JOHN MORTIMER

The author's stated objective of this book was to produce an attractive and interesting picture book which provided a reasonably balanced coverage of the warships in service around the world in the 1970's. In selecting the photographs for this book the author has not attempted to include ships

of every nationality, nor of every class.

Emphasis is devoted to European, NATO and the Soviet Union's navies, with about two-thirds of the photographs being of aircraft carriers, submarines and destroyers. The RAN is represented by photographs of HMA Ships MELBOURNE and BRISBANE, taken during mid-1977 when they visited the United Kingdom for the Silver Jubilee Review at Spithead.

Overall the photographs are of high quality and are pictorial views of individual ships. These are interspersed with a number of action photographs involving aircraft operations from both aircraft carriers and escorts, surfacing submarines, missile firings and a notable photograph of RFA REGENT in heavy seas. In addition there is an interesting series of photographs depicting an underway replenishment collision.

Captions are provided throughout detailing the subjects displacement and armament, or describing the nature of shipborne operations depicted.

The source of photographs used are official naval, shipbuilders or from such notable warship photographers as Michael Lennon.

Reproduction of photographs throughout is of a high standard with paper quality being first-class, resulting in a most pleasing product.

"WARSHIP No. 16"

Published by:
CONWAY MARITIME PRESS
Price: \$4.95

Reviewed by:
"PALUMA"

This issue, the last for 1980, commences with an impressive cover photograph of HM Ships JUPITER, JACKAL and VORTIGEN, in line ahead fashion, taken in the year 1940.

Articles within the journal include: "The S class Destroyers" and "USS GALVESTON". The former is a description of the type in Royal Navy service and is a good companion piece to the article appearing in "The Navy", Vol 41, No. 2 describing the five Australian S boats.

The Italian Cavour and Duilio class battleships are also discussed. One interesting point the author raises is that the Italians, although designing the first Dreadnought type battleship in 1903, were in reality the last to construct same.

Well-known author Antony Preston provides a small piece on the original Whalecatcher escorts of the Royal Navy. These ships, 15 in all, were complete between May and November, 1915.

Beginning with the next issue of "Warship" a colour front cover will greet all readers.

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"TRADITIONS OF MODERN SEAMANSHIP"

Story and photos by:
Leading Seaman
Photographer
MARK LEE

What is seamanship? A display of commonsense carried out on sea-going vessels by all members of the ship's crew.

Who are the ship's Seaman? Officially they are a group of men from the ship's crew who are responsible for all seamanship duties.

In today's Royal Australian Navy the true sailors of the fleet are the Seaman. They are men who have an assortment of occupations, obeying them with the highest degree of authority and pride.

Under the Command of the Executive Officer and the voicing orders of the Chief Bosun's Mate, seaman are active in the up-keep of the ship's interior and exterior maintenance of the small boats, loading of cargo and stores,



The congested operations and control room of HMAS ONSLOW.

berthing and anchoring of the ship, replenishment at sea, rigging lines and cables and the tedious task of standing bridge and deck watches.

From the days of ships with wooden hulls, to today's steel hulls and the future's probable use of plastic, the sailor has also advanced with technology.

The helmsman, confronted with a dashboard of dials, lights and gauges is in another world compared to the ancient upper deck wheel house. Chipping paint is made easy with electric wire brushes, ship's power boats with speeds faster than many oarsmen, satellite navigation computers, telescopes that can reach beyond the horizon, communication and gunnery weapons systems fully automatic, the sailor today requires a high standard of training, practice and a good commonsense of his seamanship prevailing at all times.

Life at sea still comes back to basics with seamanship. Splicing ropes, making fancy knots, rigging and bending lines, sailmaking and making the traditional sound of his bosun's pipe talk through the ship's amplidy system.

Prepared to defend his country, give morale and love to his family and relations, the sailor of today's modern Royal Australian Navy is truly one of our Nation's most strongest and willing workers.



POUC Bill Simpson carries out a personnel transfer at sea in the ship's Gemini rubber boat.

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Midshipman Eric McKone takes a fix on HMAS YARRA during OOW manoeuvres in the Pacific Ocean.



ABUW Glen Moffitt adds the final touch to an Ikara anti-submarine missile prior to its launch.



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Helicopter ASW Training Simulators

DURING the last two decades there has been a significant increase in the number of submarines, not all of which have been designed and built for a defensive role.

The risk from this direction is well appreciated, and anti-submarine warfare (ASW) rightly assumes a high priority in the defence systems of many countries, since it will not be long before large numbers of hostile submarines are able to swamp the present defence systems. When this happens, the political or military threat would render any counter-measures impractical unless ASW systems are developed to lessen the concealment and evasion capabilities of the submarine. Therefore the prognosis for successful ASW in the future must be the updating of contemporary equipment and the development of new and improved submarine detection and localisation equipment.

The advantages of employing helicopters, either to augment a surface vessel anti-submarine force or to operate independently are now well established. Fitted with a submersible detection unit and operating with superior speed and minimal sea noise interference the helicopter is capable of remaining within sonar contact range of a high-speed submarine. However, because a helicopter cannot operate its sonar during a transition from one "dip" position to another more than one helicopter may be employed to maintain continuous contact.

For such an operation, it is obvious that the helicopter crews must be trained to a high level of proficiency, and that the success of the mission depends to a great

extent on the skill and efficiency of the rear crew sensor operators, ie the observer and sonar operator. The advantages of employing a self-contained trainer over classroom or airborne instruction are self-evident. The flexibility of a trainer lies in its ability to evolve with new technology. A trainer has to perform an enormous range of work, and the speed at which this has to be done is well appreciated. With the intricacies of modern aircraft it is not idle curiosity on the part of the crews wanting to know what would happen if this or that malfunction or late action occurred. They need to know, and on a trainer they can find out.

Tactical trainers, tailored to individual requirements, are complex and yet versatile ASW tactical training systems. A tactical trainer may be considered complex because it simulates equipment response to the crew performance, the sonar response signals of various vessels, and the effect of the environment and the equipment failure on the instrumentation. Such a trainer can simulate a wide spectrum of environmental conditions, vessel types, etc, thereby making available a greater range of training conditions than would normally be encountered in classroom or in-flight training. Ferranti Computer Systems have developed a special Anti-submarine Warfare Tactical Trainer with these requirements in mind. Controlled by a digital computer working in real-time, the trainer facilitates instruction at various levels from basic sonar and radar operation to full-scale multi-helicopter ASW exercise. Thus trainees of any proficiency can be trained in tactical situations before airborne exercises are undertaken. Typical training roles include:

- Familiarisation with operational equipment procedures.
- Navigational exercises.

- Equipment fault recognition and trainee corrective counter-action.
- Solitary ASW exercises.
- Multi-helicopter ASW exercises.

The trainer may also be integrated with a flight simulator for full crew ASW training exercises.

Each trainer is manufactured to fulfil a particular requirement, and each system is therefore unique in that it has characteristics and capabilities peculiar to its design. Thus it can be appreciated that in describing any given system the facilities and capabilities of others may be omitted. For this reason the system described here is a collection of a number of the facilities that exist in trainers employed throughout the world. Such a system would consist of a rear crew compartment (Heliconsole), a computer suite and an instructor's station.

The Heliconsole equipment layout is dependent on the helicopter fit being simulated, and may comprise, for example, sonar type AQS 13B, radar type AR15955, transponders type AR15954, winch control, at moment control, and communications.

The operational sonar type AQS 13B is a helicopter-borne anti-submarine apparatus used to obtain target range, bearing and relative velocity while the helicopter is in a hover mode with sonar transducer submerged to a depth of at least 50 feet. The transducer together with depth, temperature and leakage sensing devices is enclosed in a submersible unit which is raised and lowered by a motor-driven winch mounted in the helicopter. In the trainer, all the sonar equipments are used except the submersible unit. The computer input-output equipment simulates the submersible unit by producing sonar echoes under computer control. The normal winch controls are fitted in the trainer, but as no winch drum or motor is necessary, their effects are simulated by the computer.

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BEZUPRECHNY (Immaculate). A sister ship of BUYN, the 350 ton destroyer BEZUPRECHNY is shown here in a French port shortly after commissioning. Her eleven pounder gun is visible on the forward handstand above the armoured conning tower.

THE TSAR'S OTHER SHIPS

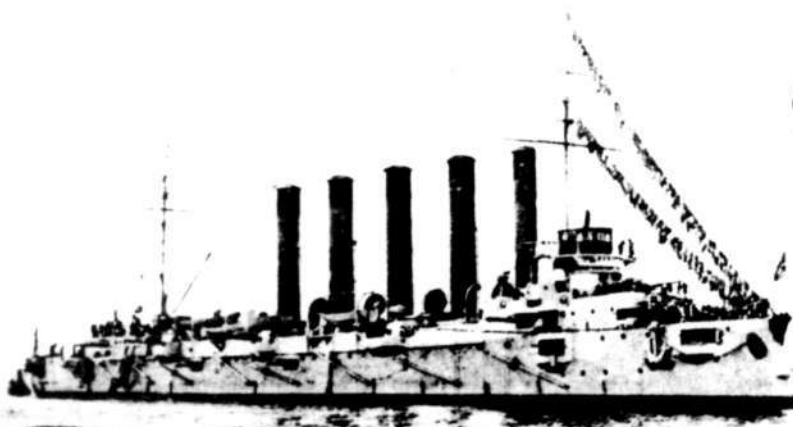
By:
ROSS GILLETT &
MICHAEL MELLIAR-PHELPS

(All photos — Authors' Collections)



ADMIRAL USHAKOV. One of three coast defence battleships ordered for the Russian fleet in the early 1890s ADMIRAL USHAKOV was armed with four 10 inch guns carried in two twin mounts. She sailed with many other warships to Tsushima in 1905 only to be sunk on 28th May. Of her two sisters, both were captured and integrated into the Japanese Imperial Navy. Unlike the battleships of the First Squadron, these little "flat-irons", as they were known, gave a very good account especially in view of the ship's being nominally outgunned in calibre when compared with their principle adversaries in the Japanese fleet.

PART TWO



ASKOLD (9th Century Prince). Known to allied navies in the First World War as the "Packet of Woodbines" after the service-issue pack of five cigarettes, the German-built 6,500 ton ASKOLD was in fact the only five funnelled cruiser in the world! She was completed in 1901 at Krupp's Germania Yard and carried twelve 6 inch guns. Designed for 23 knots, she recorded 24½ knots on her trials and was still good for 23½ knots at the Battle of Round Island on 10th August, 1904. She was scrapped in 1921.



After encountering the Japanese armoured cruiser ASAMA at Chemulpo on 9th February, 1904, the protected cruiser VARYAG was scuttled in harbour. Later raised, VARYAG was renamed SOYA for service in the Japanese Navy before being re-purchased by Russia in 1916. A planned refit in England was never completed, the VARYAG becoming a hulk at Liverpool until scrapped in 1921.



BYEDOV, a Boiki class destroyer, is seen here on trials before her guns were mounted. BYEDOV had the dubious honour of carrying the Commander-in-Chief of the Russian Second Pacific Squadron, Admiral Rozhdestvensky, away from his flagship, which was in a sinking condition. Japanese units intercepted BYEDOV and in so doing captured the gravely injured Russian flag officer.

After fleeing the Battle of Tsushima, the protected cruiser OLEG voluntarily surrendered herself in a neutral port for the remainder of the war. Subsequently returned to the Russian Government, she was fated to be sunk by Coastal Motor Boat No. 4 during the British assault on the Red forces during their conflict with the so-called White counter-revolutionaries. It is obviously a "make and mend" day with the crews washing draped over the forward stays, covering the bridge.



This photograph depicts the starboard after part of the 12,500 ton armoured cruiser ROSSIYA seen here at anchor following the cruiser battle with the Japanese in Tsushima Strait on 11th August, 1904. The damage she absorbed was considerable; over 22 major calibre hits were sustained on the port side alone. But even with heavily damaged funnels (which normally destroyed furnace draft and therefore crippled a warship), she was able to make over 18 knots after the action which enabled her to reach a safe port. Note the aftermost funnel and shell-hole above the waterline at the stern.



The elegant 3862 ton protected cruiser SVIETLANA, was built in France at Le Havre in 1897, and was fitted-out for employment in peacetime as a yacht for the Grand Duke commanding the Russian navy. Apart from her fighting capabilities, SVIETLANA was noted for the amount of woodwork fitted; of particular interest was her magnificent staircase. Nevertheless, she was sunk on the day after the Battle of Tsushima by two Japanese cruisers.



The 1437 ton MANDJUR joined the Tsarist fleet in 1888. After the Battle of Tsushima the gunboat was laid up at Shanghai, the essential parts of her machinery being handed over to the Chinese. The vessel eventually returned to Russian control and was not scrapped until 1923. MANDJUR is often, incorrectly, classed as a sister ship of KORJETZ, but differed in all principle features from that vessel.

Four decades of patrol boats

by GRAEME ANDREWS

The arrival in Port Jackson on 27th August, 1980 of HMAS FREMANTLE, the first of the latest generation of Australian coastal and offshore patrol craft, brings to mind a number of associations and connections with earlier attempts by Australia to not only patrol but occupy the waters to our north.

The 200nm economic zone which is being applied by many countries with coastlines in reality only legitimising a concept which has long been understood by those of the sea; it is no use to be able to control your land unless you can control the adjacent waters too.

As long ago as 1911, some discussion of the need to patrol all the Australian coast was evident and the River class destroyers of the infant RAN were acquired with this in mind. They were of limited use, not having much range, nor much in the way of food and water storage. As a result, they were employed around the more settled coastal areas, a few forays into outlying waters, one of which was a lengthy run up the Sepik River in New Guinea.

During the post WWI period little effort was put into naval or coastal surveillance and it was not until it became obvious that Japan was not only a great naval power but was expansionist and unfriendly that attention was once more directed to Australia's northern waters.

As always, the government of the day wanted to patrol and occupy the waters yet didn't want to spend any more money than absolutely necessary. In addition, there was a considerable school of thought which stated that no offence should be given to the Japanese, even

those Japanese who were sailing pearling luggers in Australian waters and who seemed to often be doing more surveying than fishing.

The solution seemed to be the provision of a lightly armed vessel which would not be on the navy list and whose crew would not be "Navy". By this means the government hoped that any interception of or altercation with Japanese interlopers would appear to be more of a police matter than a naval occasion!

By early 1934, incursions by Japanese pearl ships and their crews were becoming serious. Not only did the pearling luggers work in areas in which they should not be, they landed on islands and on the mainland with the risk of transmitting stock diseases and they interfered with Aborigines on the reserves.

As neither the RAN or the RAAF had the capability to patrol the distances involved, it was decided that the Civil Aviation Department, which was then part of the Department of Defence, would order a small, fast patrol boat from the British Power Boat Company. This type of boat was designed by Scott-Paine, mainly as a fast rescue craft for use in and around the English Channel and was almost totally unsuited for the job proposed. The vessel was ordered and named LARRAKIA. She was delivered to Sydney by ship early in 1936 and then taken in hand for modifications to fit her more appropriately for the job ahead.

Into the standard 13.7m (45ft) hull were fitted additional tanks to bring her fuel capacity from 1138 litres (250 gall) to 3820 litres (840 gall), this reduced top speed from 28 knots to less than 20 but increased the range by about two times.

With a crew of four under the command of Captain C. Haultain, LARRAKIA was placed in service at Cockatoo Dockyard in Sydney in April



This overhead view of LARRAKIA illustrates the extremely small size of the vessel. (Photo — Capt G. Haultain).

1936 and arrived in Darwin aboard SS Mangala on 18th May.

Some idea of the problems involved in running this small craft to the north of Australia can be gauged by the fact that the crew largely responsible for organising their own stores, finding their own accommodation in Darwin, doing their own repairs and slipping the craft.

With a portable slipping cradle secured on the mudflats nearby and an old tin shed acquired as a store room, the Northern Territory Patrol Service was in business, the forerunner of the large new patrol boat base now being built in Darwin.

During the next two years or so, LARRAKIA patrolled up to 600nm radius from Darwin, covering the shoreline and the many islands between Beagle Gulf and Cape Arnhem. Her longest cruise was of 1796nm and 26 days, no mean feat in the tropics.

Many Japanese luggers were arrested and brought into Darwin, much in the manner that Taiwanese fishing vessels now attract the attention of the Attack class patrol boats.

Many of the skippers of these luggers were let off by the courts which seemed to be bent on not provoking the Japanese government. Many of the luggers were warned or arrested more than once and on one embarrassing patrol, the arrested lugger, New Guinea Maru, was used to tow LARRAKIA back to port after she broke down. The portable WWI Vickers machine gun was rarely used as a warning gun but was kept in place during the tow to prevent the reluctant "tug" from letting go the lines.

Good relations with aborigines was fostered by the LARRAKIA being

available to help them when needed, both as a communications post and sometimes as a ferry. This paid off in many ways as the local aborigines provided a sort of coast watch for the Patrol.

Because of the problems of acting as a patrol boat and as an air/sea rescue craft, agitation for additional craft and for aerial support was increasing by early 1938 and a larger patrol vessel was ordered. Named VIGILANT, she was larger than LARRAKIA and carried a bigger gun. Her accommodation was also much improved.

VIGILANT was completed on 25 July, 1938 and worked on the northern patrol until taken over by the RAN as a patrol vessel in October, 1940.

As a naval vessel she worked as far afield as Timor, having her name changed twice during the war. During the 1960s VIGILANT (under her first name) was working as a whaler in WA and in the mid-70s was laid up in Sydney for a number of years under spasmodic conversion as a private craft. She disappeared from the harbour about 1978.

During WWII LARRAKIA was taken over by the RAN and served as a channel patrol vessel in the Darwin area. After the war her career is obscure but it seems she rotted out, ashore above the high-tide mark in Darwin.

With the war over and little obvious threat to either our fishing or coastline, maritime patrols north of the Tropic of Capricorn were once more allowed to lapse. The only naval vessel continuously in the area from Cairns to Perth from 1947 until 1960 was a medium-sized naval tug, HMAS EMU. She was used for



Captain Haultain with Vickers gun at Elcho Island. (Photo — Capt G. Haultain).

fisheries patrol and for rescue work but her nine knots service speed gave her little advantage over interlopers.

EMU was sold out of the service in the early 60's and is now the fishing boat TENAX. She was replaced by the small General Purpose vessel HMAS BANKS in 1960. BANKS was in turn, replaced by the Attack class patrol boats HMAS ADVANCE and ATTACK, when these craft entered service from the late-60s.

The provision of a fully-equipped naval patrol boat base in Darwin, complete with cyclone proof patrol boat dry stowage, and working in conjunction with aerial surveillance, will, for the first time, mean that Australia has almost enough capacity

to not only claim areas but occupy them. And that is the classic reason for existence of sea-power, then and now!

Captain G. T. G. Haultain died in 1976 but his son, Captain Graham Haultain maintains a connection with the area, having recently been master of Australian Prospector and now master of the fast container carrier Australian Emblem, which carries much of its cargo on the Sydney-Japan run. My thanks to him for permission to quote from his father's book, "Watch Off Arnhem Land".

(LARRAKIA is featured in Graeme Andrews' book — "A Log of Great Australian Ships", which is reviewed in this issue — EDITOR).



LARRAKIA on trials, Sydney, 1936. The Vickers machine gun was fitted for the photo. (Photo — Capt G. Haultain).



HMAS BANKS. (Photo — RAN).



VIGILANT alongside in Campbells Cove, Sydney, 1938. (Photo — Capt G. Haultain).

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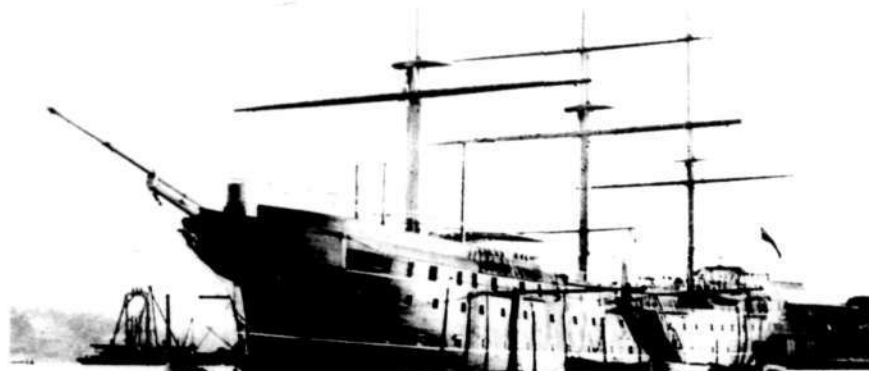
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An early view of the training ship SOBRAON, seen here swinging at her mooring with Garden Island in the background. Later renamed TINGIRA, she served in the RAN from 1911 to 1927. SOBRAON finally ended her days in Berrys Bay and was broken up in 1940. (Photo — Ross Gillett Collection).

OUT OF THE PAST



Formerly the yacht of the Administrator of Papua, LAURABADA was requisitioned by the RAN and commissioned in July, 1942. She served as a channel patrol vessel and in this view was arriving in Port Moresby with 156 evacuees from New Britain on 12th April, 1942. (Photo — Australian War Memorial).

THE NAVY

Page Thirty-one



New Carrier for Spanish Navy

Introduction

This carrier programme was initiated in the United States in 1970, when the Chief Naval Officer, Admiral Zumwalt, directed the conceptual study of an air-capable ship. The mission was defined as support for take-off aircraft, vertical take-off aircraft and helicopters.

In 1972, the US Navy undertook the preliminary design phase of the vessel, and in 1977 the Spanish Navy decided to proceed with the development of the Detail Project and Building of the ship, ordering it from Bazan. Bazan, together with Gibbs & Cox, took charge of the Detail Design and Construction Drawings. During this stage a ski-jump was designed to be fitted. The vessel was laid down for the Spanish Navy on 8th October, 1979.

General Description of the Ship

The ship is arranged as a conventional aircraft carrier, that is, the ship has an angled flight deck, a starboard side island housing the uptakes and ship and air operations control spaces. Aircraft stowage and maintenance are provided for in the hangar bay. Aircraft movement is through two elevators, one forward of the island on the starboard side and one aft on the centreline. The ship has four major decks, one platform, a stepped innerbottom and a four-level superstructure. It has 11 major transverse structural bulkheads, all of which are watertight, forming 12 watertight sections.

Special emphasis has been given to the location of the functional spaces of the ship and to the adjacency and separation requirements of these spaces. The gallery deck and the 01 level forward, in addition to the communication, command and control space and office complexes, contain primarily the crew

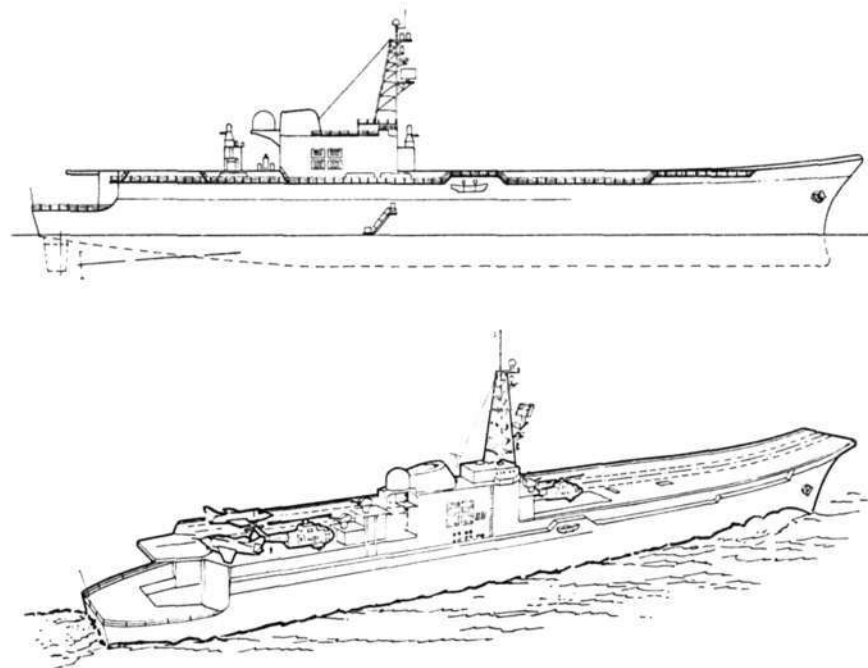
accommodation spaces. The second deck contains the IC and gyro room, central control station, aviation and ship store, weapons assembly area and elevators, extensive crew accommodations and the forward aircraft elevator machinery room.

The first platform contains the main and auxiliary machinery rooms, weapons magazines, the anti-roll tank, large crew and ship supply complexes after and the aft aircraft elevator machinery room. Machinery rooms, weapons, magazines, bulk storages, the anti-roll tank and the sewage treatment rooms are located in the hold. The innerbottom contains all the fuel tanks and the oily waste tank.

In allocating space for internal arrangements, effort has been concentrated in grouping like functions; galley and mess, office space, aviation maintenance and so on. The advantages of this approach are operational efficiency and reduction in construction cost by simplifying systems such as piping, ventilation and cableways.

The carrier's flight deck is designed, like the hangar deck, to accommodate a flexible combination of aircraft with varying requirements. A 175.5-metre long axial runway is provided for STOL operations. Studies were made to elevate the forward end of the flight deck in order to obtain the ski-jump capability. The weapon system philosophy for the ship is that the Combat System, Weapons and Sensors could be best employed by providing these in the aircraft rather than in the ship. Thus the vessel has a limited weapon subsystem as compared to most combatant ships. It consists of four close in weapon systems (MEROKA) providing a 360-degree coverage.

The command and control system being considered for the ship is the US Navy Tactical Data System (NTDS), as borne in the modern USN aircraft carriers.



Design Features and Ship's Missions

1. The design features include the following:

- a small and austere ship.
 - a mission complementary to the surface escort.
 - a ship that is not intended to operate alone.
 - a ship where the significant weapons system elements are placed in the aircraft, such as sensors and weapons.
- The specific tasks assigned to the aircraft carrier include anti-submarine warfare, anti-air warfare, aircraft early warning and limited air-to-surface attack.

2. Ship's missions include:

- defence of territorial waters.
- protection of the sea lines of communication.
- offensive ASW.
- blockade and mining.
- interdict enemy sea lines.
- destroy enemy forces.
- attack bases threatening sea lines.

Principal Characteristics

1. Main Dimensions:

Length overall	195.10m
Length between perpendiculars	187.50m
Length on flight deck	175.50m
Beam, maximum at DWL	24.40m
Beam, maximum at flight deck	29.00m
Depth to flight deck	20.60m
Draft	6.60m
Full load displacement	15,000 tonnes approx

2. Propulsion Plant:

- Two General Electric LM2500 gas turbines.
- Total power: 40,000 SHP.
- One main propulsion shaft driving a controllable pitch propeller.
- Speed endurance: The trial speed is 26 knots approx. The ship carries only JP-5 that serves both ship and aircraft. The total capacity of JP-5 is 3200 LT.

3. Electric Plant:

- Three 2500 Kw ac type gas turbine driven generators, 450 volts, 50 Hz, 3 phase.
- Two 150 Kw ac solid state frequency chargers, 450 volts, 400 Hz, 3 phase.

4. Command and Surveillance:

- One surface search radar.
- One air search radar.
- One approach control radar.

5. Armament:

- Four anti-missiles MEROKA mountings. (Close in weapon system).
- Three Harrier VSTOL aircraft.
- Fourteen SH-3 Sea King helicopters.
- Two LAMPS helicopters (light airborne multi-purpose system), or another possible distribution of aircraft.

6. Complement:

It is intended to operate the ship with about 780 men, including flight personnel. This crew size is based on extensive automation of the machinery plant control systems.



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NEW ZEALAND TRAWLERS

By HARRY ADLAM



HMNZS SCARBA. (Photo — RNZN).

HMNZS "SCARBA"

A unit of the well-known "Isles" class of naval built trawlers. Launched 26/6/41 by Homes, United Kingdom. Commissioned by New Zealand on completion. Displacement: 560 tons. Length (oa): 164 feet. Beam: 27'6". Draught: 10'6". Armament: One 4-inch QF, three 20mm. Machinery: Single screw, triple expansion engines, 800hp. Speed: 12 knots.

Transferred to New Zealand on completion, active service in Pacific Theatre. Paid off February, 1946. Sold for scrapping, August, 1958.



HMNZS KIWI, post-war. (Photo — RNZN).

HMNZS "KIWI"

Classed as "Admiralty type" A/S-M/S trawler. Launched: 7/7/41 by Henry Robb, Leith. commissioned by New Zealand on completion. Displacement: 600 tons. Length (oa): 156'. Beam: 30'. Draught: 13'. Armament: One 4-inch QF, one 20mm, but close range weaponry increased later. Machinery: Single screw, triple expansion engines, 1000hp. Speed: 14 knots.

In company with "MOA", fought a brilliant night action 29-30 January, 1943, against Japanese submarine "I-1" near Guadalcanal. Some service after the war as training ship (1948-49) and as Reserves training ship (51-56). Sold for scrapping 1964.



HMNZS MOA. (Photo — RNZN).

HMNZS "MOA"

Launched 15/5/41 by Henry Robb, Leith. Other details as for "KIWI". Shared in the destruction of "I-1" with "KIWI", but was sunk by aircraft attack at Tulagi.

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HMNZS MONOWAI

by Lieutenant Commander
D. DAVIES, RNZN

HMNZS MONOWAI is the Royal New Zealand Navy's hydrographic survey ship and is one of the most modern vessels of its type.

Commissioned on 4 October, 1977, she is the second ship to bear the name MONOWAI. The former HMNZS MONOWAI was a famous trans-Tasman passenger liner which as an armed merchant cruiser saw war service on convoy escort duties and troop carrying in the South Pacific and the Far East from 1940 to 1943 and in the Normandy landing, the liberation of Europe, the relief of Singapore and in trooping operations between various theatres of war from 1943 to 1946.

Both ships take their name from Lake Monowai, a small glacial lake situated in the south of New Zealand's South Island.

The present HMNZS MONOWAI also started life as a merchant ship. It was built in Scotland in 1960 as the "Moana Roa" for the New Zealand Government and was operated between New Zealand and the Cook Islands. In 1974 it was



On the bridge. (Photo — RNZN).



HMNZS MONOWAI. (Photo — RNZN).



Hydrographic staff at work. (Photo — RNZN).

handed over to the Royal New Zealand Navy for conversion to a survey ship to replace HMNZS LACHLAN which had been surveying in New Zealand waters for 25 years.

In 1975 HMNZS MONOWAI was steamed back to Scotland and handed over to Scott Lithgow Drydocks Limited for refit and conversion. The conversion involved total refurbishing and extended the accommodation, adding extra surveying office space and store room space, fitting the latest surveying equipment, adding a helicopter deck and hangar, and fitting a bow thruster unit and controllable pitch propellers for greater

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HMNZS MONOWAI. Note helicopter deck and hangar.
(Photo — RNZN).

manoeuvrability. In addition, all the existing steelwork, plumbing, wiring and equipment was thoroughly overhauled. In the course of the conversion both main engines were completely rebuilt and upgraded.

HMNZS MONOWAI has a displacement of 3861 tonnes, is 89 metres long and has a beam of 14 metres. With a draught of 4.8 metres and a speed of 14 knots she requires a crew of 11 officers and 115 ratings in order to carry out her role.

HMNZS MONOWAI inherits the tasks of HMNZS LACHLAN in resurveying the New Zealand coast. Many parts of the coast are still poorly charted from old surveys dating back to the mid-1800's with a few dating to 1790. Early surveys were carried out using primitive depth finding devices such as the leadline and with rough methods of position fixing. As a result, charts were incomplete and often inaccurate. With modern techniques and equipment it is possible to survey coastal waters to a very high standard of accuracy and to completely rule out the possibility of any dangers remaining undiscovered.

Hydrographic surveying is an exacting and painstaking business and accuracy is of paramount importance. To assist the crew in carrying out their tasks which eventually results in the publication of new charts, HMNZS MONOWAI has very modern surveying equipment. She carries both deep and shallow echo sounders which will accurately measure depths to 8000 metres. A sideways looking sonar which is towed behind the ship scans the sea-bed either side of the ship's track and is used to detect rock pinnacles, wrecks, pipelines and any other underwater obstructions. Any object discovered which requires further investigation can be inspected by underwater television cameras. In addition the ship carries bottom samplers, water current meters, tide gauges and a gravimeter to measure the earth's gravitational pull.

Accuracy in fixing the ship's position is essential for the correct plotting of charts. The hydrographers are assisted by several methods of position fixing. The ship carries private short range Decca transponder fixing equipment which is accurate to five metres. The ship's Decca HI-FIX 6 equipment has a longer range than the Decca transponder and provides the same accuracy. HMNZS MONOWAI also carries satellite and Omega navigation equipment. All the survey sensors and information from the gyro compass and highly accurate Doppler Log, are fed into the Marconi Hydroplot system. This consists of an Elliott 905 computer which assimilates the survey data, stores information on magnetic tapes for later retrieval, and draws a plot of the ship's track on a flat-bed or rotating drum plotter on the survey bridge. The computer is controlled using Video Data Terminals on the bridge or Data Processing Room.

When the ship is in harbour or at anchor the Hydroplot system can be used to retrieve the data it has accumulated in order to draw up the final record of the survey which is then forwarded to the Hydrographic Office of the Royal New Zealand Navy in Auckland, New Zealand.

Hydrographic surveying is a long painstaking process but HMNZS MONOWAI is one of the most modern surveying ships in the Western world and well-suited to its task.

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The Origin of the Naval Reserve Cadets OR The Sea Cadet Movement in Australia

TO THOSE OF US who have been associated with the Navy League for a long time, the connection between the Naval Reserve Cadets (NRC) and the League is obvious and close; after all, the NRC is really the "old" Australian Sea Cadet Corps (ASCC) with a new name and under new management — the Navy instead of the Navy League.

Apart from the fact that in a strictly legal sense the NRC is not just a re-named ASCC, eight years have passed since the NRC commenced operations; time enough for hundreds of youngsters to become cadets with little or no idea of the Navy League's connection with their organisation.

Time enough, too, for officers to assume NRC responsibilities and for new members to join the League for its wider maritime activities with scant knowledge of the part played by the League in developing the (sea) cadet movement in Australia; a reminder might be useful.

EARLY DAYS

Very little information exists concerning the early history of the Navy League and sea cadets in Australia, but it is on record that a branch of the Navy League of the United Kingdom was formed in Melbourne in 1915; it is assumed this marked the commencement of Navy League cadet training.

It is interesting to note that provision for military and naval cadet training was made in the 1903 Defence Act, and for RANR cadets in the first Naval Defence Act of 1910; nevertheless it is accepted that the main burden of providing sea training for 14-18 year-old boys between the two World Wars fell on the NSW and Victorian branches of the British Navy League.

NAVAL ASSISTANCE

At the end of World War II there were 12 companies (as they were called) of Navy League cadets, 8 in NSW and 4 in Victoria. In addition a similar group operated on Snapper Island in Sydney Harbour, but this company was not connected with the League. There were about 300 cadets at this time, wearing naval uniform which they were allowed to purchase from naval clothing stores.

It appears that Commonwealth assistance for Navy League cadets was first seriously considered in 1946, and one of the first steps taken was to form a central Council of the independent Navy League branches to make arrangements with the Naval Board. This Council subsequently became the Federal Council of the Navy League of Australia, the branches

separating from the UK parent and becoming State and Territorial Divisions of the Australian body. Unfortunately it was not found possible to include the Snapper Island Training Depot in the

**By Commander
GEOFFREY EVANS**

Navy League organisation, but it became affiliated with the League for the purpose of negotiating with the Naval Board.

LEGISLATIVE ACTION

The Naval Board accorded "recognition in principle" to the Navy League cadets in 1949 and during the next four years the Naval Defence Act was amended (in 1952) and regulations made (1954) enabling the Board to provide assistance to the Australian Sea Cadet Corps, as the organisation had by then been re-named. Limited practical assistance was provided by the RAN during this period.

The new regulations specified the headings under which naval assistance would be provided and in broad terms responsibility for the ASCC was divided as follows:

- Navy**
- Composition and strength of Units.
 - Appointment of officers and instructors nominated by the League.
 - Training programmes.
 - Provision of uniforms, stores and equipment.
 - Financial assistance in the form of an allowance for officers and instructors, and a capitation fee for cadets.

Navy League:

- Provision of buildings for training purposes.
- Administration.
- Provision of facilities not provided by the Navy, eg. recreational equipment.

The regulations also provided for a Sea Cadet Council to advise the Naval Board on sea cadet matters. A council consisting of serving officers and members of the Navy League had in fact been "advising" both the Navy and the League since 1950, and a small sub-committee of this council

was largely responsible for establishing the framework of the ASCC which in essentials has remained unchanged for thirty years.

NAVY/NAVY LEAGUE PARTNERSHIP

Under the new arrangements the ASCC prospered. Reliable figures are hard to find but the following will provide an indication of the growth rate:

1948-9	430 members in 9 units
1953	883 members in 18 units
1958	1700 members in 31 units
1963	2502 members in 38 units

Due largely to Treasury requirements a limit was placed on the expansion of the Corps towards the end of 1961, at which time the strength was approximately 2000 members. The limit suggested by the Director of Naval Reserves (now Director of Naval Reserves and Cadets) and accepted by the League was a growth rate of 200 cadets per annum over a period of five years, the figure to be reviewed in 1966. Two years later however, with ASCC strength at 2500, the Sea Cadet Council decided that no further expansion should take place and that the organisation should be consolidated.

In fact, during the remainder of the 'sixties, cadet numbers declined and eventually stabilised at about 2000.

PROBLEMS

The growth of the ASCC brought problems to the League in two of its main areas of responsibility — the provision of buildings for training purposes and in administration.

Nearly all the money required by the League to discharge its obligations — and large sums were involved — was raised from the general public. As a general rule people don't mind seeking, or subscribing, funds for a youth organisation but at the same time they like to see something for their money: In one way or another the training premises were acquired (at least they could be "seen") but administrative funds were another matter.

In voluntary organisations generally, "administration" seems to be a suspect word, and administrators regarded with disfavour, especially if they have to be paid; the Navy League was no exception. A youth organisation operating on an Australia-wide basis along Service lines, striving for common standards between States, between units and between cadets, needed an effective central administration but there was never enough money available to provide it. In the event, most of the essential administrative work was

done by the ASCC officers themselves, particularly the State Divisional officers who managed to achieve a reasonable degree of cohesion within their own particular areas.

A further complication was caused by the basic division of responsibility between Navy and the Navy League, which resulted in the ASCC lacking central direction as well as sound administration.

To some extent the Sea Cadet Council formed a bridge between the Navy and the League, but it lacked executive authority and in the long run its members were responsible only to their own organisation. Despite its legal limitations, the Sea Cadet Council played an invaluable part in the formation of the ASCC, provided guidance throughout the growth period and in preparing the way for the NRC.

TOWARDS NAVAL CONTROL

Compared with the Army's School Cadets and the RAAF's Air Training Corps, the Navy League's ASCC was a very cost-effective organisation; it was however, much smaller than the other two and if it was to expand it was clear changes would have to be made.

As a result of reports submitted by the Director of Naval Reserves to the Naval Board, and by the writer to the Sea Cadet

Council, a committee of inquiry was established to report on the ASCC. The committee consisted of the Director (Captain Neil Boase, RAN), the Federal Vice-President of the Navy League (Commander John Howse, RANR) and the writer, and after visiting all States to confer with local Navy Leagues made a number of recommendations to the Sea Cadet Council; after much discussion the Council "advised" the Naval Board and the Navy League that the Commonwealth should accept financial responsibility for the ASCC.

The advice was accepted and in February, 1971, the Minister for the Navy (Mr D. J. Killen) introduced a Bill in the House of Representatives to amend the Naval Defence Act: The purpose of the Bill was to repeal the separate sections of the Act relating to RANR cadets and the Navy League's ASCC and to fuse the two into a single organisation to be called "Naval Reserve Cadets" (at the time, there were 3 RANR cadet units in schools, about 120 cadets in all, and 39 ASCC units with some 2000 cadets.)

The Bill was passed with the support of all parties and much praise for the Navy League whose members were described by Mr Jim Killen, and I am sure he will not mind being quoted in part, as "... a magnificent body of people who have sought no gain or acknowledgement ... (who) have made a singular contribution

in a very direct sense to the defence quality of this country". Hopes were expressed that the League would continue its "insistent interest" in naval matters.

Nearly two years passed before, on 1st January, 1973, the League's cadets transferred to the NRC and the new organisation commenced operations.

Even then the Navy League's task was not finished as in 1975, the government-of-the-day decided to Service cadet training. It was my lot as the League's Federal President to remind the then Defence Minister, Mr William Morrison, that the Navy League had an agreement with the Naval Board whereby it would receive twelve months notice of intention to abandon cadet training — an agreement due to the foresight of former Federal President, Rear Admiral Harry Showers. The Naval Board had ceased to exist with the 1974 re-organisation of the defence group of departments, but to his credit, Mr Morrison honoured the agreement and gave the League time to determine whether it could, in effect, "take-over" the NRC.

Before any decision was necessary the Government was defeated in the 1975 Federal election and the incoming administration suspended abolition procedures, well under way with school cadets and the ATC. The NRC survived this trying period intact and became a part of the revised Service Cadet Organisation.

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WESTERN AUSTRALIAN BULLETIN —

By Vic Jeffery

The newly-arrived Governor of Western Australia, Rear Admiral Sir Richard Troubridge has accepted the position of Patron of the WA Division of the Navy League of Australia.

Moves are underway to erect a top deck on TS Perth, the WA Division's headquarters. This will be known as the USS Houston Memorial Deck to honour the gallant US cruiser lost in action with HMAS Perth in Sunda Strait on the night of February 28-March 1, 1942, whilst engaging a Japanese invasion fleet.

The HMAS Stirling-based patrol boat HMAS Acute has come to the rescue of the GASC unit, TS Challenger. Commanding Officer Darryl Nield and his crew have assisted the girls with many tasks in the past 12 months. Lieutenant Nield also carried out the inspection of the NRC unit TS Anzac in December.

TS Challenger celebrated its 5th Birthday recently and the Perpetual Trophy for the Most Proficient Cadet was won by Susan Kirwan. The presentation was made by Mr Gil Kerr of the Submariners Old Comrades Association.

TASMANIAN BULLETIN

By A. J. Lee

Cadets from TS LEVEN and TS EMU provided a guard of honour for the Governor of Tasmania at the opening of the Ulverstone Show. The guard was commanded by Leut (Cadets) G. Fuller. All units held Christmas break-ups with BBQ's for parents and friends with awards to outstanding cadets.

EMU held a weekend sailing camp to combine with their BBQ.

Unit and Divisional Training Officers met at TAMAR in November to discuss State training for the following year.

DERWENT won the Prince of Wales Trophy (Tasmanian Section), being judged the most suitable award for the year that best meets the aims of the Queen's Silver Jubilee Appeal Award. The project, under the supervision of Mr A. Quarby is the building of a Caretakers Cottage/Classroom which is almost 50% complete.

DERWENT has had its only two whalers withdrawn, one donated by NOCT to the Maritime Museum and the other cut up and scrapped. Nine cadets from DERWENT and one from EMU have recently joined the RAN.

Approximately 140 cadets and 40 officers, instructors and civilians were expected to participate in the Tas Division Annual Continuous Training at Fort Direction near Hobart commencing on January 17th.

FEE INCREASE

At the Annual General Meeting of the Navy League held in Melbourne on 15th November, 1980, members regretfully accepted a recommendation by the Federal Council to increase membership fees from the current \$6.00 to \$10.00, and to \$8.00 for the second and subsequent members of the same family.

The Federal President (Commander Geoff Evans) said that the increase was unfortunate but inevitable as membership fees had simply not kept pace with inflation over the years; for example, between 1966 when the League was formally incorporated the figures are 43% (fee increases) and 177% (inflation).

The Federal President pointed out that the League has considerable commitments in the areas of cadet training and maritime defence, is responsible for raising large sums of money from the general public, and operates with negligible administrative costs. Some costs are however inescapable, eg, postage and stationery, and telephone charges are now quite a large item, and an increasing proportion of these costs is being met by individual members for the benefit of the League as a whole.

The new fees will apply to the next financial year.

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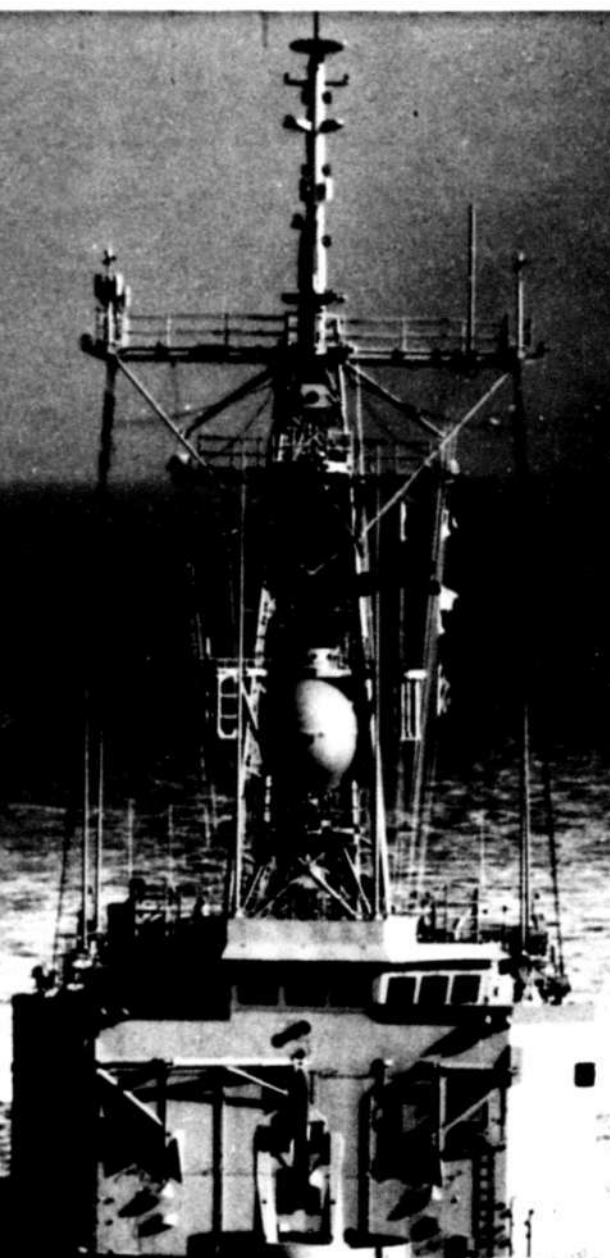
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THE NAVY

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JULY, 1981

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NOTICE TO ADVERTISERS

The Trade Practices Act 1974 came into force on October 1, 1974. There are important new provisions in that Act which contain strict regulations on advertising and all advertisers and advertising agents are advised to study those provisions very carefully. It can be an offence for anyone to engage in trade or commerce in conduct "misleading or deceptive". In particular Section 53 contains prohibitions from doing any of the following in connection with the supply of goods or services or in connection with the promotion, by any means of the supply or use of goods or services:

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- Represent that he or it has a sponsorship, approval or affiliation he or it does not have
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HMAS CANBERRA

Second to None

The Royal Australian Navy took delivery of the second of four FFG-7 Class ships on the 12th March, 1981. HMAS Canberra commanded by Commander Bryan Wilson RAN, was commissioned nine days later on the 21st of March.

These ships provide the Royal Australian Navy with a brand new concept in ship design and ship propulsion. Having a complement of 17 officers (of whom four are under training) and 161 senior and junior sailors, the ship is designed to meet the new minimum manning concept. CANBERRA is 445 feet in length, displaces 3600 tons and is powered by two General Electric LM 2500 gas turbines capable of developing 40,000 shaft horse power to drive a single controllable pitch propeller. When compared with her steam propelled sister destroyers, she is not unlike a high performance sports car.

In normal operation, control of the engine power and propeller pitch is exercised from a single type lever on the Ship Control Console situated on the bridge. As this lever is moved, changes in the engine revolutions and propeller pitch are optimised by a computer located in the Central Control Station (CCS). In the event of a loss of bridge control, engine control can be exercised by the Engineer Officer of the Watch in the CCS or in the more dire circumstances, from one of two positions in the engine room.

The Ship Control Console gives the bridge an appearance more like a Jumbo Jet cockpit than a destroyer. It contains a large number of instruments, dials and indicating lamps to provide the bridge staff with information, internal communications, hand or automatic steering control, automatic sound signal control and many automatic alarm lamps and buzzers. Gone are the days of the ships wheel; hand steering is accomplished with a two inch diameter knob, though traditionalists will be pleased to know that wheel orders (but not engine orders) remain unchanged.



HMAS CANBERRA. (Photo — RAN.)



HMAS CANBERRA. (Photo — RAN.)

As a further back-up to the main propulsion and to assist in ship handling, the ship is fitted with two 325 HP electrically powered auxiliary propulsion units (APU's) recessed in the hull either side of the keel just forward of the bridge. Each APU may be extended and rotated independently through 360 degrees of arc and each may be started and stopped independently. They may be controlled from the Ship Control Console on the bridge or by an operator in the APU machinery room.

Although at the time of writing, CANBERRA's officers have not had an opportunity to drive the ship by themselves, they and some of the crew were able to ride the ship at Builders Trials in December, 1980 and again at Acceptance Trials in February, 1981. These periods provided opportunities to steer the ship and to witness main propulsion and other trials as she was put through her paces. The ship proved to be very manoeuvrable having remarkable acceleration, deceleration and turning capabilities.

It is obvious to all that the FFG-7 Class of ship with her single controllable pitch propeller provides new challenges in ship handling. The constant starboard rotation of the propeller (whether ahead or astern pitch is set) applies a starboard lateral thrust at the stern at all times. Even when at all stop (zero effective pitch), the constantly rotating screw will cause the stern to walk to starboard. When proceeding at slow speeds, moving the throttle to the "stop" position may cause a loss of steerage way and without screw wash on the rudder the tendency of the stern to walk to starboard causes the bow to fall off to port. However, these undesirable characteristics are more than



Ship control console. (Photo — RAN.)



Main propulsion control console. (Photo — RAN.)

outweighed by the enormous advantages and manoeuvring capability provided by the APU's.

A product of modular construction and innovative weight-saving techniques, the 445 foot long CANBERRA has a lot of topsail area and is particularly susceptible to wind conditions in a tight manoeuvring situation. However, except in distinctly disadvantageous winds or strong currents, there are few situations in which the FFG-7 Class of ship cannot manoeuvre unassisted. The unique propulsion system provides opportunities to crab the ship to port or starboard, twist, radically adjust the turning diameter, or even walk the ship sideways. All of these manoeuvres can be accomplished by varying combinations of: APU's, propeller pitch, main engine speed and rudder position.

Elsewhere the ship's designer has incorporated a lot of new ideas and concepts and has built into the ship many new equipments as well as some well proven older ones. The ship is fitted with an air early warning radar (SPS 49), a surface warning radar (SPS 55), a single arm guided missile launching system (GMLS 13) for surface to air and surface to surface missiles and a single rapid firing 76 mm gun. A modern WSN 2 gyro system provides reliable and accurate heading, roll and pitch information to the ship control and weapon systems and the Omega navigation fit provides an electronic navigational back-up to the old tried and tested methods of determining the ship's position. An extensive communications outfit provides the ship with an excellent all purpose communications capability.

Accommodation conditions for both officers and other



Ship's galley. (Photo — RAN.)

ranks are modern and comfortable and ample recreation spaces are provided. The modern galley provides a most satisfactory food service area and the large modern cafeteria contains many extras like the ice-cream machine, ice maker and automatic coffee and tea dispensers. Excellent laundry facilities provide adequately for the ship's company. The ship's administration is concentrated in one area known as the Central Office Complex with facilities for



Crew recreation space. (Photo — RAN.)

all departments. Storerooms abound and one unassigned space has been fitted out as a classroom and library. The ship also has a modern two berth sick bay, a barber's shop, a mail office and a well stocked canteen.

The engineering Central Control Station (CCS) is modern and differs markedly from anything found previously in the RAN. All machinery spaces and equipments are fitted with sensors and are wired to allow monitoring of their status and functioning as well as remote control of their operation from four control consoles fitted in the CCS.

Many compartments are fitted with Halon fixed fire extinguishing systems designed and manufactured by WORMALD AUSTRALIA and fitted to all FFG-7 Class ships built for both the USN and the RAN. The eleven individual systems are equipped for local manual activation adjacent to the compartment served and for remote activation from the damage control station in the CCS.

With the prospect of at least two more FFG's to be built in Australia, this class of ship will provide the backbone of the RAN's destroyer force well into the next century. Early experience in HMAS CANBERRA suggests clearly that these ships will meet this challenge and make an excellent contribution to Australia's sea power in the future.

CANBERRA is shaping up as a great ship in which to live and work as well as being very modern and exciting to handle. With a young and enthusiastic crew she is endeavouring to live up to her unofficial motto "Second to None".

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HMAS CANBERRA. (Photo — RAN.)



HMAS CANBERRA. (Photo — RAN.)

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AUSTRALIA'S NAVAL EQUIPMENT PROGRAMME —

A NAVY LEAGUE VIEW

For some five years, during the period 1972 to 1976, virtually nothing was achieved in new construction for the Royal Australian Navy. Even the modernisation programme — of half life refits, etc — proceeded only slowly.

The Navy League devoted much time and resources to highlighting this serious problem, and emphasising the need to move and move fast to avoid a very serious decline in maritime strength towards the end of the allegedly threat free decade.

Now, progress is being made in a number of the most important areas. In others, history has now proven the League's mid-1970s concerns to have been fully justified.

The first of these concerns the Navy's aircraft carrier.

THE CARRIER PROGRAMME

After much provarication and indecision by governments of both parties, the present government finally made a decision to procure a new

by
A. W. GRAZEBROOK
*Federal Vice-President,
The Navy League of
Australia*

helicopter carrier, with the capability to operate STOVL aircraft. It is now planned to place an order for the ship during the government financial year 1982/1983, with a target delivery date of December, 1986. This should make the ship available for operational service late in 1987 or early 1988.

However, no decision has yet been made as to whether the ship will operate STOVL aircraft — essential for the carrier to perform her full role — nor will it be made until 1983. The need for this delay is being questioned by a number of senior fleet air arm officers. Those officers argue that nothing is to be gained by waiting until 1983. It has now been announced that Britain — the pioneer in the development of STOVL aircraft — is to co-operate in a further development programme with the United States (who has now decided to proceed with the full development of the McDonnell Douglas AV8B as a ground attack aircraft for the US Marines).

It is argued that nothing is to be gained by delaying further the decision on STOVL aircraft. Australia should determine its requirements now, and advise the manufacturers developing the STOVL aircraft of these needs. The manufacturers would take these into account in their development plans — they need export orders.

Regarding helicopters, the first generation of helicopters for the new carrier will be provided by the RAN's SEA KINGS, of which six are in service and two more have been ordered to replace attrition.

Meanwhile, the League's forebodings at the delay in a decision to replace HMAS MELBOURNE were justified late in 1980 when, following flying accidents during operations in the Indian Ocean, the Fleet Commander faced the hard decision to terminate carrier operations of the Navy's A4 SKYHAWK fighter bombers. HMAS MELBOURNE's catapult was no longer in sufficient good repair to operate the A4s. The replacement decision had been left too long.

As a result, the A4s will operate from ashore for the whole of 1981 and 1982. HMAS MELBOURNE will become an anti-submarine carrier (operating S2 TRACKER fixed-wing anti-submarine aircraft and SEA KING helicopters). The ship will enter Garden Island dockyard early in 1982 for a one year refit, which will include bringing the catapult up to the standard necessary for operating the A4s. The ship will remain in operational service from 1983 to 1985, when she will be paid off to provide the numbers of personnel required to retrain for, and commission, the new carrier.

The new destroyer construction programme, however, is proceeding on time.

THE FFG PROGRAMME

The first of the two new FFGs — HMA ships ADELAIDE and CANBERRA — have now commissioned. The trials conducted to date have justified fully the high expectations of the RAN.

The third ship — HMAS SYDNEY — is expected to commission in January, 1982, and the fourth ship — HMAS DARWIN — in May, 1984.

The fourth ship will differ from the first three in the type of sonar fitted and in helicopter support facilities.

The earlier ships are designed to operate the SH-2 LAMPS II helicopter. Later ships are designed to operate the



HMAS MELBOURNE. (Photo — RAN.)

SH-60B SEAHAWK LAMPS III helicopter which requires different support and handling systems. In the US Navy, the earlier ships will be retrofitted to handle the SH-60B at a cost of some \$11 million Australian per ship. Australia has not yet decided which type of helicopter it wishes to operate from each of these four ships. Obviously, until such time as that decision is made, helicopter handling and operating facilities cannot be finalised.

At this stage, a short list of five helicopter types is awaiting evaluation.

Reportedly, at the top of the navy's preferences is the SH-60B SEAHAWK, which is very similar to the Sikorsky UH 60 BLACK HAWK, now in the advance stages of development for the US Army. To replace the forty or so IROQUOIS in service with the RAAF, and to fill the helicopter needs of the Australian built FFGs and the second generation of ASW helicopters for the new carrier, about one hundred helicopters would be required.

This number could be sufficiently large to justify local production under licence.

However, under this arrangement, our FFGs would have no helicopters at least until 1985 — up to three years of operational service without helicopters.

The other four types of helicopter under evaluation should be available much earlier. These are the Westland LYNX HAS2 (which is proving very satisfactory in operational service in a number of NATO navies), the Sikorsky S76 and the Aerospatiale PUMA and SUPER-PUMA. These last two are in service, but designed for army operations. They would have to be adapted for naval purposes.

Apart from the four FFGs ordered from the US, two further units are to be constructed at Williamstown subject to satisfactory management and industrial relations improvements. The first of these units is needed by 1986 to replace HMAS YARRA when that ship retires. The armament of the two Australian built FFGs has not yet been finalised. A further four FFG hulls will be constructed later, to replace the later RIVER class destroyer escorts.

SUBMARINES

With our six OBERON's still relatively new, the last having entered service only in 1978, and the first having only just completed her mid-life modernisation, it comes as something of a surprise to hear that consideration of replacement designs is already well under way.

However, several overseas countries are approaching the decision-making stage for designs of new diesel electric submarines. Australian authorities are anxious to ensure that their requirements are taken into account in the preparation of these designs both to ensure that availability of suitable options and to



HMA Ships ADELAIDE (01) and CANBERRA (02), berthed at the builder's yard at Todd Pacific Shipyards, Seattle, in the USA. (Photo — RAN.)

optimise the prospects of construction of submarines in Australia.

To this end, strong delegations have visited Australia from Britain, Germany and elsewhere to discuss their designs.

The RAN is well pleased with the performance of HMAS OXLEY, the first of the OBERON class to complete her mid-life modernisation. The package of new sensors and weapons was put together by the RAN, who believe the modernised OBERON's are the most effective diesel electric submarines in service in the Western world.

MINE COUNTER MEASURES

Although the programme to construct eight mine hunting catamarans, designed specifically for inshore operations in Australian circumstances, commenced administrative procedures as long ago as 1976, as yet no order has been placed for the two prototypes considered essential for development.

Tenders closed for the two prototypes at the end of April, 1981, and it is hoped to place orders by the end of this year, with the two prototypes commissioning for evaluation in the mid-1980s. Orders for further units cannot be placed until the evaluation has been completed.

Whilst the approach of using a catamaran hull is an innovative Australian concept, the administrative work involved in implementing the concept has caused repeated and prolonged delays. As a result, the mine hunting catamarans cannot be available in time to provide a mine clearance capability before the three aging wooden hulled TON Class ships retire in about 1985. As a result, Navy is having to advance the project to acquire some deep-

water MCM vessels to ensure at least some MCM capability when the TON Class retire.

To fill this gap, Navy needs to acquire post haste from overseas two HUNT Class British built 615 ton GRP hulled mine hunter-sweepers. These units, which will have a long term value for clearing our deep water approaches of mines, could arrive in time to replace the TON Class.

PATROL BOATS

After initial difficulties with the design of HMAS FREMANTLE, construction of the first fourteen Australian built units is now proceeding satisfactorily. The first, HMAS WARRNAMBOOL, has recently commissioned and the remainder will commission between now and 1985. Ten further units are planned, with an order for the first five due to be placed during 1981/82. Several Australian builders are expected to seek this order.

HMAS FREMANTLE has proven very satisfactory in service in patrols in differing circumstances such as the Bass Strait and when operating from Cairns.

AORS

With the first ship (HMAS SUCCESS) already under construction, and tenders having been called for the construction of the second, progress is being made. However, it is reported that there have already been delays in the delivery of components to the builders. In contrast, the ship's anchors and cables have already been delivered — nearly two years before the ship is scheduled for launching. Clearly, concerns expressed by the League on the procurement system have been justified and, in spite of suggestions to the contrary, the problem has not yet been rectified.



HMS LEDBURY, second of the Royal Navy's new advanced class of mine counter-measure vessels, is designed for mine hunting and sweeping operations. (Photo — Ministry of Defence, UK.)

AMPHIBIOUS HEAVY LIFT SHIP

With HMAS TOBRUK having been commissioned in March, nine months late due to the late arrival of electrical components, there is as yet no sign of an order for a second ship. Although, when tenders were called originally for the construction of the ship, there was provision for a repeat order, it has apparently been decided to devote the navy's available resources to more urgent programmes including the FFGs and the aircraft carrier.

DESTROYER ESCORTS

Apart from new construction, the half line modernisation programme for the RIVER class destroyer escorts has now been under way for some years. Announced originally in August, 1972, the first ship (HMAS PARRAMATTA) did not arrive at Williamstown until June, 1977. She is now expected to recommission in August, 1981, with the programme having taken over four years instead of the two years envisaged originally. The cost of the modernisation

of PARRAMATTA is understood to be \$35 to \$38 million.

The second ship, HMAS STUART, is now expected to recommission in September, 1982 — three and a half years after she entered Williamstown dockyard. The third ship — HMAS DERWENT — will arrive in Williamstown dockyard in mid-1981. DERWENT will be followed by SWAN and then by TORRENS, with the two later RIVER class units receiving a different modernisation. Reportedly, this will include the provision of HARPOON missiles.

The consequences of the delays in the modernisation of HMAS PARRAMATTA included the retention in service for longer than planned of HMAS DERWENT. For hull strength reasons, it has been necessary to restrict the distance from Sydney at which DERWENT is allowed to operate, and the sea states in which she may operate.

Whilst the time taken to modernise the first two RIVER class units is disappointing, it is to be hoped that the lessons learned will result in much speedier performances both for the last three RIVER class units and the three DDGs, which are due to commence half life modernisation.

DDG MODERNISATION

The RAN plans to modernise the three DDGs in a very similar manner to the modernisation planned for the USN units of this type. This modernisation is expected to include installation of provision for operating the HARPOON SSGW from the same launching system as the STANDARD MR missiles currently fitted. Some of the reasons for the high costs, which surprise many of the older members of the League, are exemplified by the cost of missile outfits for the DDGs. One mixed magazine for an FFG of say twenty STANDARD MR missiles and twenty HARPOON missiles, would cost nearly \$20 million (1979) Australian.

It has not yet been announced whether these modernisations will be carried out in Australia or in the United States. Although the congress refused modernisation plans for the United States DDGs, the modernisation will be carried out using maintenance funds.

It has not yet been announced when the DDG modernisations will commence. However, it is to be expected that availability of destroyers will play a major role.

SHORTAGE DESTROYERS

With two RIVER class units in modernisation, and the first two FFGs still at least one year away from operational service, the RAN's operational destroyer strength is now reduced to seven. Of these two must normally be expected to be under routine refit. Clearly, an operational strength of five destroyers is less than that required.

Once again, the concerns expressed by the Navy League in 1973/76 have been justified. The modernisation programme for the destroyer escorts took five years to start. That delay, coupled with delays in carrying out the modernisation programme has allowed that programme to overlap with the withdrawal from operational service of the DARING class ships to prepare for the commissioning of the FFGs. As a result, the destroyer strength of the RAN has fallen below the safe minimum.

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KIROV Cruiser or Battlecruiser?

by ROSS GILLET

For a number of recent years, reports from the Soviet Union gave the indication that the Soviets were constructing their initial nuclear-powered surface combatant.

These indications became reality in late 1980, with the appearance of the impressive KIROV undertaking her initial sea trials in the Baltic and North Seas. Newspaper reports of the time immediately dubbed her a battlecruiser, a description not used since the two-ship Alaska class of the United States Navy, commie constructed near the close of the Second World War.

Early estimates suggest KIROV to be a 23,400 ton warship with a length and a beam of 755 feet and 75 feet respectively. In all nine separate weapon systems are carried by the ship. Travelling from stem to stern, the first system is the RBU-6000, comprising anti-submarine/torpedo countermeasure rocket launchers. A large twin revolving launcher for the SS-N-14 anti-submarine missile, controlled by two fire control systems is situated in an aperture on the foredeck. Immediately behind is a new vertical launch, surface to air missile system, comprising 12 launchers. Twenty vertical launchers for surface to surface missiles of an unspecified type are fitted in four rows of five. Lying to port and starboard of these missiles are four 30mm close-in weapons systems (two on each beam).

Immediately forward of the bridge, two SA-N-4 SAM launchers, providing close-in defence are sited on each beam. These missiles with a range of 8 miles have a maximum speed of approximately mach 2.

Located on the third deck, port and starboard, and protected by shutters are 21 inch torpedo tubes. Two RBU-1000 ASW/torpedo countermeasure rocket launchers are then fitted on each beam. The two single 100 mm gun mounts in "X" and "Y" positions are automatic rapid-fire weapons for the anti-



KIROV, running trials in the Baltic Sea, 1980. (Photo — Ministry of Defence, UK.)

aircraft and anti-surface roles. These are backed up by two additional pairs of 30 mm guns, as fitted forward. A small aircraft elevator leading to a hanger for five helicopters is sited between the two banks of 30 mm mounts. A landing pad for one helicopter is available.

Working in conjunction with the Kiev class aircraft carriers and the new 40,000 Berezina class replenishment ships, KIROV and her consorts will be capable of world-wide deployments. Reports suggest that a sister ship is under construction. It will be interesting to note what improvements are incorporated into the second ship.



Detailed view of the bridge superstructure. The hatches for the surface to surface missiles are on the left. (Photo — Ministry of Defence, UK.)



Another aspect of the bridge superstructure and the array of radar and electronic countermeasures. (Photo — Ministry of Defence, UK.)



Port quarter aerial view. Immediately behind the two single mounts in "X" and "Y" positions is the hatch leading to the enclosed hanger deck. (Photo — Ministry of Defence, UK.)

As was published in a previous issue of this magazine, the plans of the United States to re-activate an Iowa class dreadnought and re-arm same with Tomahawk and Harpoon surface to surface missiles, is apparently the USN's only possible counter (military and public relations) to the new Kirov class.

With her nine weapons systems, a speed of 34 knots and a displacement of 23,000 tons plus, KIROV must rank as a battlecruiser. She is 7,000 tons heavier than the USS LONG BEACH, her nearest contemporary in the American fleet, and over 13,000 tons more than the latest nuclear-powered Virginia class just entering service with the USN. However, KIROV is thought to embark a ship's complement of only 800 men, compared to LONG BEACH's 1,228 and the 442 manning the Virginia class.

The graceful appearance of the ship, together with her offensive and defensive qualities, make KIROV one of the world's most respected surface combatants.



KIROV 1980. Note stern opening for sonar. (Photo — Ministry of Defence, UK.)

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Ramsay Fibreglass Australasia is a new division of Carrington Slipways Pty Ltd. It was a Melbourne-based company that built an enviable reputation for its sports ski boats. Since its acquisition by Carrington Slipways a new type of pleasure boat has been designed and built and was released at the 1980 Melbourne Boat Show. Production will begin in September. But with the move to a huge new facility at Tomago, near Newcastle, Ramsay will extend its production and design skills into building much larger boats including trawlers, vessels for defence and surveillance, large workboats, etc. and large and heavy industrial mouldings in reinforced plastic. Ramsay Fibreglass offers extensive services in fibreglass moulding and construction. Have you got a challenge for them?



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NAVAL AUXILIARY PATROL

The original organisation that later developed into the Naval Auxiliary Patrol was the Volunteer Coastal Patrol. This force, founded on 28th March, 1938, by Captain Blackwood RN (retired), consisted of patriotically-minded men whose aim was to encourage a volunteer service of yachtsmen and others interested in seamanship, to undergo a course of training so that in the event of a national emergency their services would be of value to the defence authorities, as may be required. These men worked in an entirely honorary capacity and provided all their own boats.

Naturally at the outbreak of war in September, 1939, the Patrol received quite an influx of recruits.

For the first nine months of World War II, the Patrol, though granted no actual recognition by any of the services or Governments in Australia, was looked upon especially by the Military (Eastern



A 35 ton wooden motor yacht, LILIANI was built in 1936 and commissioned by the NAP in July, 1941, as a coastal patrol boat. She normally carried two Vickers .303 machine guns, plus depth charges. Up to November, 1945, when she paid off for disposal, LILIANI was crewed by seven men. (Photo — Historical Studies Section, Department of Defence.)



HIAWATHA was requisitioned in Perth on 15th May, 1941, and paid off in December, 1945, after NAP duties from Fremantle. The 50 foot long craft was powered by twin Chrysler Crown Motors for a speed of 8 knots. (Photo — Historical Studies Section, Department of Defence.)

Command) as a useful adjunct to their service. On occasions it co-operated with the Military authorities in testing Beach Defence Schemes, on Coastal Reconnaissance work, Military Survey work, etc.

In June, 1940, when Italy declared war on the British Empire, the New South Wales police, who had been entrusted with the job of the security of Sydney Harbour, approached the VCP with the view of obtaining assistance to do this work. The result of this was that the Police Department obtained for the Patrol official recognition by the NSW State Government.

The men were, in addition to the Patrol's own instruction, trained by official Police Instructors on Police Procedure, ARP and First Aid, for a period of 13 weeks. At the end of that



PETER PAN — requisitioned August, 1942, from D. de B. Cullen of Western Australia. Returned to owner December, 1945. Speed 9 knots. Endurance 3 days. One petrol motor, 9 hp. (Photo Historical Studies Section, Department of Defence.)



In NAP service from August, 1943, to November, 1945, was PINAFORE. She was powered by two 50 hp petrol engines, giving a maximum speed of 9 knots.
(Photo — Historical Studies Section, Department of Defence.)

period, all men then in the Patrol were sworn in as Special Constables.

A smaller organisation was also formed in Sydney on similar lines to the VCP. This was known as the National Emergency Services Yachtsmen's Auxiliary. An early recognition of the value of the VCP was made in 1940 by a grant of £1,000 for initial expenses (petrol and oil).

During 1941, when relations with Japan became strained, a number of Victorian yachtsmen decided that it was time Port

Patrol boats were all former pleasure yachts and motor boats, and ranged in size from 60 foot auxiliary yachts to 20 foot open motor boats.

In May, 1941, the Volunteer Coastal Patrol recorded a membership of approximately 400. The patrol was open to all men who were not of military age, who knew something of boats and the ways of the sea, and who were prepared to give up their spare time to patrol activities. Classes and parades were held twice a week at the Patrol Headquarters.



This view of TASMA is of special interest, with an unidentified Bathurst class AMS in the background. The name of the AMS, the place and the date taken are not known. Any reader who may know the answers to this mystery photo should drop the Editor a line. (Photo — Ron Wright Collection.)

Phillip Bay had a Patrol and under the guidance of a Sydney member, they set about forming same. The immediate aim was a patrol of two flotillas, each consisting of 32 boats. With the entry of Japan into the war, other Yacht Clubs realised their responsibilities and encouraged their members to join. The number of boats in the Victorian pool had exceeded the 100 mark by August, 1942.

State	Strength Mobi & Unmobi	Number of Vessels	Duty Miles	Ship Hours	Crew Hours
Queensland	415	38	3,101	699	3,104
New South Wales	1,295	211	16,044	7,682	29,964
Tasmania	292	130	1,920	399	816
Victoria	341	117	6,002	1,500	7,021
South Australia	423	61	664	431	1,976
Western Australia	419	105	32,516	14,902	59,825
TOTALS	3,185	662	60,247	25,613	102,706

where members were taught musketry, first aid, signalling and navigation. A naval rating accompanied each boat when on patrol.

In May, 1941, Mr Scrivener of the National Emergency Service Yachtsmen's Auxiliary, presented to Commodore Muirhead-Gould, NOIC Sydney, a scheme for what he termed a "Naval Auxiliary Service". This scheme, after certain alterations were made, was submitted to Navy Board for consideration. The Navy Minister (Mr W. M. Hughes) agreed in principle with the idea.

On 25th June, 1941, the formation of the Naval Auxiliary Patrol was officially approved. Members were sworn in for full or part-time service. Those volunteering for full-time service in reality became members of the Navy, receiving naval rates of pay and naval uniforms. The men could also be drafted anywhere.

The Naval Board Minute III, dated 12/6/41, approved of the formation of the Naval Auxiliary Patrol in principle. The minute also stated the object of the organisation was to provide an Auxiliary Patrol to utilise the resources of private owners of yachts, launches, fishing vessels and other types of suitable vessels at various points around the coast line of Australia for defence purposes. The Department of the Navy would bear the cost of any alterations or special equipment and fit vessels for the performance of special duties. Generally speaking, costs allowable were to be limited to the provision of fuel and lubricating oil consumed on duty. Costs of refit of engines and other equipment were expressly excluded. Costs of uniforms and badges were borne by members of the patrol. Wearing of the uniforms was not compulsory, but an official warrant was issued to owners of vessels accepted to establish identity. Members were also issued with an identification certificate. The Naval Board also accepted liability for the death or injury of members on duty, on terms to be accepted by members before their entry, however, no liability would be accepted for damage to boats on service.

In April, 1942, the Naval Auxiliary Patrol was transferred to the RANVR and was thereafter known as the RANVR (P), although official documents frequently referred to the RANVR (NAP). The same uniforms and rank badges as the RANVR were worn, and all

personnel came under the same regulations and received the same medical compensation and repatriation benefits as the RAN.

By October, 1942, the total strength of the Patrol had climbed to over 7,000 including those mobilised and unmobilised reserves. The preceding figures illustrate the strength and the amount of work carried out during that month.

As time went on a number of boats of the NAP were transferred to other duties and the numbers of personnel and boats doing duty in the Patrol were naturally

decreased, though still maintaining the efficiency of the organisation.

NAP boats were armed with rifles, revolvers, hand grenades, machine guns and depth charges of various sizes.

From June, 1944, onwards, the NAP was cut down to a minimum. A number of boats were used for Air Sea Rescue and Channel Patrol purposes, while the personnel were transferred to other duties. Many of the boats that had been bought by the Navy for NAP duties were re-sold as being no longer required for naval purposes.

During August, all security patrols were abolished and the services of voluntary

NAP personnel were used only to fill unexpected vacancies in the crews of night duty NAP boats, which were caused by sickness. The issue of petrol to volunteer vessels was discontinued.

Probably the most famous action in which NAP vessels participated was on the night of 31st May, 1942, when LAURIANA, SEA MIST, STEADY HOUR and YARROMA attacked Japanese midget submarines at loose within Port Jackson. With the scaling down of the service, most boats returned to private ownership. Many vessels survive today as pleasure boats, over thirty-five years later.

NAP PERSONNEL POSITION AS AT 9th MARCH, 1944

State	Complement	Local Duties	ASR, etc	Total
New South Wales	276	140	91	231
Queensland	129	107	34	141
Victoria	85	45	12	57
South Australia	58	20	8	28
Tasmania	29	24	5	29
Western Australia	193	154	11	165
TOTALS	770	490	161	651

NAP VESSELS POSITION AS AT 9th MARCH, 1944

State	Establishment	Vessels Available for Local Duties	CPB's Proposed to man with NAP	Total
New South Wales	43	21	4	25
Queensland	30	Incl 4 in reserve	6	30
Victoria	7	Incl 4 in reserve	—	5
South Australia	15	5	1	8
Tasmania	7	Incl 2 in reserve	—	—
Western Australia	24	5	—	24
TOTALS	126	86	13	99



A cross section of castings produced in our foundry. (From top) 1. Large locking ring in manganese bronze, aluminium bronze support brackets, wear plate in high lead bronze, bronze wear strip, large lead bronze bushes and assorted castings.



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"THE BIG GUN"

BY PETER HODGES

Published by

CONWAY MARITIME PRESS LTD
REVIEWED BY HARRY ADLAM

From Conway Maritime Press comes a very welcome addition to the naval students' library, covering naval gunnery — a very much neglected subject. "The Big Gun", with a sub title "Battleship Main Armament 1860-1945", gives the reader a very clear insight of the guns carried by the "battleships" over a crucial period.

Not only does Peter Hodges deal with British weapons, but he also gives a good run down on the other major nations, describing the course taken in the development of battleship guns. Only the major calibre guns are dealt with, as the secondary battery of a battleship was in most cases fitted with guns that would have been found in cruisers. It is to be hoped that a companion volume dealing with cruiser armament will be issued at some later date.

In "The Big Gun" we follow the development of the breech loading heavy ordnance from the days of the muzzle loaders right up to the 16 inch 50 calibre guns of the "IOWA" class. Not only the guns are described, but also the ammunition supply and loading arrangements. One chapter is devoted to ballistics, put forward in a straight forward manner that the layman can grasp, leaving him with a good understanding of the subject.

Illustrations are excellent with numerous line drawings. I was very impressed with the coverage given to the US Navy's triple 16 inch mountings. The

16 inch 50 calibre guns for the "IOWA" class were the last guns designed for battleships, being very powerful and accurate weapons.

From the text I take the understanding that the writer considers that the 15 inch twin guns of the old "QUEEN ELIZABETH" class were the best ever installed in British battleships, while the four gunned 14 inch arrangement of the "DUKE OF YORK's" left a lot to be desired. It appears that these, and the 16 inch triples for "NELSON" and "RODNEY" were nowhere near as trouble free as the 15 inch twins. As regards the guns themselves, the British Navy favoured a gun from 42 to 45 calibres long, the Americans preferring 45 to 50 calibres. When comparing this difference, the 16 inch Mark 1 of "RODNEY" could throw a projectile weighing 2048 pounds to a distance of 39,884 yards. On the other hand, the 16 inch 50 cal of the "IOWA" could throw its 2700 pound shell to a range of 42,345 yards, using the same muzzle velocity. The advantage of the longer guns is obvious. An interesting point is that the "IOWA's" 16 inch guns weight was practically the same as the "RODNEY's" guns which were 5 calibres shorter.

The greatest range obtained from a big gun came from the monster 18.1" weapons of the "YAMATO", the Japanese super battleship. With a m/v of 2559 fps, its 3230 pound shell could be hurled to a range of 45,960 yards. The largest shell did not come from "YAMATO" or her sister, but from the British 18 inch guns designed for HMS "FURIOUS". In this case the weight of projectile was 3320 pounds, although the range was down to 28,886 yards.

Too often we read British publications

BOOK REVIEWS

which tell you that anything British is good, and all the rest are bad. That is not the case with "The Big Gun". The writer takes a very fair and honest look at the subject and reports the merits, or demerits, as he sees them. This book must surely earn a place as a well researched and well written work on a very important naval subject. Thoroughly recommended to all.

"WARSHIP No 17"

EDITED BY JOHN ROBERTS

Published by:

CONWAY MARITIME PRESS LTD
REVIEWED BY PALUMA

A hovercraft designed and built in Austria during the First World War! Who would believe such a story, except that the complete design and trials history, together with photographs of this unusual vessel appear in print. Named the VERSUCHSGLEITBOOT, the 7.8 tonne craft is the subject of one of nine articles which appear in the latest issue of "Warship".

We are told that the hovercraft, the earliest known example of the air cushion vehicle, was able to carry two 45 cm torpedoes, launched over the stern via two open special chutes. Following a trial period, the VERSUCHSGLEITBOOT was judged unsuitable for sea warfare and according to the author, was broken-up and used as firewood in the stoves of Pola.

The new issue of "Warship" also features a striking colour front cover of a New Mexico class battleship firing a broadside at Okinawa in April, 1945. Two other articles worthy of further mention are part one of the Royal Navy's "B" class submarines and another interesting piece on the USN's Chester class cruisers

by well-known US Naval writer Norman Friedman.

In brief "Warship No 17" provides another varied selection of articles. Recommended.

THE HIDDEN MENACE

BY MAURICE GRIFFITHS

Published by

CONWAY MARITIME PRESS LTD
REVIEWED BY "PALUMA"

When I started to read the prologue of The Hidden Menace, I was tempted to put the book down. The author was describing a fanciful, although quite possible, mine campaign in the near future and I thought I was into science fiction.

The next chapter changed my mind. Indeed I found a concise history of the gentle art of mine warfare from its earliest days until the present, and Maurice Griffiths covers the subject with a very easy, readable style. Too often we find books of this nature become boring through technical words. Happily, such is not the case with "The Hidden Menace".

Serious mine warfare can be assumed to have begun with the primitive powder kegs used by the "Yankees" in the American War of Independence. The mines used at that time were but mere toys to what were brought into use in the American Civil War (how any war can be

called civil is beyond me), the first of the modern wars. These mines, then known as torpedoes, were effective. All major powers adopted mines of the controlled type for harbour and port defence. By the time the Great War commenced, mines were an integral part of war plans.

Both World Wars are covered, and the various types of mines are described as they came into use. The Second World War of course brought out the nasty weapons, such as the magnetic and the acoustic mine, but it also brought out the old adage that if there is a weapon, there has to be a counter. Men of the Rendering Mines Safe Branch faced fearful odds as they went about their work in de-lousing the mines as they were located. The author being one of this elite group, was awarded the George Medal for his efforts.

The types of minefields and the methods used to sweep them are also well described, and I must say that this is the first book that I have read that covers the Pacific campaign as regards to mining.

Evidently the longest mining operation ever carried out by air was in August, 1944, when B29 bombers made a 3800 miles round trip to lay 16 mines at Palembang and Banka Strait in the East Indies.

This was a long trip for such a small number of mines, but those 16 mines sank three ships and damaged another four, a creditable score indeed!

The reader will appreciate that the mine was a major weapon used by the Nazis in an attempt to bring the United Kingdom to its knees. It seems however, that "some one up there" liked the British. Practically every time a new type of mine was dropped, at least one was laid in a position where the RMS men could get at it and find out its secrets, a case of the enemy helping us.

This is a good book on an interesting subject, well written by an expert on the subject. I certainly recommend "The Hidden Menace".

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NAVAL ROUNDUP

By: GAYUNDAH

RAN FOLLOW-ON DESTROYER PROGRAMME

The Minister for Defence, Mr D. J. Killen, announced in early April that the Australian Government had taken the first step towards acquiring equipment for the RAN follow-on destroyer programme.

Mr Killen said the United States Government had been asked to provide price and delivery details for long lead time equipment for two ships. Long lead time items included electronic equipment, diesel generators and other heavy mechanical parts.

The decision to purchase the long lead time equipment would in no way pre-empt a decision regarding the Government's commitment to resolving the productivity problems at Williamstown Naval Dockyard. The decision to buy the equipment at this time was required regardless of where the ships were to be built if the construction schedule was to be adhered to.

Mr Killen said the decision to purchase the equipment would probably be taken later this year. The follow-on destroyers would be similar to the fourth RAN FFG-7 class guided missile frigate being built in the United States.



Westland Lynx of the Norwegian Navy. (Photo Westland.)

NORWEGIAN LYNX IN FLIGHT TEST PROGRAMMES

The first of six Westland Navy Lynx helicopters for Norway has completed its flight test programme at Westland Helicopters, Yeovil.

The R No A. F. Lynx incorporates comprehensive avionics equipment fits and the aircraft was completed exactly on time for the contract which was signed almost three years ago. The Lynx, intended for coastguard duties, will be delivered to Norway later this year.

HELICOPTER EVALUATION TEAM LEAVES

A nine-man mission comprising Navy, Air Force and civilian Defence personnel recently left for the United States to evaluate

helicopters and weapons systems for deployment in the new RAN guided missile frigates.

The choice would be made from a short list of five helicopters to be further evaluated. In the United States the helicopter mission, led by Captain A. L. Hunt, RAN, would visit manufacturers and sub-contractors, and would hold talks with a number of Government agencies.

Helicopters on the short list were the Sikorsky "Seahawk" and "S76", the Westland "Lynx", and the Aerospatiale "Super Puma" and "Dauphin". The mission would also examine other aircraft to assess their suitability to meet future naval and air force utility requirements.



WORLD FIELD, formerly RFA DEWDALE. (Photo — Ron Wright.)

EX RFA VISITS SYDNEY

Ship watchers in Sydney viewed the former Royal Fleet Auxiliary DEWDALE in February this year.

Now named WORLD FIELD, the tanker delivered an oil cargo to the Shell installation in Gore Bay.

APPOINTMENT OF NEW FLEET COMMANDER AND DEPUTY CHIEF OF NAVAL STAFF

The Deputy Chief of Naval Staff, Rear Admiral J. D. Stevens, will take command of the Australian Fleet on 1st June, 1981.

Rear Admiral Stevens would relieve the present Fleet Commander, Rear Admiral P. H. Doyle, who would be posted to Canberra to take-up the position of Deputy Chief of Naval Staff.

Rear Admiral Stevens has now completed 40 years in the RAN. He is a torpedo anti-submarine specialist who has held four sea-going commands during the last 16 years — HMAS DERWENT in 1965, HMAS YARRA in 1968, HMAS BRISBANE in 1970 and HMAS SUPPLY in 1975.



TOBRUK being handed over to the Navy. (Photo — RAN)

TOBRUK HANDED OVER AND COMMISSIONED

The 6,000 tonne Amphibious Heavy Lift ship, HMAS TOBRUK, is now officially Navy property.

In a brief, informal ceremony onboard the ship in Newcastle Harbour, the General Manager of Carrington Slipways, Mr Don Laverick (left) handed the ship over to the Commanding Officer designate, Commander K. A. Doolan.

The hand-over papers and documents were formally signed at precisely 11.20 am on Saturday, 14th April: a prelude to the commissioning on 23rd April in Newcastle, when HMAS TOBRUK officially became a unit of the Royal Australian Navy. The hand-over took place near the plaque mounted on the bulkhead of the first section of the ship to be placed on Carrington's side-launch building berth on 7th February, 1979. Following commissioning, TOBRUK sailed for Brisbane and arrived in Sydney on 14th May, before proceeding to Jervis Bay.



The Royal Navy frigate HMS ARDENT, February, 1981, stays close to an oil tanker as part of Britain's patrol duties during the war between Iran and Iraq. (Photo — Ministry of Defence, UK.)

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ANCHORMAN 81

The Naval Reserve Heads North

Exercise Anchorman 81, one of the largest exercises involving personnel of the Royal Australian Naval Reserve in Far North Queensland waters drew to a close recently with the Reservists pitting their skills against Fleet units of the permanent Naval Force.

The Exercise, involving over 100 Reservists from RANR Port Divisions in all Australian States ranged between Cairns, Townsville and Mackay.

With civilian occupations ranging from

A report by
Lieut ROB Care —
Wickham, RANR
PRO Anchorman 81

research scientist to plumber, the Reservists manned four of the RAN's Attack Class patrol boats — HMAS AWARE (Bow number 91), normally based in Darwin and the Cairns based HMAS BARBETTE (97), HMAS BARRICADE (98) and HMAS BAYONET (101).

With an unseasonable South East swell and moderate to rough seas the ships sailed from Cairns for four days of anti-



Just to prove it's not all fun and games! Leading Seaman Albert Johnson of Hobart was thrown heavily to the deck as HMAS BARBETTE rolled in the swell approaching Mackay Harbour.

aircraft firings, boarding exercises, officer of the watch manoeuvres, replenishment at sea exercises and then berth at Mackay. But not without incident. As HMAS BARBETTE approached Mackay Harbour, she was caught in a strong swell, rolled heavily and threw LSQMG Albert Johnson of Hobart to the deck.

Suffering from severe bruising and considerable pain, LS Johnson was treated onboard while shore authorities

were asked to have an ambulance stand by. He was subsequently taken to Mackay Base Hospital for specialist treatment and was later allowed to return to his ship.

Mackay was also the venue for the exercise VIP visit. The ships were joined by the Chief of Naval Personnel, Rear Admiral David Leach, a former Fleet Commander, the Captain of Naval Reserves, Captain G. L. Boyd, The Director of Naval Reserves and Cadets, Captain E. T. Keane, the Naval Officer Commanding Queensland, Captain W. L. Owen and local dignitaries.

Buffeted by the seas, rain squalls and strong winds, the four patrol boats punched their way to sea.

Eight Naval Reserve Cadets from TS PIONEER had their first real taste of navy life with the swell and waves breaking over the boats. Unfortunately a number of them suffered the inevitable, so rather than curtail some promising young naval careers it was decided to steam slowly back to Mackay and calmer waters.

From Mackay it was on to Townsville and the second half of the exercise.

With smooth tropical seas the reservists

went through their serials in near perfect conditions.

"Ideal weather for training purposes and more like we expected," said LCDR Peter Lyons the Reserve Exercise Planning Co-ordinator.

From Townsville, the "graduation exercise" — the four Attack Class boats pitted against the RAN's latest; HMAS FREMANTLE and HMAS WARRNAMBOOL.

We won't embarrass anybody by saying who "won" but the Officer in Tactical Command of the reserves, LCDR Kevin Liddiard, a research scientist from Adelaide, was delighted with the result.

With a definite sense of achievement the four patrol boats returned to Cairns with a tired but elated crew of reservists. In two weeks they had consolidated over twelve months of training; theoretical and practical. In two weeks they had little time to spare; the serials were intense but despite some "bumpy" seas early in the exercise, they were all completed.

And the final word? From COMAUSMINPAB, Commander P. V. Blackman, "... New Testament, Proverbs 3, Verses 11 and 12 ... 2nd Corinthian, Chapter 4, Verse 9."



"Now is it the long bit over the short bit ... or is it the short bit ...?" Captain E. T. Keane is shown the ropes by cadets at TS PIONEER, in Mackay for Exercise Anchorman 81. Captain Keane took the opportunity to visit Naval Reserve Cadet units at Mackay, Townsville and Cairns.



Looking more like an O-Boat than an A-Boat, HMAS BARBETTE pounds through the swell off Mackay on Anchorman 81. Commanded by Lieut R. B. Miles, a Reserve Bank officer, BARBETTE's crew were mostly from the RAN's Hobart Port Division. (Photo — RAN.)

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DD 963 — Air Capable Variants

AS PART OF A PROGRAMME of independent research and development, Ingalls Shipbuilding Division undertook to examine the growth possibilities of the Spruance class DD 963 destroyer.

The effort was designed to investigate various concepts of the design which could provide differing degrees of ASW, AAW, ASUW and AEW capability and flexibility.

From these studies, was produced a family tree of DD 963 variants, from the baseline configuration (31 built for the USN), to a modernised configuration, a converted configuration, a DDH 997 extended hanger version, the four ship Kidd class (ex-Iranian) and the DDG 47 Aegis class (on order for the USN). Further versions included the DDX 963 enhanced combatant and the DD 963 Seamed.

By far the most interesting adaptations are the DD 963V Stretched Hanger and DD 963 F Flight Deck configurations which are described further:

DD 963V

This design was developed to demonstrate the seabased air capability of the Spruance class ship. A larger number

of aircraft could be accommodated, including large V/STOL and heavy-lift type helicopters.

The design was configured for maximum stability and loading of aircraft, while retaining a destroyer capability. This function necessitated expanding the beam by 13 feet. However, commonality with the Spruance baseline was retained in the propulsion plant and general ship configurations, habitability, compartmentation, subsystem, etc.

The primary mission of this ship configuration is to provide expanded capability for ASW, AEW, ASST, and AAW by utilising shipboard aircraft. A greater dispersal of fleet aircraft in a high-threat environment is provided by this type of platform compared with a single large carrier.

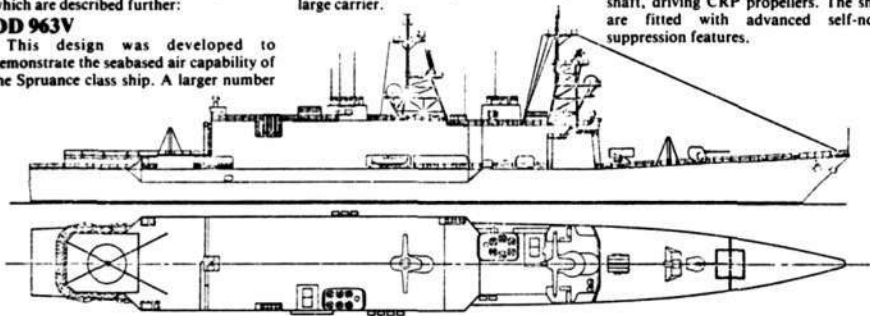
The helicopter/aircraft facilities are completely revised from the basic DD 963 class design. This revision necessitates relocation of the intake/exhaust systems for the aft propulsion plant. Also, the flight deck would be redesigned to withstand V/STOL deck loading conditions.

ASW WEAPONS

The ASROC Reload Magazine is located under the launcher. Loading is accomplished with the twin-cell launcher nacelles depressing to the vertical position. Torpedoes are contained in two magazines, each containing MK 32 Torpedo Launchers capable of handling the Mk 46 ASW Type torpedoes. Firing is through side ports. Air-drop Mk 46 Torpedoes, via helicopter, are stowed in a ready service locker in the hanger.

MAIN PROPULSION

This design employs gas turbine propulsion. Each ship has four LM 2500 Marine Gas Turbine Engines, two per shaft, driving CRP propellers. The ships are fitted with advanced self-noise suppression features.



DD 963V STRETCHED HANGER

DISPLACEMENT (FULL LOAD)	11,050 Tons
LENGTH	529 Feet (161.2 m) Waterline; 563.3 Feet (171.7 m) Overall
BEAM	68 Feet (20.7 m)
DRAFT	33 Feet (10 m)
MISSILE LAUNCHERS	Two NATO Sea Sparrow multiple launchers (vertical type) Two Quad HARPOON Surface-to-surface Missile Canister (planned) One ASROC 8-tube Launcher
GUNS	One 5"/54 (127 mm) Mk 45 (single) Two 20 mm PHALANX Close-in Weapon Systems (CIWS) (Space and weight)
ASW WEAPONS	ASROC (see above) Five Type A V/STOL, or seven AV8B+ HARRIER, or ten LAMPS Type Helicopters, or five CH-53E Heavy-lift Helicopters Two Mk 32 Launchers for Mk 46 Torpedoes
MAIN PROPULSION	4 gas turbines, 2 shafts, 80,000 shp
SPEED	29+ Knots
COMPLEMENT	357 (35 officers, 322 enlisted men)

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DD 963F

This concept features a 330 foot runway forward and a 75 foot landing area aft. A hanger is provided enclosing all embarked aircraft, including the maintenance facilities.

Initial concept formulation was centred around the "Advanced HARRIER" V/STOL Programme; however, subsequent evaluation indicated superior helicopter handling from existing SH-2F LAMPS type to numerous heavy-lift CH-53E types.

The design was planned for maximum stability and loading of aircraft while retaining a destroyer capability. Stability requirements necessitated expanding the beam 13 feet; however, little impact on standardisation cost savings would be incurred through simple hull modifications, since the major commonality cost items are inside rather than outside of the hull.

The forward intake/exhaust system was redesigned and moved outboard to provide the maximum possible width for handling the AV8B. The aft intake/exhaust system was moved outboard in a similar manner.

The flight deck was designed to withstand heavy deck loading conditions. Steel was used up to the existing O1 level; however, a high strength, low weight, orthotropic aluminium flight deck was utilised.



USS OLDENDORF, represents the basic Spruance class design. This ship has been fitted with Harpoon SSM (behind the fore-funnel) and the Seasparrow SAM (aft, forward of the 5 inch mount). (Photo — RAN.)

Main Propulsion

The DD 963F employs gas turbine propulsion. Each ship has four LM 2500 Marine Gas Turbine Engines, two per shaft, driving CRP propellers. These ships are fitted with advanced self-noise suppression features.

Aircraft

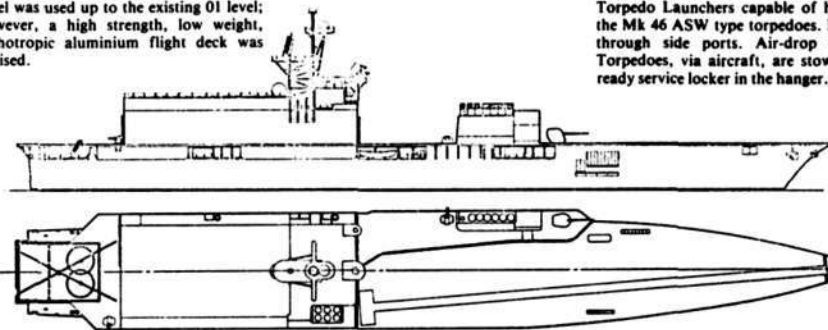
Combinations of V/STOL aircraft are listed below:

- 2 — Heavy Lift Helicopters and

- 4 — Type B V/STOL Fighter/Interceptors, or
- 5 — Type A V/STOL Multimission and
- 3 — Type BV/STOL Fighter/Interceptors, or
- 8 — Type AV/STOL Multimission, or
- 8 — Type B Fighter/Interceptors, or
- 14 — Type A Compound Helo.

Torpedoes

Torpedoes are contained in two magazines, each containing Mk 32 Torpedo Launchers capable of handling the Mk 46 ASW type torpedoes. Firing is through side ports. Air-drop Mk 46 Torpedoes, via aircraft, are stowed in a ready service locker in the hanger.



DD 963F FLIGHT DECK

DISPLACEMENT (FULL LOAD)	12,300 Tons
LENGTH	532 Feet (162.2 m) Waterline; 563.3 Feet (171.7 m) Overall
BEAM	68 Feet (20.7 m)
WIDTH AT FLIGHT DECK	80 Feet (24.4 m)
DRAFT	34.2 Feet (10.4 m)
MISSILE LAUNCHERS	16 vertical launch tubes for: NATO Sea Sparrow; Standard SM-2 medium range surface-to-air; HARPOON; ASW Standoff Weapon (future)
GUNS	One 5"/54 (127 mm) Mk 45 (single) Two 30 mm Close-in Weapon Systems (CIWS)
AIRCRAFT	See notes
ASW WEAPONS	Two Mk 32 Launchers for Mk 46 Torpedoes
MAIN PROPULSION	4 gas turbines, 2 shafts, 80,000 shp
SPEED	29+ Knots
COMPLEMENT	357 (35 officers, 322 enlisted men) approximated

THE NAVY

July, 1981

Town Class Cruisers of the RAN



By Harry Adlam

HMAS SYDNEY. Note camouflaged funnels and masts. (Photo — RAN.)

WHEN THE Commonwealth Government decided in the early 1900s to provide a modern naval squadron for Australian defence, it was agreed that the ships would be of the latest type.

The Australian squadron was to be classed as a "fleet unit" and as such was to be able to team up with other fleet units raised by the Royal Navy. In this case it was absolutely essential that the Australian ships would have to be of a standard type. The fleet unit was to consist of

one battle cruiser, three light cruisers, six torpedo boat destroyers and three submarines. All ships were to be interchangeable with corresponding types in the Royal Navy. As far as the cruisers were concerned, the original plan called for three ships of the "Bristol" class, but in the event the later "Southampton" type was selected. The scheme called for the full unit to be built in the United Kingdom, however with Andrew Fisher becoming Prime Minister, the situation was changed so that only two of the cruisers would be built in the UK. The third being erected at the Cockatoo Island Naval Dockyard in Sydney.

The first two ships of the class were

given the names "SYDNEY" and "MELBOURNE", and were to be built by the London and Glasgow company and Cammell-Laird respectively. "SYDNEY" was laid down in February, 1911, followed by "MELBOURNE" in April the same year. "MELBOURNE" was given priority in construction and took to the water on 30th May, 1912, "SYDNEY" being launched on 29th August, 1912. The third unit named "BRISBANE" was laid down at Cockatoo Island on 25th January, 1913, with the bulk of the material being supplied from the United Kingdom. This ship was not launched until 30th September, 1915.

The class proved quite attractive, being well armed and with a good turn of speed. Although nominally of the same class, all three had slight differences in appearance, and could be distinguished from one another. The general staff requirements called for a ship of 5,600 tons, an overall length of 456 feet 10 inches and a beam of 49 feet 10 inches. The main armament was to consist of eight BL 6 inch Mark XI guns on pedestal mountings with a saluting battery of four 3 pounders. Two submerged torpedo tubes were to be carried. The propelling machinery called for quadruple screws, turbine driven, with steam supplied by twelve Yarrow 3 drum boilers. The turbines were direct drive units and delivered 25,000 SHP over the four shafts to give a speed of 25.5 knots.



HMAS SYDNEY in the North Sea. An aircraft is carried before the bridge. (Photo — RAN.)



HMAS MELBOURNE, arriving Sydney 21st March, 1919. (Photo — Comm L. Forsythe.)

The class was basically coal burning although the boilers were fitted for burning oil over coal to assist gaining full power. Bunker capacity varied slightly between the ships with "SYDNEY" carrying 1210 tons of coal and 260 tons of oil.

The 6 inch Mark XI was a very powerful weapon throwing a 100 pound shell, but was limited by lack of elevation. The layout of the main armament followed along traditional lines with guns carried on the broadside system. This had the adverse result that only five of the eight guns could be fired on either side, leaving at least three guns disengaged during an action. The 3 pounders were carried mainly for saluting purposes, but could still be used against small craft.

The machinery spaces occupied much space in the ships, requiring three boiler rooms and two engine rooms. With twelve boilers being fitted, four funnels were needed to rid the furnace of gasses and smoke. The appearance of these four raked funnels was still quite pleasing. When built, each cruiser had tall pole masts but during the Great War, a tripod foremast was fitted to carry the later gunner control equipment. This, combined with the large searchlight tower on the quarter deck gave the ships a very businesslike profile.

"MELBOURNE" commissioned for service on 18th January, 1913, and made her way out to Australia ahead of her sistership. "SYDNEY" commissioned on 26th June, 1913, and in company with the battlecruiser "AUSTRALIA" departed from the United Kingdom on 1st August, 1913. On 4th October, 1913, the new squadron, formed up in Jervis Bay for the first time and made its ceremonial entry into Sydney Harbour. Onlookers were very impressed with the new ships, little realising that in less than one year the squadron would be engaged in open warfare.

The year 1914 was spent in exercising and working up the crews, with "SYDNEY" being despatched to

Singapore in March to escort the new submarines AE 1 and AE 2 to Australia.

Upon the outbreak of war, the squadron was ready and soon found itself engaged in the take over of the German colonies in the Pacific. Australia was well defended on the mainland but in the areas to the north this certainly was not the case. To illustrate how poor the northern defences were, "SYDNEY" left a Maxim gun in Port Moresby to assist and when Rabaul was taken from the Germans, her 12 pounder field gun was turned over to the army as part of the defences for that town.

On 9th November, 1914, the world realised that the infant Royal Australian Navy was now a force to be reckoned with. On that day "SYDNEY" brought the famous German light cruiser "EMDEN" to bay and after a very hard fought action forced the enemy ashore. The fight has been well described in many publications and it is not intended to cover it again. But what is usually missed by most writers is the fact that

"SYDNEY's" fire was extremely accurate and well directed under local gun control. The Admiralty seemed unaware that the German Navy had seen the value of increased elevation in naval gunnery, and when the action commenced, "SYDNEY" closed to her effective range, which should have been outside the maximum range of the German ship. This would have been the case if the "EMDEN" had had the standard 22½° elevation of British ships, but in this case, "EMDEN" could elevate to 40°, resulting in hits on "SYDNEY" that knocked out the gunnery control system. From then on "SYDNEY" fought under local control and practically every shot was a hit. The hours spent in gun drill and practice firings paid off in no uncertain manner. In this case it was "SYDNEY" that gained the honours, but it must be remembered that both she and "MELBOURNE" had been escorting the AIF convoy and its safety was the prime consideration. "MELBOURNE" being senior ship of the escort had to stay with her charges, and so it was that "SYDNEY" gained the distinction of having fought the first major sea warfare action for the Commonwealth of Australia.

"MELBOURNE" and "SYDNEY" were then sent to the North American and West Indies Station where they carried out escort and search operations with great gusto. They both finally sailed to England where they became part of the 2nd Light Cruiser Squadron. Time was now taken to fit out the ships with modern gunnery control equipment which included the fitting of the standard tripod foremast. Both ships also received a scouting aircraft which was carried on a revolving platform erected over the foc'sle 6 inch gun. This platform was the brain child of Captain J. S. Dumeresq, an



In the Sutherland Dock, 29th November, 1916, HMAS BRISBANE. (Photo — RAN.)



HMAS BRISBANE, fitting out at Cockatoo Island, 24th June, 1916. (Photo — RAN.)

Australian born officer of the Royal Navy who took over command of "SYDNEY" in 1917.

During the time the two ships served with the Royal Navy, a great reputation was formed. The young Australians proved that they could stand-up to the hard work as good as anyone, and indeed the Australian light cruisers set the record for coaling ships of this type, a record that lasted while coal was the main fuel.

Both ships were present at the surrender of the German Grand Fleet, with "SYDNEY" being given the job of guarding the new light cruiser "EMDEN", a ship that had been built to replace the vessel sunk in 1914.

With the cessation of hostilities the Australian Squadron came home, and soon settled down to peacetime routine again. The year 1920 saw the whole fleet assembled for the review by the Prince of Wales, but as soon as this was over the fleet was much reduced in size with normally only two cruisers being kept in commission.

The third unit of the Town class, "BRISBANE" completed during the war spent most of her time in the Pacific. She had been slated to join the Grand Fleet in Europe, but each time the transfer was to take place, other needs arose. She finally arrived in the Mediterranean, just in time to see the war finish. The opportunity was taken to fit "BRISBANE" with her tripod foremast and gunnery control gear before she sailed for home. "BRISBANE" led a quiet life, although she did receive a hole in one of her funnels when acting as the target ship during a "throw off" shoot with "SYDNEY" and "MELBOURNE", the culprit in this case being "SYDNEY", which ship evidently did not aim off quite enough.

The second four funnel cruiser built in Australia during the Great War, was basically of the same design as the three Towns, but incorporated a number of modifications whilst being built. This

cruiser bore the proud name "ADELAIDE", a ship that was to see a large amount of service with the RAN. Laid down at Cockatoo Island in January, 1915, as Ship No 44, her design was modified to that of a twin screw



During October and November, 1927, HMAS ADELAIDE proceeded on a "punitive" expedition to the Solomon Islands. (Photo — H. Cliff.)

arrangement, and with an extra 6 inch gun on the foc'sle. "ADELAIDE" was armed with the BL 6 inch Mark XIII as her main armament, a slightly more powerful weapon than was fitted in the other three ships. The Mark XIII had increased elevation, reported to be up to 30°. Launched in July, 1918, "ADELAIDE" was not commissioned for service until August, 1922. That she was retained until the end of WW2 was only due to her late completion.

As a group, the three Towns and "ADELAIDE" were good ships when designed, but were soon to become obsolete due to the many wartime improvements that appeared in newer ships. They commenced their service at a time when no-one ever dreamed that an aircraft could sink a ship, and were given no anti-aircraft weapons. During WW1 a 3 inch 20 cwt AA gun was fitted in the three Towns, and a similar gun was mounted in ADELAIDE. In the latter

ship more oil was carried as one boiler room was fitted out for complete oil burning. She was therefore a more modern design. Her twin screws still delivered 25,000 for the same 25.5 knots.

The years following the Great War saw a new shipbuilding programme brought into operation, and included were two new and larger cruisers. It was decided that "SYDNEY" and "MELBOURNE" would be scrapped to make way for the two heavy cruisers. On 5th May, 1928, "SYDNEY" paid off for disposal in her name port. "MELBOURNE" left Sydney, also in February, on a last voyage to the United Kingdom. On arrival she was to pay off for disposal and her crew to commission "CANBERRA". On 23rd April, 1928, she paid off for sale in Portsmouth, and was finally sold in December of that year. "MELBOURNE" presented a strange sight as she sailed out of Sydney Harbour, her main armament had been landed and she now carried only her 3 pounders. She

surely must have been the most poorly armed commissioned cruiser in the RAN. Her guns were to see service in WW2 as coast defence weapons, and one is still in existence.

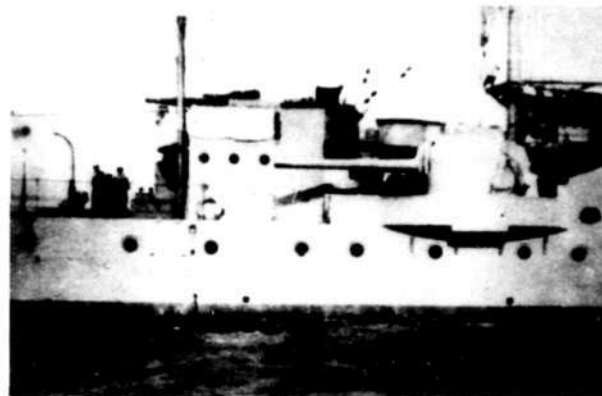
"SYDNEY" was handed over to Cockatoo Island for dismantling in January, 1929. Her guns also went into store and some of her boilers were sold for commercial use. The tripod foremast was mounted on Bradley's Head as a memorial to the ship that had sunk the "EMDEN" and during WW2 the top section of her stern was included in the sea wall at Milson's Point.

"BRISBANE" paid off from service on 22nd January, 1929, and lay in reserve until 1935, when it was decided to sell her as part payment for the new "SYDNEY" which was being built in the United Kingdom. On 15th April, 1935, "BRISBANE" sailed out of Sydney on

her last voyage. On arrival at Spithead, the old cruiser had the unique distinction of reviewing the might of the British Navy as it lay at anchor. The fleet was lined up for the Royal Review by HM King George V, and to enter Portsmouth, "BRISBANE" was required to steam down the lines of anchored ships, belching black coal smoke as she went. Her end as an HMA Ship came on 24th September, 1935, when she paid off in Portsmouth for disposal. The three towns were gone.

Back in Australia "ADELAIDE" alone, remained as a reminder of the four funnel cruisers. This ship had been in reserve since June, 1928, but was still a young ship. Steps were taken to bring her up to date and an extensive refit commenced. The ship was converted to a full oil burner, the two forward boilers and their funnels being removed. One 6 inch gun was removed from the foc'sle bringing her back to the same gunnery layout as the three Towns. Her AA capacity was increased to three 3 inch 20 cwt guns. She was brought into commission for the 1938 Munich crisis, but paid off again when the scare was over. In September, 1939, she was commissioned for war service, and carried on as an active unit until 1945, when she paid off into maintenance reserve. By this time "ADELAIDE" had adopted another profile. During the course of hostilities her armament had been reduced again, this time to seven 6 inch guns and two 3 inch AA's. Her main guns were given new shields, which did absolutely nothing for her appearance. On 2nd April, 1949, the hull of the old ship was sold to the AI&S Company at Port Kembla. She was systematically stripped down until only her bare hull remained.

Identification of the three towns was quite simple. "BRISBANE" had a pair of searchlight platforms on the struts of the foremast, although the searchlights were never fitted. "MELBOURNE" had a scuttle fitted right in the stern, whilst "SYDNEY" did not. In "MELBOURNE" the "gash chute" was




A detailed view of ADELAIDE's starboard quarter 6 inch mount. (Photo — H. Cliff.)

carried forward of the bridge, whereas in "SYDNEY" it was amidships. "ADELAIDE" had a different bridge, and the mainmast was vertical, instead of raked. Her extra gun in the foc'sle was also a good recognition point. After her wartime modifications, she was totally unlike any other British cruiser.

A number of relics still survive of the four ships and recently a gun was recovered on Rottnest Island in Western Australia. This weapon had been


mounted for coast defence in WW2 and there are plans to restore it. The Australian War Memorial in Canberra holds quite a few relics, but as a fitting reminder to these ships, we cannot go past the 10.5 cm naval gun mounted in Hyde Park, Sydney. This is the famous "EMDEN" gun which carries a plate bearing the names of the four sailors killed in "SYDNEY" during that fight on 9th November, 1914. That particular fight showed that the "Town" class cruisers were worth their while.

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WARSHIP PICTORIAL

Breaking Up Is Hard To Do

Photos by:

MICHAEL MELLIAR-PHELPS

This selection of photographs was taken in Great Britain in late 1980, and provides an excellent coverage of the ships of the Royal Navy after departing the active fleet.

Most of the views were taken in Portsmouth where a large number of ships are presently laid up.



A sign of the times! HMS TIGER lies alongside with a Tribal and Blackwood class frigate on her port beam. The horrific news of the proposed naval defence cuts which would effectively ruin the RN's surface capability were eerily foretold by the sign on the scrap metal container in the foreground.



Two Ton class minesweepers (HMS THAMES on the left), lie silent, awaiting their ultimate fate — the shipbreakers. THAMES, originally named WOOLASTON, previously served as a RNR tender.



HMS GRENVILLE, a Type 15 anti-submarine frigate, was originally built as a destroyer and completed in May, 1943. Converted 1953-54.



The former depot ship HMS FORTH, laid up in the Tamar River, Plymouth in November, 1980.



Paid off for de-storing in July, 1978, DEVONSHIRE had served for only 16 years with the British Fleet.



The last Daring class in the Royal Navy, HMS DIAMOND (left), now serves as a static training ship for engineers at Portsmouth, (attached to SULTAN). The Blackwood class frigate HMS RUSSEL (right), is also attached to SULTAN.



HMS PALLISER, a ship of only 1,500 tons, is manoeuvred from her lay-up berth by no less than four tugs.



Another County class to decommission in 1980 was HMS KENT, seen here alongside the accommodation, ex-maintenance ship, RAME HEAD. The latter was paid off in 1972 and has been located at Portsmouth since 1976.



HMS TIGER in reserve with units of the frigate force of the 1960s and 1970s.



An unidentified landing ship lies on the mud whilst being broken-up.



Immediately behind the landing ship is another vessel, an early submarine, which has apparently lain in the yard for a number of years. Above the submarine's stern are two seaward defence boats being scrapped.



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The Sinking of the Flower Class Sloops



by DAVID DIMENT

HMAS GERANIUM in better times. (Photo — RAN.)

"In the final and most realistic exercise of the spring cruise of the Royal Australian Navy, the sloops MARGUERITE and MALLOW were sunk yesterday afternoon in 120 fathoms of water, 18 miles off Sydney Heads . . .

With these words, the Sydney press dramatically announced the end of the Flower class sloops in the RAN. The article on the Flower class sloops by Harry Adlam in the November/December/January 1979-80 issue of *The Navy* concentrated on the RAN service of the sloops. This article will concentrate on the "death" of the 3 sloops — GERANIUM, MARGUERITE and MALLOW.

GERANIUM — the RAN's first "real" survey vessel and using for the first recorded time a seaplane for hydrographic operations — was transferred on 10th June, 1932, for dismantling. Nearly three years later, GERANIUM was towed out the Heads and scuttled by demolition charges.

Far more dramatic was the end of the MARGUERITE and MALLOW. A few minutes after 9 o'clock on the 1st August, 1935, the cruisers CANBERRA and SUSSEX (the latter on "exchange" duty with the RAN), arrived at the rendezvous to meet the dismal funeral party of tugs towing the condemned

sloops, and three destroyers — STUART, VOYAGER and VENDETTA. The sloops were an unhappy sight. Their funnels and guns were gone and huge rust "scars" were evident. However, despite their appearance, the sloops met their end valiantly.

The cruisers CANBERRA and SUSSEX accounted for the MARGUERITE with "shattering" concentrated gunfire, which was hailed as a "masterpiece of gunnery". Eleven salvoes of shells filled with salt and not explosives were needed before MARGUERITE settled by her stern. The comment by the press was "salt and not TNT sent the sloop MARGUERITE to the bottom" — a rather humiliating comment for the poor old MARGUERITE!

The MALLOW was more reluctant to "die". Off Bondi, on the way to the ships' graveyard, the MALLOW shook herself free from her tow-line to the tug HEROS as if aware of her fate. Her freedom however was short-lived as a radio message was sent back to Garden Island and the naval tug WATTLE immediately put to sea and secured the drifting MALLOW. The MALLOW had demolition charges laid in her hull which were blown after the MARGUERITE was sunk. An eyewitness account gave the atmosphere of the occasion:

"There was a dull explosion. A cloud of dark smoke rose from the MALLOW. She took a heavy list to port and sank deeply until her decks were nearly awash. For a moment it appeared as if she would sink without further fight. But she rose again and shook the water from her decks . . ."

However, she listed more and more. Twice her forecabin was awash but twice she recovered before her final plunge. Before she disappeared into the depths, Rear-Admiral Randle Ford from the deck of CANBERRA waved his cap in a last farewell. On return to Sydney, Rear-Admiral Ford congratulated both cruisers on a "clean shoot and an excellent result."

As MALLOW was in her death throes a huge shark cruised around her. The hollowness of Rear-Admiral Ford's words are obvious if we see the shark as symbolic of the dangers of war just four years away from 1935. These three ships — surely not unfit for service — would have been invaluable for patrol work along the Australian coast.



The hulk of GERANIUM immediately before her scuttling on 24th April, 1935.

The Royal Australian Air Force in World War Two

Late in 1943, the Union Steamship Company of New Zealand vessel **WANAKA** all but met her end.

Swept over on her side on a reef during one of the worst cyclones ever experienced off the Queensland coast, in which ten of her crew lost their lives, she lay derelict and forlorn for several weeks until refloated by a major salvage feat. Then, following extensive docking, refitting and

"WANAKA"

by JACK MILLAR

over **WANAKA** to supply their forces. A complete 'tween-deck aft became accommodation space and rarely a trip went by without Air Force personnel taking passage.

WANAKA carried everything to sustain the RAAF in the air and on land.



WANAKA. (Photo — Jack Millar.)

repairs, the sturdy little **WANAKA** resumed her vital cargo-carrying role in the last few months of World War II for the Royal Australian Air Force.

On arrival in Australia in mid-1938, **WANAKA** immediately entered the coastal trade and, with a speed of 14½ knots, became one of the fastest ships on the coast. As a regular trader to Tasmania, she carried out her duties efficiently and well, neither expecting nor getting any praise. It was not until the Japanese entered the war with their attack on Pearl Harbour that she experience her moment of glory.

Shipping was at a premium and anything floating was pressed into service to help stop the Japanese sweeping down from the north. To build-up its strength in the northern battle zones, the RAAF took

Port Moresby saw her often, and she was the last ship out of Tulagi in the Solomon Islands before the Japanese occupation. She led a charmed life until shortly before Christmas, 1943. While returning from New Guinea on 16th December, disaster struck.

About 8.00 pm, while off the Queensland coast in the vicinity of Coen, **WANAKA's** Master, Captain J. Dawson, decided to anchor half a mile from Wharton Island. In the close confines of the Barrier Reef, this was necessary, as night navigation in the vicinity of Cape Melville was hazardous. The weather was overcast and threatening, with passing rain showers. Wind was from the south at Force 7, with the barometer reading 29.57.

As no wireless messages had been received advising cyclonic weather,

preparations to cope with an ordinary gale were put into operation. By 9.00 pm, the weather had taken a distinct turn for the worse. Ominously, the barometer fell rapidly, while the wind rose to Force 9. Captain Dawson ordered the port anchor let go, with the wind on the starboard beam. An attempt to bring the ship head to wind by engine movements failed. Around 10.00 pm, more anchor cable was paid out but, with fires flying from the brake band as Chief Officer Bowman and two sailors checked her, this was halted for fears the cables would carry away. Despite appalling conditions, these men remained at their posts on the foc'sle head until the bitter end.

The wind grew to Force 12 from the SSE and barometer 28.90 and eventually attained an estimated velocity of 100 mph. But worse was to come. At 11.00 pm, the barometer showed 28.00 — zero reading for the instrument.

The ship was in the centre of the intense cyclonic depression, and with it came a short, relatively calm period, with the wind switching direction, and dropping to Force 7-3.

Half an hour later, during a slight break, Captain Dawson sighted what sailors fear most — breakers close under the **WANAKA's** starboard quarter. Anchors were ordered to be heaved short, it being his intention to endeavour to steam to safety with full engine power while the lull lasted.

At 11.45 pm, Captain Dawson sent a sailor to the foc'sle to inform the Chief Officer to stop heaving at 45 fathoms. But he never made it; somewhere on the violently heaving foredeck, he was plucked away by the wind or swept to his death by the thundering seas crashing inboard.

By 11.55 pm the wind had again built-up considerably and, unable to carry out his original intention, Captain Dawson dispatched the Third Officer to tell the Chief to cease heaving as he now intended

to use maximum engine power with the remaining cable to hold her against the wind. Like the sailor before, he too was dashed overboard. Had either man reached his destination, it is doubtful whether he could have conveyed his message, so strong was the noise from the wind, rain and crashing seas.

WANAKA did come temporarily head to wind, but fell off to starboard, bringing the wind on the port beam. By midnight, the wind reached its maximum velocity, estimated at 120 mph, causing the ship to take on a 10 degree list to starboard. In the space of 90 minutes, **WANAKA**, with 75 fathoms of chain, had dragged her anchors the incredible distance of six miles.

At 12.00 am on 17th December, the ship was swept over on the reef at an angle of 85 degrees. Those who did have a firm grip on some immovable object, or were fortunate to be knocked against some part of the ship they could grasp, were swept overboard to their deaths. Engineers in the engine room had to scramble up the sky-light to the bridge, now lying on its Side. Captain Dawson and others on the bridge were flung to the bow side; some having to scramble out from under water, as heavy green seas pounded right over the ship. Down on the troop deck, Lieut Higginson, an RANVR passenger, fell from one side of the ship to the other — across instead of down the hatch. With a broken left leg and jaw, he managed to

climb up a tarpaulin and scramble to safety by his own efforts, where first aid was administered by crew members.

From a vent behind the bridge came faint cries. On investigation, they were found to come from the engineer's bathroom, where the Cook was trapped in water over his knees. He had been there two hours and with the exit cut off, was rescued through a port by the Bosun.

A melancholy dawn greeted the survivors. A quick muster revealed 10 men missing — three officers, three able seamen, three naval gunners and one RAAF sergeant. They were never seen again. All that day was spent huddled on the bridge, the fortunate tending the injured as best they could.

At 8.00 pm, the small American tanker **Y4** arrived on the scene, but had to stand off until morning before taking the survivors aboard. She took the party to the RAAF radar station at nearby Stanley Island, where Cairns was contacted by radio. Later a plane touched down with a doctor. It returned with Captain Dawson and Lieut Higginson. Subsequently a Catalina arrived and brought the remaining crew to Cairns.

WANAKA lay derelict and forlorn for about a month, a mass of twisted, tangled derricks and gear. It was then that Captain Williams was called in. To the inexperienced, it appeared impossible to shift **WANAKA** from the shelf on which she was so firmly lodged. Captain

Williams, ably assisted by Chief Diver "Johnno" Johnstone and Captain Dawson of **WANAKA**, a team of expert divers and the experienced crews of the salvage tugs **CAMBRIAN**, **SALVOR** and **CALEDONIAN** **SALVOR**, set to get her off the reef. Fortunately the reef to seaward fell away to deep water.

The idea was to make the ship buoyant then "launch" the hull sideways by towage, but to do this calm weather was essential. Over the next 27 days, steel covers were fitted over the hatches and pumps placed inside the wreck in such a way that they would plumb as the ship righted itself. Heavy ground tackle was laid out to seaward and the ship lightened. When all was ready, the salvage vessels, anchored close to the reef, began heaving on their powerful winches, from which a 6 inch line was made fast to **WANAKA's** masts.

With the pumps going full blast and the water level inside gradually subsiding, **WANAKA** slowly responded. First, the funnel rose above sea level. Finally, she slid off the reef and floated clear. It was one of the cleanest and most audacious ship salvage jobs ever undertaken.

WANAKA was towed to Sydney and repaired, returning to service in the last few months of the war. When released by the RAAF, she entered the Sydney-Tasmania run, first to Hobart and then, for many years until sold in 1965, to Launceston and the North-West coast.

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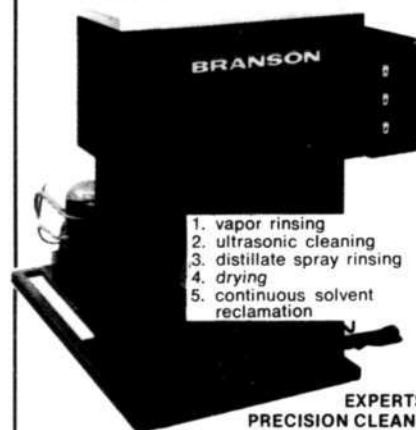
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SMALL SHIPS

The marine section of the Royal Australian Air Force in World War II comprised vessels ranging in size from WANAKA to small harbour craft. The following selection of ships, (courtesy of the Australian War Memorial), illustrates the variety of minor vessels, employed in support of RAAF operations in Australian and New Guinea waters. No details are known to exist regarding the RAAF's fleet, nor are names available for any of these craft.



RAAF No 02-1 built by Botherill and Fraser of South Melbourne. This craft may have been used for ASR purposes, general support or as a fast supply craft. (Photo — Australian War Memorial — Neg No 134495.)



No 08-37 at speed on Sydney Harbour. (Photo — Australian War Memorial — Neg No 134545.)



No 015-91 was a sistership of HMA Ships TORTOISE and TURTLE, which served in the RAN from 1962 to 1974. Used by RAAF as bomb scow. (Photo — Australian War Memorial — Neg No 134600.)



No 06-11, a sail powered ketch employed in northern waters. (Photo — Australian War Memorial — Neg No 134532.)



No 06-15, a steel lighter of about 350 tons. Length 120 feet, beam 24 feet, speed 9½ knots. Ten similar vessels served in the RAN. (Photo — Australian War Memorial — Neg No 134543.)

Letters to the editor

Dear Sir,

It occurs to me that some of my recollections of service in the Royal Navy in the 1914-18 war may be of interest to your readers.

In 1915, at the age of sixteen, I signed on as Signal Boy Royal Naval Reserve, a rating that did not exist before the war. Large numbers of vessels of many kinds were being hired by the Admiralty for auxiliary services; and signal ratings of the Regular Navy could not be spared for such ships. Signal Boys RNR were recruited from the Boy Scout and Boys' Brigade movements and the boys had to pass a test in semaphore and Morse signalling, as well as a medical exam, and of course had to provide a parental consent. I was from the Boys' Brigade and held the signaller's badge.

There could not have been a great many of us. As the war progressed, the signal rating deficiency was met by rapid training of young men recruited into the Royal Naval Volunteer Reserve for hostilities only (HO). Throughout the Services, throughout the war, Regulars were called "Active Service" (AS), and all others "Hostilities Only" (HO), even though all were seeing active service!

The Royal Naval Reserve, Trawler Section, (RNRT), was in the beginning entirely manned by fishermen, most of them HO, but a few recruited into the Reserve before the war. By the end of the war, all kinds of HO ratings were serving in trawlers.

The Royal Navy referred to the Trawler Section and Auxiliary Patrol as "Harry Tate's Navy", presumably because they saw us as rather comical, for Harry Tate was a well-known comedian living at the time. We certainly were not very well acquainted with Naval customs, traditions and procedures, and at least in the beginning had not learned to wear our uniforms in a "tidy" manner. Of course, when ashore, we had to wear proper uniform, but at sea we wore clothing to suite the work and weather!

After only a fortnight's training in the Signal School, RN Barracks, Portsmouth, I was drafted to the armed steam yacht ERISKA on the west coast of Scotland.

She had two signal boys and the rest of her deck crew were the finest bunch of seamen that I was to serve with in both the Navy and Merchant Service (16 ships in all). All the Officers and nearly all the seamen had served in sail. Our gunner had served his full time in the Navy and been 13 years in "Civvy Street" when he came back into the Service as a CPO. He had served in ships which were fully square-rigged, although having engines. He could rattle off the drill for muzzle-loading cannon ball firing guns equally as well as that of a modern 12 inch BL gun. As our sailmaker, he made canvas covers for everything! Another man had trained in the last of the training brigades of the Royal Navy. ERISKA was kept as only sail-trained men do as a matter of course.

When I reached 18 years of age, I applied for rating as signalman, but was informed that there were no signalmen RNR and I could have been discharged. I wanted to serve in trawlers and I signed on as Deck Hand RNRT and was drafted to RN Barracks, Portsmouth. There I did a short course of parade ground drill and gun battery training. We drilled in brown canvas gaiters, brown leather accoutrements and carried the .303 Lee Enfield rifle and long bayonette. In the gun battery RNRT ratings only went as far as the 18 cwt 12 pounder gun.

I was soon drafted to the trawler ALASKA, stationed at Portsmouth and carrying out minesweeping, patrolling and escorting duties in the English Channel. We spent a lot of time escorting slow convoys to France and saw quite a lot of that strip of Normandy coast where years later the great D-Day landing was to be made. It was all quiet in 1917-18, but

we could sometimes hear the rumble of the guns in the front line to the eastward. Mines and torpedoes accounted for a number of ships in our areas and we had losses too. I received an extra 2 pence per day for signal duty.

Later in 1917, we moved to Portland and in 1918, to Kirkwall, Orkney and Lerwick, Shetland, but were back at Portland when the Armistice was signed.

We were "darning" with paddle sweepers when that occurred and for a while after. Then the Mine Clearance Service (MCS) was formed for post-war clearing up of our own fields. I volunteered for it and was moved into the Admiralty trawler JOHN CAMPBELL. Men of the MCS were issued with a silver badge to be worn on the left arm. I never saw anyone wear it, for it was considered too large and conspicuous. I still have mine. It should not be confused with the small silver badge issued to the Auxiliary Patrol and Mine Sweeping Service in World War II, which was also worn on the left arm. Incidentally, I believe that in the second war "Harry Tate's Navy" was again spoken of, and I wonder how many people then knew of the origin of the expression!

JOHN CAMPBELL went north to Kirkwall and joined the fleet of sweepers to work on the great northern mine barrage laid only the year before. It stretched across to Norway, where we also set up a base. The greater number of mines were American magnetic mines and the US Navy swept their own, but our field of contact mines kept us busy until the end of 1919. We re-swept areas where enemy mines had been found during the war, which included off the Brough of Biscay, where HMS HAMPSHIRE struck a mine laid by U75 in 1916 and went down with all but a dozen men and with the loss of Lord Kitchener and his staff on their way to Russia.

My ship was in Scapa Flow when ordered to Kirkwall, and our crazy skipper decided on a short cut through Kirk Sound! All three eastern channels into the Flow were supposed to be satisfactorily blocked with sunken ships. No submarine was known to have even tried to get in that way during the war and no surface ship either in or out. But we went tearing through on an ebb tide, running like a millrace! There was barely room between two of the blockships. Our

port bow struck one of them and bounced off! We touched bottom several times and were through! Sheer good luck for the ship was quite out of control!

In 1939, the block ships were still there, with a thicker crust of brimstones and we'd. The Germans knew that the gap was there and sent one of their best U-Boats to take a look at it. U-47 with Gunther Prien in command entered Scapa Flow at night, on the surface, at high water I would think, and torpedoes and sunk HMS ROYAL OAK. U-47 then escaped through the same channel, despite touching bottom! Thus was at long last the vulnerability of Scapa Flow proven! The outcome was the construction of the Churchill Causeway, which completely blocks Kirk Sound and the other two channels and carries a roadway spanning all three.

In 1919, the surrendered German Fleet was anchored in Scapa Flow, manned by skeleton crews and awaiting the outcome of the Peace Conference. I was now in ML 96 as Leading Seaman, Coxswain and Signalman. We worked from Kirkwall and only heard about the scuttling of the German Fleet by its crews, but a fortnight later had to go to Lyness, Scapa Flow, to slip and put in a new propeller shaft. The sunken enemy ships were sticking up all over the Flow. A couple of destroyers were beached and part covered near the slipway on which ML 96 was cradled. I went aboard one of them and procured

from the bridge a couple of squared charts and the lower flag of a two-flag signal still flying and presumably associated with the scuttling.

I still have the charts and the clips off the flag, but the moths ate the flag long ago! The boats in which the Germans escaped ashore was just off the beach and in a naval cemetery a little way inland were the graves of the few who were shot.

We were on the slip when the Peace was signed and celebrated it by sitting around a fire on the beach drinking tea!

My last passage in a naval ship was made in ML 96 when at the end of 1919, we went from Kirkwall to Portsmouth and on to Southampton and paid off. My final discharge was in January, 1920.

Yours faithfully,
S. C. GILES
Penshurst, NSW

PS: One thing I have wondered about? Was a special mine clearance organisation formed after World War II to sweep our own mines? S.C.G.

Dear Mr Gillett,

As you are aware, HMAS ADELAIDE (FFG-01) is a new guided missile frigate and proud successor to an honourable RAN name.

We in ADELAIDE are trying to establish contact with ex crew members of the first ADELAIDE so that we might renew associations. It would be appreciated if mention of this fact could

be made in your publication together with the following address for replies:

The Commanding Officer
HMAS ADELAIDE FFG 01
C/- Central Mail Exchange
SYDNEY, NSW 2890

Sincerely

GLEN LAMPERD

The Editor,

The Navy,

Dear Sir,

I with many others read the interesting article on the origins of the Naval Reserve Cadets by Commander Geoffrey Evans.

However, I wish to correct the paragraph entitled Early Days.

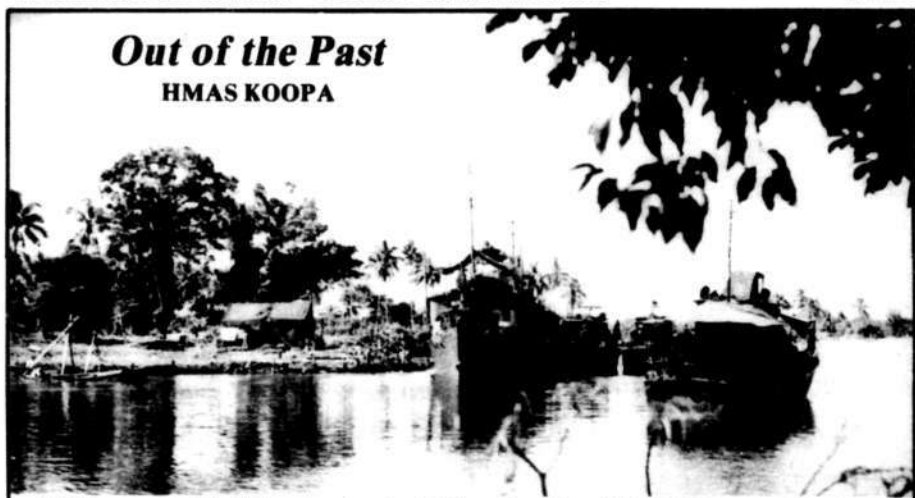
The first branch of the Navy League outside of the United Kingdom itself was officially chartered on the 26th November, 1900, as Branch No 53, covering all of Tasmania north of Latitude 42.15 south.

Boys Naval Brigades were commenced by the UK Navy League in 1899 and following this one was formed at Williamstown in Victoria in 1900 by members of the Victorian Navy. Units were also formed at Ballarat and Geelong during the great expansion of boys' organisations in 1908. When the Federal Government introduced compulsory cadet training in 1910, these units disbanded and did not restart until after World War I when they generally became Sea Scout Groups.

Yours Sincerely,

A. J. LEE

Out of the Past HMAS KOOPA



KOOPA was constructed in 1911 as a steam ferry for the Brisbane Tug and Steamship Co Ltd. She was requisitioned by the RAN in August, 1942, and commissioned on 14th September, as a Fairmile base tender, store carrier and training ship. During the war KOOPA sailed to New Guinea waters for the tender role, being shown here with three of her babes. A single 20mm Oerlikon is mounted on a handstand short of the bow. Later KOOPA transferred to the Royal Navy, (from July to September, 1945), before returning to the private trade in January, 1946. KOOPA was broken up at Myrtleton on the Brisbane River in the early sixties. (Photo — Australian War Memorial — Neg No 73975.)

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THE ROYAL NEW ZEALAND NAVY BAND

FOR MANY YEARS naval ceremonial
music was supplied by the Royal Marine
Bands of the cruisers on the New Zealand
Station.

Each light cruiser carried a twelve piece band, ample for the
normal ceremonials required. Being marine bands, they could
also perform as dance bands and string orchestras. With the post
war expansion of the RNZN, and of course the loss of cruisers on
the station, it was then decided that the RNZN should have its
own permanent band.

This came into being in 1961 and was enlarged in 1971 to its
present size of 24 permanent players. The band was an immediate
success, and is much sought after for official occasions. Being a
full military band, the quality of the music is that much better
than the normal all brass band. It is no wonder then that many of
the musicians in the RNZN band came into the service from
symphony orchestras.

Based at HMNZS "PHILOMEL", Auckland, the band
plays at a wide variety of functions. Musicians are dressed in
double breasted jackets and peaked caps, the cap band being
distinctive red, but this is to be changed to the normal black
cap band, and indeed may have been changed by now.

The average age of the musicians is slightly higher than we in
Australia are accustomed to with our navy bands. The RNZN
band is a closed service, with very little normal wastage. But let it
be remembered that the musicians are first class trained men.

In many ways the band is unique. In its ranks are WRENS as
permanent members. When the band is required for ceremonial
duties, it musters a full drum corps of WRENS. These girls are
not permanent band members, being all volunteers.

Their drill and musical ability leave nothing to be desired,
and they are a credit to the Dominion of New Zealand.

As for the band itself, it is commanded by a lieutenant as
Director of Music, backed up by a chief or warrant officer who
also doubles up as a drum major, the tradition of the Royal Mar-
ines Band is still quite evident. Indeed there are still a few ex-
"bootnecks" playing. The band is very diversified, and can give
first class concerts in many types of music, from strict military
band to Dixieland to a Glen Miller concert which the great man
himself would have been very proud to hear.

No matter what type of music they are playing, the Kiwi
Navy Band come through as real professionals. A wonderful
combination.



(Photo — Royal New Zealand Navy.)



(Photo — Royal New Zealand Navy.)

ACKNOWLEDGEMENTS

"THE NAVY" has again received excellent
support from numerous sources, including,
Harry Adam, The Australian War Memorial,
Lieut Rob Care-Wickham, RANR, Harold
Cliff, David Diment, Tony Grazebrook, John
McKenzie, Michael Melliar-Pheps, Jack
Millar, Ministry of Defence (Britain), "Navy
News", Navy Public Relations (Sydney and
Canberra), the Royal New Zealand Navy and
Comm B. Wilson, HMAS CANBERRA.

The deadline for the October edition is 3rd
August, 1981.

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NAVAL RESERVE CADET NEWS

TASMANIA

The Tasmanian Division NRC held its annual continuous training camp at Fort Direction army camp from January 17th to 27th. Cadets from the Army Cadet Corps and the Air Training Corps also attended.

A number of cadets were lucky enough to spend several hours afloat on HMAS JERVIS BAY. Cadet Petty Officer Thomas of TS DERWENT was chosen to receive the RSL Trophy as the premier cadet of the Division.

TS LEVEN has been recruiting women instructors prior to forming a girl's section.

TS YORK has acquired an ex-lifeboat for training from TS EMU via the Divisional Deputy Senior Officer LCDR (cadets) Strudwick.

During March all Units were inspected by the SO Cadets Tas CMDR (cadets) Heath.

All Units participated in ANZAC DAY ceremonies including a girl's section formed by TS YORK parading in uniforms that they had made.

TS MERSEY and TS DERWENT were represented by their commanding officers at a gathering at Government House for winners of the Silver Jubilee Fund Prince of Wales Trophy to meet the Prince on his recent visit.

During May, NOCTas, CMDR I. Bear, RAN inspected all Units to select the most efficient Unit.

Cadets from each Unit (six) participated in the Tas Div ATC annual training period at Brighton Army Camp in May. One cadet from each Unit joined the Victorian Division NRC annual

training at HMAS CERBERUS for seven days. The cadets were accompanied by LEUT (cadets) Cairns of TS DERWENT.

The Training Officer of the Tasmanian Division, LCDR (cadets) Seymour is overseas on a Silver Jubilee Award to study cadet training in Europe.

VICTORIA

Australasian Naval Trophy to Victoria

The Geelong Unit, Naval Reserve Cadets, TS Barwon has been judged the most efficient Unit in Australia.

The last time Victoria held the Navy League of Australia trophy was in 1959 when it was awarded to TS Barwon. Only twice to Victoria in over 22 years and Geelong did it!!

The Geelong Unit, under the command of Lieutenant Commander Bob Appleton has 83 Cadets, 5 Officers and 7 Instructors who are all feeling very proud of this achievement. It caps off the efforts that have netted the Unit the NL of Australia Colour as the most efficient Unit in Victoria for the past two years, the Inter Unit trophies for Cross Country running at HMAS CERBERUS and, for rigging and sailing at Williamstown.

This is a fine effort by Geelong competing against 7 Units within Victoria and 51 Units throughout Australia.

The naval signal telling of the award reads: FROM DEFNAV CANBERRA.

ANNUAL EFFICIENCY AWARD FOR NAVAL RESERVE UNITS. (1) THE NAVY LEAGUE OF AUSTRALIA EFFICIENCY TROPHY FOR 1980 HAS BEEN AWARDED TO TS BARWON (LCDR R. H. APPLETON). (2) THE CHIEF OF NAVAL STAFF AND HIS

ADVISORY COMMITTEE CONGRATULATE THE UNIT AND ALL CONCERNED WITH TS BARWON ON THEIR ACHIEVEMENT. WELL DONE.

TS Barwon wins Regatta Trophy

At the first ever Inter Unit Regatta for Victorian Naval Reserve Cadets the crew from TS Barwon, Geelong's own Unit, showed their supremacy to the other 6 Units.

Units from Mildura, Portland, Bendigo, Williamstown, Melbourne and Geelong were put through a speed rigging contest and a Yacht race at Williamstown recently.

The Geelong crew of Petty Officer Cadet James (Jock) Sturrock, aged 17, from Corio, Leading Seaman Mark Buyel, 16, of Hamlyn Heights and Leading Seaman Stewart Manson, 18, of East Geelong, rigged their craft in the fastest time of 7 minutes, 23 seconds, then won the sailing race by about 1/2 minute from TS Mildura and TS Voyager.

In the race, which was sailed in a 15 to 20 knot southerly breeze, Mildura was early over the line from Voyager (Williamstown) and Geelong.

At the first mark it was Mildura, with Williamstown and Geelong level. Unfortunately for TS Voyager, they hit the buoy and had to go round again. This let TS Barwon through who chased and caught Mildura.

Despite a valiant effort by TS Voyager to make up lost ground, Geelong had a big enough lead to win the race.

The trophy will be held by Geelong until the challenge round next year which will be held on Corio Bay.

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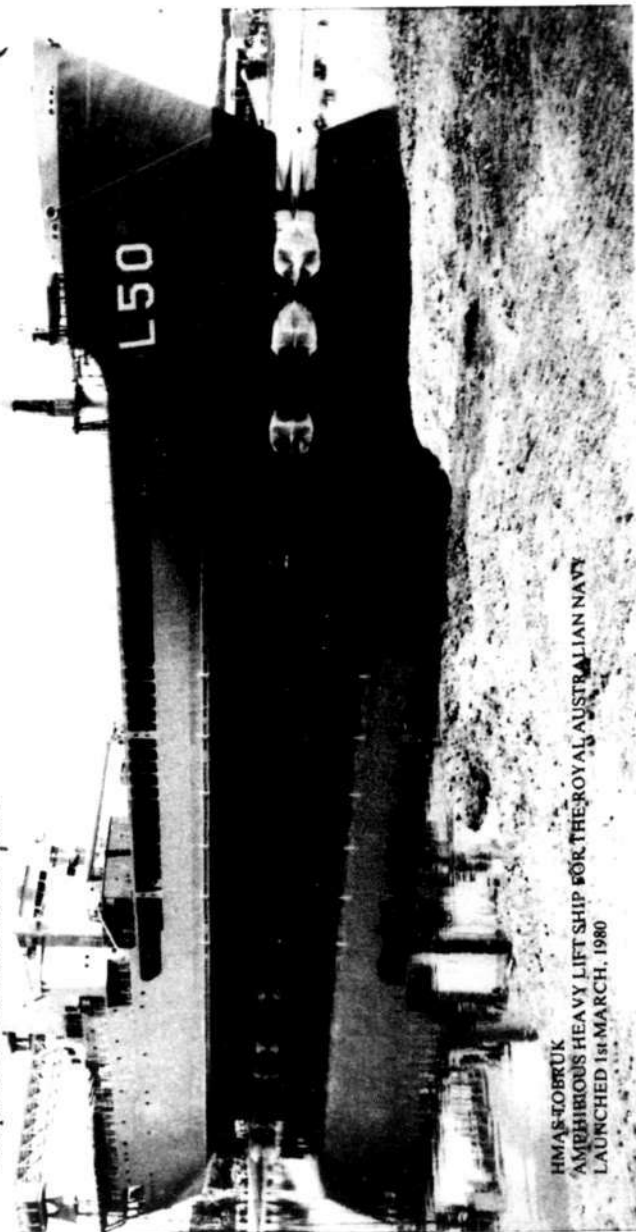
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