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Dear Readers,

Following thirteen years in the editorial chair it is a sad time for me to advise you that I have resigned and my place taken by Ross Gillett, who, in my opinion, is a most worthy successor and an editor who should serve you well.

Ross has a keen interest in the world's fighting navies and a considerable knowledge of affairs naval, demonstrated by his recently published book “Warships Of Australia”, which has been highly praised for its accuracy, high standard of illustration of photographs and written excellence.

I sincerely trust that all contributors, particularly the RAN and shipbuilders, aircraft and missile constructors, operating throughout the world, will continue to assist Ross in the manner which I appreciated and became accustomed to.

DENNIS P. TRICKETT

Editor's Comment

Beginning with this edition, “The Navy” will be presented in a different format from previous issues. The size of the magazine and type style have been changed and several new features will be included each quarter. It is anticipated that the size of “The Navy” will be maintained to the present number of pages, but to be successful the magazine requires the support of both its readers and members of The Navy League.

Articles, long and short, are needed to include in forthcoming issues. Contributions should be addressed to: The Editor, The Navy, PO Box 653, Dee Why, NSW, 2099.

Divisional Secretaries should be advised that any changes of address, new members or new subscribers to the magazine should send such information to the NSW Secretary, Lieut. Cmndr. B. Rowland, RD, RANR, 39 Waratah Road, Turramurra, NSW, 2074.

Many persons have assisted me in the preparation of this issue of “The Navy”. These include: Defence Public Relations, Canberra; John Mackenzie, Naval Historian; Barrie Smart and Tom Jackson, Navy Public Relations, Sydney; Harry Adlam; Kevin Brown; Harold Cliff; Tony Gracebrook; John Mortimer; Mike Phelps; and Westland Helicopters. To these people I offer my thanks and look forward to their future co-operation.

Features planned for inclusion in the May/June/July edition include: — The Admiralty “S” class Destroyers of the RAN; Fleet Air Arm Pictorial; Fact File No. 3 — HMAS DOOMBA; an article on the Royal Navy Sheffield class destroyers; and T. S. Condamine — Past, Present and Future.

ROSS GILLETT

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THE NAVY

Page Two
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The Westland Lynx, now a truly international helicopter is a multi-role aircraft of 10,500lbs all-up weight, and is powered by two Rolls-Royce Gem engines. Pictured in descending orders are Lynx for the navies of France, Brazil, the Netherlands and the United Kingdom.

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Westland Lynx of the Brazilian Navy. (Photo — Westland)

The Westland Lynx naval helicopter has now been ordered by six nations and is in service with four. The aircraft first flew on 21st March, 1971, and was delivered to the Royal Navy beginning in May, 1976. It is a multi-purpose helicopter, designed by Westland, but built in 70/30 partnership with Aerospatiale of France. The Lynx can carry ten men and is armed to suit the particular role: anti-submarine, vehicle replenishment, air-surface search, strike, fire-support or search and rescue. Maximum speed is 207 mph with a range of 418 miles (naval version).

Lynx in Service

Westland Lynx of the Brazilian Navy. (Photo — Westland)

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ADELAIDE REBORN

HMAS ADELAIDE was built by Cockatoo Island Dockyard between 1915 and 1922. She operated with the Australian Squadron until paid off to reserve on 27th June, 1928.

After a ten year lay-up, ADELAIDE was taken in hand for a major refit and modernisation, again at Cockatoo. The work involved her conversion from coal to oil burning and the removal of two six inch and three three inch guns. In their place, three four inch HA guns, 20mm Oerlikons and depth charge throwers and chutes were substituted. The cost of modernisation totalled more than £60,000. In October, 1938, in charge of a tug, ADELAIDE was moved from Cockatoo to Garden Island.

Thereafter followed her working-up trials off Sydney. The rejuvenated cruiser was tested thoroughly, but not without complications. The main six inch guns were tested, shattering bridge fittings. This, it seems, resulted from the blast caused by the displacement of air when the shells were fired. The cruiser's second salvo, fired at the extreme bearing from her starboard gun, created further havoc. The starboard searchlight was shattered, iron railings twisted and buckled, the canvas screens attached to the bridge railings were torn to shreds and the bearing indicator covering dome was blown overboard. The same mount was then tested to its extreme forward bearing, almost parallel with the ship's side. Salvoes fired from the forward gun at its extreme bearing inflicted damage to the port flag locker, bridge windows were also broken and even one of the ship's boats damaged. Officers reported that ADELAIDE's guns would probably never be fired from these extreme angles again.

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HMAS ADELAIDE, 1939, following her extensive rebuild and modernisation. Photo - M. Hendron.

The gun trials of the reborn cruiser were reported "satisfactory"!
ADELAIDE also carried out trials on her engines and paravane equipment in conjunction with these firings. The cruiser steamed at full speed in a heavy swell with a reported 70% of ratings and dockyard "mauvés" suffering from seasickness.

All damage was repaired before ADELAIDE proceeded to Jarvis Bay for further exercises. Captain H. L. Howden recommissioned the cruiser on 13th March, 1939, but on 17th May, she again paid off in Sydney, her complement transferring to the SS AUTOLCUS for passage to the United Kingdom, where they were to man the new cruiser HMAS PERTH.
The Spruance class destroyers are the largest destroyers yet constructed for the United States Navy. They will number 30 units, with the last ship due for commissioning in 1980.

**Key Characteristics:**
- **Displacement:** 7810 tons full load.
- **Dimensions:** Length 563.3 feet; Beam 55 feet; Draught 29 feet.
- **Speed:** 33 knots.
- **Range:** 6000 miles at 20 knots.
- **Crew:** 24 officers and 272 enlisted men.

The final armament now planned for each ship includes:

1. One eight inch Major calibre Light-weight Gun. Mk71, to replace the forward five inch mount (from 1980). The MCLWG has a rate of fire of between 10 to 12 rounds per minute with an elevation between -50° to +65°. The eight inch projectile weighs 118Kg.

2. One five inch 54 calibre Mk45 gun housed in a Mk52 single mount is to be retained aft. The weapon has a rate of fire of 20 rpm and can be elevated to 65°. The weight of the shell is 32Kg. Approximately 600 rounds are carried for the five inch gun.

3. Two 20mm Vulcan Phalanx CIWS are to be installed as a last ditch defence against missiles.

4. Two lightweight four tube cannister launchers for the Harpoon surface to surface missile are carried amidships. Each Harpoon is 15 feet long and at launch weighs 1470lbs. The missile can travel at Mach 0.9 for 50 miles. No reloads are provided.

5. One NATO Seasparrow anti-aircraft missile launcher is fitted aft between the helicopter deck and five inch gun. The missile is fired from an eight tube launcher and has a range of 1 mile. The missile weighs 120Kg.

6. One octuple Asroc eight cell launcher is placed immediately before the bridge superstructure. The magazine is located below the launcher, with the twin cells depressing to a vertical position for reloading. A total of twenty-four missiles are stored. The Asroc missile is 15 feet four inches long and has a range of one to six miles.

7. Two banks of triple torpedo tubes Mk32 are carried inside the ships superstructure, to facilitate loading as well as maintenance. Torpedoes are fired through side ports. Fourteen torpedoes are carried for the Mk32 tubes.

8. One SH-3 Sea King or two SH-2D LAMPS helicopters are also carried.

The Spruances are powered by four General Electric gas turbines, driving two shafts. Maximum shaft horsepower is 80,000. An anti-submarine variant of the basic Spruance design was approved for construction in 1978. Designated DDH 997, this "one of a kind" destroyer will carry up to four LAMPS helicopters, two five inch 54 calibre Mk45 single mounts, two Phalanx CIWS, two quad harpoon cannisters and two triple torpedo tube Mk32.

Electronically speaking, each Spruance super destroyer carries four principle radars. Four principle radars are installed in a layout designed to allow the addition of other radars as required. The primary surface search radar, AN SPS-48, is backed-up by a surface track radar ANS-PO9, while the primary air surveillance radar ANS-SPS40 is supplemented by the air track radar, ANS-PO9.

Two members of the Spruance class, USS KINKAID and USS HEWITT visited Sydney in late 1978. Only HEWITT had been fitted with Harpoon (see photo) and both still retain the forward five inch mount. Only one helicopter was being carried onboard each destroyer.
A. The Fairmile “B” Type

During the Great War, the Admiralty saw great use for patrol motor launches, and landed contracts in the United States for over five hundred of these useful craft. The ML did an extremely good job, and it was only natural that the type would find use in the Second World War. The WW II type was a great advancement over the original boat. It began its career as a private venture, but the Admiralty soon saw that the new craft was the one that really needed.

The Fairmile Marine Company was formed to manufacture the new ML’s. The “A” Type Fairmile was reasonably successful, but it had a few shortcomings, so a second type, known as the “B” Type Fairmile, was designed. The “B” design was planned for mass production, and different sections of the factory turned out boat components and fittings. It would appear that quite a few Fairmile “B’s” built in Australia during the war were in actual fact built from kits supplied from the Fairmile Marine Company in England.

Basically, the Fairmile “B” was a wooden ship of 80 tons displacement, a length of 112 feet, a beam of 18 feet six inches, and a draught of four feet four inches. Speeds of from 18 to 20 knots were obtained from twin screws driven by the well-known Hall-Scott Defender petrol engine. This was the same engine that was installed in the ASR’s, but in the ML the engines were geared, as against the direct drive arrangement in the rescue boats.

Armament varied due to the availability of suitable weapons. Some of the earlier ML’s were armed with old 3 prd. saluting guns (of 1878 vintage), some received the two pounder Rolls-Royce gun. The Rolls-Royce was not a very popular weapon at all, as it was a single shot weapon firing a 100 lb shell. As they became available, the 40mm Bofors became the main armament, and this was a well received addition. As far as secondary armament was concerned, it appears that most ML’s carried at least two 20mm Oerlikons mounted aft of the funnel, and a pair of twin stripped Vickers 303 inch MG’s mounted on either side of the bridge screen. Several 0.5 inch Browning machine guns were also mounted on the main deck. Depth chargers were carried, and the boats were fitted with ASDIC equipment.

They could be classified as “small major warships.” The Fairmile “B’s” were quiet comfortable, and in true navy style the officers had a wardroom aft and the crew lived forward. There was even a small petty officers mess, which was usually occupied by the motor mechanic and cox’n.

Thirty-five of the “B” type were built in Australia and were constructed by three different yards. In Sydney the Green Point Boatyard launched twenty two ML’s and Hatvorsen’s launched eleven. Norman Wright in Brisbane built the other three, which were the Wright-built boat being regarded as the aristocrat. The ML’s commissioned numbers in the same list as the Royal navy ML’s, and were numbered from ML 424 to ML 431, and from ML 801 to ML 827. Of these ML’s 430 and 827 were war losses, both being lost in New Guinea in 1944. The thirty-five ML’s were all commissioned within the period of 12 months. It didn’t take long to get them into the war zones, as is illustrated by the fact that ML 415 commissioned on 1st January, 1942, and arrived in Darwin on 8th April, 1943.

The ML’s did a very worthwhile job during their three years of war, but with the cessation of hostilities they became redundant, there being no place for them in the peace time navy. They were soon all sold out of the service, and many were to see years of active operations as pleasure craft, and many can still be seen today engaged on the tourist trade. It is pleasing to note that in most cases the original lines of these pretty little ships have been retained. Naturally enough the armament plating has been removed from the wheel house, but most retain the distinctive destroyer-type funnel that was one of their main recognition points.

For those interested the following is a list of the ML’s from the three building yards:

Green Point Boatyard, Sydney: ML’s 424 to 431 and 801 to 812.
Hatvorsen, Sydney: ML’s 813, 814, 817 to 825.
Norman Wright, Brisbane: ML’s 815, 816, 826 and 827.

b. The Harbour Defence Type

During World War II the RAN commissioned 30 small patrol craft that carried the designation Harbour Defence Motor Launches. These HDML’s were a smaller edition of the famous Fairmile “B” type. The overall length was 72 feet, the beam was 15 feet 10 inches and fully loaded drew about five feet. The displacement was 54 tons. Unlike the Fairmiles, the HDML’s were not fitted with a funnel, the exhausts being led out the stern as in normal small boat practice. They were much slower than the ML’s, the screws in this case being driven by twin screw diesel engines designed to be 12 knots. Armament varied as much as it did in the ML, but those units retained after the end of WW II were fitted with the 40mm Bofors.

Numbers for those boats were drawn from the Admiralty lists, and the first thirty HDML’s commissioned in fact ex-Royal Navy craft. The first unit commissioned was HDML 1161, which commissioned on 9th January, 1942. The last boat was HDML 1346, which ship hoisted her ensign on 6th January, 1945. Three of the class were built in the United Kingdom, nine in Australia, whilst the remainder were all built in various boatyards in the United States.

The prime purpose of this type was to provide patrol for enclosed anchorages and harbours, and to this end, depth charge equipment was carried. They were good sea boats, and some made their way as far as the Philippine Islands, where they went to work with the survey group. The careers of some of these boats lasted for years, and in 1978 at least two were still in service with the RAN.

After the end of the Second World War, there was a reclassification of ship types, and the “B” type were redesignated the grand title of SDML, short for Seaward Defence Motor Launches. From 1950 to 1958 15 SDML’s were built, and all were commissioned on 9th January, 1942. The last boat was HDML 1346, which ship hoisted her ensign on 6th January, 1945. Three of the class were built in the United Kingdom, nine in Australia, whilst the remainder were all built in various boatyards in the United States.

Armament was concerned, it appears that the secondary armament was well received. 40mm Bofors and 20mm Oerlikons mounted aft of the funnel, and a pair of twin stripped Vickers 303 inch MG’s mounted on either side of the bridge screen. Several 0.5 inch Browning machine guns were also mounted on the main deck. Depth chargers were carried, and the boats were fitted with ASDIC equipment.

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THE ROLE OF THE HEAVY LANDING SHIP

In November, 1977, the Prime Minister (The Right Honourable J. M. Fraser) announced that the RAN's new Heavy Landing Ship (LSH), TOBRUK, would be built by tutorial, in New South Wales, with Y-ARD Ltd participating in the design and management of the project.

Much prefabrication work is already in hand, and most items have been ordered. The keel is expected to be laid about the end of 1978. Visible details, some aspects of the programme are actually running ahead of schedule. Carriers are required to deliver TOBRUK to the RAN by June, 1980. All the signs are that they are going to meet this date.

A heavy is now addressing itself to the provision of the necessary base facilities, personnel and training. For reasons which need no elaboration, this requires close collaboration with the Army. Here we must examine some of the ways of using the tactical capabilities of the new ship in the Australian capability of making an assault.

TACTICAL CAPABILITIES

The design of HMAS TOBRUK is an extremely interesting and innovative project. The Bedivere Class of logistic Landing Craft (LCH) was specifically designed for LOTS (Logistics Over The Shore) operations. However, none of the LCHs have been pre-positioned military forces. Therefore, we are left with the options of detecting and destroying the attacking forces before they land, or of moving troops and equipment to eject or destroy the force after it has landed.

From what we can conclude from published reports, LOTS (Logistics Over The Shore) has not yet been designed. It is likely that they would come from either the Brisbane or Holdsworthy landing areas. The tanks, however, would have to come from Puckapunyal in Victoria. Unless all units involved in the LSH are to be concentrated in one area, TOBRUK will have difficulty in landing troops at points of call to embark her assault force.

All the signs are that the Army has not yet decided which ships, helicopters and overall operation will be used to land troops in Australia. However, it is being built at the insistence of Defence Central and not at the Army's wish. As it is now the policy of Governments to discuss Australian strategy only in the most general terms, authoritative commentators must gather evidence and carefully assess it in the future. The issue of the new Heavy Landing Ship will be the subject of some criticism by senior retired naval and military officials.

At least publicly, the strategic role of the LSHs, are specific in their design. They are designed for LOTS (Logistics Over The Shore) operations. The argument that, since the LCHs have yet to be designed, it is impossible to embark them in the LSH is invalid. It could be argued that we should seek to utilise those weapons, tactics and equipment which we can be good at using and which our potential enemies are unfamiliar with or inept.

In this context, an opportunity to use TOBRUK could arise. An unexpected landing to achieve tactical surprise and the destruction of an enemy unit may well be a very effective way of helping an ally without the disadvantage of a major ground commitment.

Whilst it is in itself a justification for building TOBRUK, TOBRUK must be an invaluable asset in a natural disaster, be it at home or overseas.
FACTOR FILE NO. 2

Ship: HMAS BANGALOW
Type: Cable Layer — Survey Vessel
Tonnage: 648 gross
Dimensions: Length 160 feet, Beam 36 feet, Draught 9 feet (mean), 11 feet (maximum)
Armament: One 12 pdr. 12 cwt MK5 High/low angle (60 rounds carried), Two 20mm Oerlikons (3200 rounds per gun carried)
Speed: 8½ knots (economical), 10 knots (maximum)
Range: 1800 miles at 10 knots, 2000 miles at 8½ knots
Endurance: 7½ days at 10 knots, 10½ days at 8½ knots
Bunkers: 120 tons of coal
Coal Consumption: 11 tons per hour at 8½ knots, 16 tons per hour at 10 knots
Provisions: Fresh water capacity — 249 tons. Fresh provisions — 10 days. All provisions — 3 months.

Ships Boats:
One 30 foot Clinker built, 30 hp
One 20 foot Lifeboat
One 16 foot Surf Boat
One 12 foot Dinghy

Troop Capacity: 200 ship to shore

Complement: 5 officers and 39 ratings

SHIP’S HISTORY
The steel steamship BANGALOW was built in Glasgow, Scotland for the North Coast Steam Navigation Company, and was completed in 1939. The vessel was requisitioned by the Royal Australian Navy and serving with the Survey Group was used as a lighthouse tender. She also acted as a cable repair ship from at least early 1943 before returning to the North Coast Steam Navigation Co after the end of hostilities.

In September, 1955, the NCSN sold BANGALOW to John Manners & Company. Renamed CAMBAY BREEZE, the steamer operated with her new owners, until in 1957 she was again sold, becoming the LUCKY CHEN. Two years later BANGALOW was resold and renamed LIAN MIN. Subsequently taken over by Singapore interests, the former naval ship was renamed EROPAGNUS.
WARSHIP PICTORIAL — Boom Defence Vessels of the RAN

The Bar class boom defence vessel HMAS KANGAROO as completed, September, 1940.

HMAS KARA KARA, shown here laid up at Athol Bight, was originally constructed as a vehicular ferry. The vessel ended her long career on 31st January, 1973, when she was sunk off Jervis Bay for target practice.

The remains of KANGAROO as she now lies, in the mud of Homebush Bay, on the Parramatta River. All superstructure has been removed.

HMAS KOOKABURRA, the navy's first boom defence vessel, was completed in February, 1939, served throughout World War II, and was not sold until 1965.

HMAS KIMBLA, last boom defence vessel in the RAN, has operated as a trial, research and oceanographic ship for the major part of her career.

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THE NAVY

Feb/March/April, 1979

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Page Seventeen
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Parades are held on Saturday afternoon and certain Units hold an additional parade one night a week.

The interesting syllabus of training covers a wide sphere and includes seamanship, handling of boats under sail and power, navigation, physical training, rifle shooting, signalling, splicing of wire and ropes, general sporting activities and other varied subjects.

Instructional camps are arranged for Cadets and they are also given opportunities, whenever possible to undertake training at sea in ships of the Royal Australian Navy.

Cadets, if considering a sea career, are given every assistance to join the Royal Australian Navy, the Mercantile Marine or the Royal Australian Naval Reserve, but there is no compulsion to join these Services.

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QUEENSLAND: Staff Office Cadets, HMAS Mortoon, Box 14167, GPO Brisbane, 4001.
WESTERN AUSTRALIA: Staff Office Cadets, HMAS Leeuwin, PO Box 58, Fremantle, 6160.

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(Signature, Division).

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Name (Mr) / (Mrs) / (Miss)

Address:

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Signature

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Enclosed is a remittance for $6.00 being my first annual subscription.

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Feb/March/April, 1979 THE NAVY PAGE NINETEEN
INTRODUCTION
The 10th April, 1979 marks the 20th anniversary of the beginning of construction of HMS LEANDER, lead ship and nameship of the class of general purpose frigates built for the Royal Navy. LEANDER was followed by 25 sisters, the last of which, ARIADNE, commissioned on 10th February, 1973, and which embraced two main variants. The first group included the original ten ships and a second six from the so called "middle period". Each carried a slightly different type of boiler. The second group, numbering ten vessels, also carried a variation in the boiler arrangement, but were mainly distinguished from the earlier units by their broader beams (43 feet in lieu of 41 feet) and were known as the broadbeam Leanders.

The 2450 ton standard Leander class frigates were designed to mount an armament comprising one twin 4.5 inch gun forward, one quadruple Seacat anti-aircraft missile launcher aft, one Limbo three barrelled anti-submarine depth-bomb mortar and one Westland Wasp anti-submarine helicopter. A subsequent addition saw two 2pmm Oerlikons added for "police duties".

Propulsion is via two double reduction geared turbines producing 30,000 shaft horsepower or a maximum speed of 30 knots. About 460 tons of oil fuel is carried. The Leander frigates are manoeuvred by twin rudders and are fitted with stabilisers to provide a good platform for their helicopter operations and gunnery and sonar systems. Crew accommodation is provided for 251 officers and men and 250 in the broadbeam Leanders.

Decision was reached that the class would be progressively updated beginning with LEANDER herself. The resultant modernisations have produced three basic Leander types, all differently armed. These are:

1. The Exocet Leanders — fitted to launch surface to surface missiles.
2. The Ikara variants — primarily anti-submarine ships.
3. The original general purpose frigates — yet to receive any transformation.

THE THREE VARIANTS
1. The Exocet Leanders now number at least eight units from group one, or the "middle period". The first such vessel to receive the French designed surface to surface missile was CLEOPATRA, which completed her conversion on 28th November, 1975. The major visual changes made to the ship included:
   (a) Removal of the twin 4.5 inch gun and in its place four launchers (two twin) for Exocet substituted. The launchers fire only one missile a piece and no allowance for reloads has been made.
   (b) To compensate for the loss of the 4.5 inch mount, two single 40mm bafors guns replaced the two single 20mm mounts abreast the foremost, just abait the bridge.

Nameship and leasipship of the class, HMS LEANDER. (Photo — Royal Navy)
Thus the armament now carried includes two twin Exocet and three quadruple Seacat missile launchers, two single 40mm Bofors, one embarked anti-submarine helicopter and two triple torpedo tubes. This weapons outfit equips eight units with HM ships CLEOPATRA, PHOEBE, SIRIUS, DIDO, ARGONAUT, MINERVA, JUNG and DANAEE having completed their Exocet conversion.

2. The Ikara equipped version first went to sea with LEANDER in December, 1972. Altogether seven ships of the first group received the Australian designed anti-submarine weapon. The eighth, PENELIPE, has been employed as a trials ship for the new Seawolf anti-aircraft missile system and will not receive Ikara until the completion of her present duties. The primary alterations made to the ships included:

(a) The twin 4.5 inch mount was replaced by Ikara. The launcher is enclosed within a circular shield and connected to the forward superstructure by an enclosed missile handling room resembling a long box.
(b) The two 20mm Oerlikons abreast the forecastle were removed and replaced by two single 40mm Mk9 Bofors.
(c) One additional Seacat launcher was sited above the hangar.

The Ikara Leander's armament now comprises one single Ikara and two Quadruple Seacat missile launchers, two single 40mm guns, one helicopter and one triple anti-submarine mortar Mark 10. LEANDER's conversion was followed by her sisterships AJAX September 1973, GALATEA September 1974, NAJAD July 1975, EURYALUS March 1976, AURORA March 1976 and ARETHUSA November, 1976.

3. The remaining general purpose frigates include the broadbeam ships. They are armed with the original weapons outfit including the two single 20mm Oerlikons which were a later addition. These ships are scheduled to receive the Exocet capability, the new Seawolf anti-aircraft missile system and improved sonar and modern electronic warfare equipment. Conversions began in late 1977 with ANDROMEDA, the first frigate selected.

CONCLUSION
A comparison of the two conversions shows without doubt that the Exocet frigates carry a more balanced armament and thus are much more close to the originally designed general purpose frigate. The facility to operate the larger and more modern Lynx helicopter also enhances its combat abilities. Lynx has been designed as both a platform for anti-submarine warheads and Sea Skua. The Royal Navy's new air to surface missile. The loss of the twin 4.5 inch is more than compensated for by Exocet, two additional Seacat launchers and two 40mm Bofors. In comparison, the Ikara Leanders are now mainly anti-submarine ships and must rely on escorting vessels to provide an effective anti-surface, and a lesser degree anti-aircraft, defence. The ability to locate and attack submarines via the helicopter Ikara system, as well as mortar, must surely raise these frigates amongst the best equipped A/S escorts available to the Royal Navy today.

The two missile conversions are in effect half life modernisations and should ensure the presence of the Leander class frigate in service until the year 2000, when the youngest, ARIADNE, will have seen twenty-seven years service. The replacement of the Seacat launchers by SeaSkua is to be performed initially on the ten broadbeam ships. The new launcher is a box-like structure containing six missiles apiece, each able to intercept incoming enemy aircraft as well as air to surface and surface to surface missiles. As with Seacat, no automatic reloading is provided. The Leander frigates currently comprise the largest single class of large surface combatants in the Royal Navy and should maintain this position for many years to come.

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THE NAVY
Feb/March/April, 1979

Page Twenty-Three
OUT OF THE PAST
— HMS ANSON

The King George V class battleship HMS ANSON in Sydney Harbour, 1946

With a design dating back to the NELSON and RODNEY of 1927, the King George V class battleship ANSON was authorised under the 1937 programme. A large number of designs were produced between these years, each slightly modified from the previous one. The displacement was limited by the Washington Treaty, and construction postponed by five years also under the terms of the Treaty. With a final design settled upon in September, 1936, ANSON was laid down by Swan Hunter on 20th July, 1937. The launching was performed on 24th February, 1940, and she was completed on 22nd June, 1942. ANSON was the fourth of five King George V class Dreadnoughts. She displaced 45,360 tons and was powered by Parsons single reduction geared turbines driving four shafts, producing 110,000 shp. ANSON’s main armament comprised 14 inch, 45 calibre, guns, housed in two quadruple and one twin mounts. Backing up these weapons were sixteen 5.25 inch, 50 calibre, quick firing guns in eight twin mounts. Anti-aircraft protection was provided by eighty-eight 2 pounder pom-poms (arranged 8 x 8 and 6 x 4), two quadruple 40mm before and sixteen-five 20mm Oerlikon guns, (arranged 5 x 1 and 6 x 2). As designed ANSON carried 80 rounds of ammunition for each 14 inch gun, 400 rounds for each 5.25 inch and 1800 rounds per barrel per pom-pom. Her radius of action at 14 knots was 2340 nautical miles, rising to 9000 miles at 14 knots. Protection was provided by a 16 inch waterline belt with an advanced system of underwater defence. Deck and side armour was well distributed. The total weight of armour was more than 12,000 tons.

The ship’s career in the Royal Navy began on 14th April, 1942, when first commissioned. ANSON joined the Home Fleet and performed long-range escort duties with the Murmansk convoys. Thereafter followed sorties against northern Norway, in which she participated with carrier-borne aircraft in an attack on German submarines, the conventionally powered OTAMA is the last of 35 Oberon and Porpoise class submarines that have been built at Scott’s for the Navies of the United Kingdom, Canada, Brazil, Chile and Australia. It also incorporates many of the improvements made to the class over the years, including the RAN’s unique passive range finding sonar, known as “Micropuffs”, and a larger capacity battery. OTAMA’s maiden voyage took the Australian White Ensign to a number of places for the first time. Visits to Copenhagen and Den Helder were followed by a week in London. A rough Atlantic crossing preceded visits to Halifax and Port Everglades in Florida. After transiting the Panama Canal, OTAMA visited Mazatlan in Mexico and spent five weeks in San Diego, California, conducting trials with units of the United States Navy.

The final stopover, before beginning the final leg of the run home to Sydney, was three days in Pearl Harbour, where exercises were conducted with other units of the US Navy.

As a new feature in “The Navy”, famous warships from the past will be highlighted in each issue. The first one selected, HMS ANSON, visited Sydney in 1946, when the accompanying photograph was taken.

With a design dating back to the NELSON and RODNEY of 1927, the King George V class battleship ANSON was authorised under the 1937 programme. A large number of designs were produced between these years, each slightly modified from the previous one. The displacement was limited by the Washington Treaty, and construction postponed by five years also under the terms of the Treaty. With a final design settled upon in September, 1936, ANSON was laid down by Swan Hunter on 20th July, 1937. The launching was performed on 24th February, 1940, and she was completed on 22nd June, 1942. ANSON was the fourth of five King George V class Dreadnoughts. She displaced 45,360 tons and was powered by Parsons single reduction geared turbines driving four shafts, producing 110,000 shp. ANSON’s main armament comprised 14 inch, 45 calibre, guns, housed in two quadruple and one twin mounts. Backing up these weapons were sixteen 5.25 inch, 50 calibre, quick firing guns in eight twin mounts. Anti-aircraft protection was provided by eighty-eight 2 pounder pom-poms (arranged 8 x 8 and 6 x 4), two quadruple 40mm before and sixteen-five 20mm Oerlikon guns, (arranged 5 x 1 and 6 x 2). As designed ANSON carried 80 rounds of ammunition for each 14 inch gun, 400 rounds for each OTAMA is the North Queensland aboriginal word meaning “dolphin”, the world-wide submariners’ emblem, and is the first Australian submarine to bear the name. The submarine has been adopted by the sixth Tasmanian town of Beaconsfield.

OTTAMA is the sixth and last of the RAN’s Oberon class submarines, the conventionally powered OTAMA is the last of 35 Oberon and Porpoise class submarines that have been built at Scott’s for the Navies of the United Kingdom, Canada, Brazil, Chile and Australia. It also incorporates many of the improvements made to the class over the years, including the RAN’s unique passive range finding sonar, known as “Micropuffs”, and a larger capacity battery. OTAMA’s maiden voyage took the Australian White Ensign to a number of places for the first time. Visits to Copenhagen and Den Helder were followed by a week in London. A rough Atlantic crossing preceded visits to Halifax and Port Everglades in Florida. After transiting the Panama Canal, OTAMA visited Mazatlan in Mexico and spent five weeks in San Diego, California, conducting trials with units of the United States Navy.

The final stopover, before beginning the final leg of the run home to Sydney, was three days in Pearl Harbour, where exercises were conducted with other units of the US Navy.

Lieutenant Commander F. V. R. Wolfe, RN.

Lieutenant Commander Wolfe was born in Bellinger, NSW, Australia, in 1938. He joined the Royal Australian Naval College in 1957, and attended the Britannia Royal Naval College from 1958 to 1959. He served in HMA Ships TOBRUK, MELBOURNE and GASCOYNE, until joining the submarine arm in 1963. After 4 years with the Royal Navy, he returned to Australia in HMAS OXLEY. After serving as Executive Officer of HMAS OTWAY, he qualified as Commanding Officer in 1970, and returned to Australia to command HMAS OYENS from 1971 to 1972. He then served with the Royal Navy from 1972 to 1975. After a short period in the Department of Defence, Canberra, he joined HMS OTAMA in March, 1977.
THE NAVY Feb/March/April, 1979

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NAVAL ROUNDUP

Defence Report 1978

The 1978 Defence Report, published in December, gave details of the progress on the major equipment projects affecting the three armed services. As far as the RAN is concerned, the most important new equipment acquisition is undoubtedly Harpoon, the American designed anti-ship missile. Approval has been given for stage 1 of a proposal for the multi-stage procurement of Harpoon for elements of the Australian Defence Force.

Other weapons provided for included further standard surface to air practice missiles and additional MK46 torpedoes for the RAN’s Oberon class submarines. Investigations are also continuing into various options for capabilities which might be introduced into the Defence Force following the decommissioning of HMAS MELBOURNE, planned for 1985. The question of a follow-on destroyer to replace the River class from the late 1980’s onwards is being undertaken within the Department of Defence.

A decision is expected in 1979 on the type of helicopter to be borne by the three Patrol Frigates building in the USA. The main contenders seem to be the British Westland Lynx or the American LAMPS.

Major equipment deliveries in 1978/79 will include HMAS FREMANTLE, the first of fifteen PCH 420 patrol craft, eighty 12 metre work boats and two self-propelled fighters. The Fleet Air Arm’s two HS 748 aircraft are to be fitted with electronic equipment. The contract for the installation was signed in December, 1977, and the first aircraft, fully modified to perform the ECM training role is expected to commence operations in late 1979.

A decision as to where the underway replenishment ship, to replace HMAS SUPPLY, will be built will be delayed until a tender is received from Vickers Cockatoo Dockyard.


New Zealand’s Navy

Chief at College

Rear Admiral N. D. Anderson, CBE, New Zealand’s Chief of Naval Staff, attended the Passing Out Parade at HMAS CRESWELL during late 1978. Forty-eight men from the degree stream who have been studying at the University of NSW and the Supplementary List, who have been undergoing the 15 months CRESWELL course, paraded at the College for the final time. Rear Admiral Anderson inspected the parade, took the salute and presented the prizes. He then addressed the gathering, stressing the need for unity of the strategic interests of Australia and New Zealand, and the need for an effective maritime defence capability. On the more humorous side, Rear Admiral Anderson showed his interest in the college’s band, (see photo).

---

Ship’s Refits

HMAS OTWAY, second of the RAN Oberon class submarines to join the fleet, paid off on 21 November, 1978, and is now undergoing a major overhaul and half-life modernisation at Vickers Cockatoo Dockyard. The work is expected to keep the vessel out of service to late 1980 and will include the update of all weapons systems.

The destroyer escort STUART has also been taken in hand for her half-life refit and will be decommissioned at Williamstown Dockyard midway this year. STUART follows her sistership PARRAMATTA which will complete her refit late in 1979.

The aircraft carrier HMAS MELBOURNE is expected to rejoin the fleet in March, 1979. Her refit, the latest of many, began on 17th July, 1978. The ship was moved into the Captain Cook Dock on 16th October.

---

"Bend an Ear" — What’s that note again? Rear Admiral Anderson paused when inspecting the band on the Passing Out Parade at HMAS CRESWELL and the camera caught an unusual angle with the Admiral seemingly poised to "catch that note again".

(Photograph — Navy Public Relations.)
Service Co-operation in Caribou Salvage

The RAN and RAAF joined forces last December to salvage the fuselage of a Caribou transport which crashed in Papua New Guinea two months ago.

The Navy training ship Jervis Bay brought the fuselage back to Australia where a Garden Island crane was used to lift the body of the aircraft on to a Navy lighter. A RAAF Chinook helicopter was then called in to execute the last stage of the recovery operation in Sydney Harbour. The big helicopter connected its winch to the fuselage in a delicate operation near Clark Island and then carried the wingless Caribou off to Hawker de Havilland's premises at Bankstown.

Surfing Ships

The two accompanying photographs depict HMAS SUPPLY, the largest ship in the RAN, and the destroyer escort HMAS STUART, riding the waves during the recent ANZUS exercise "Sandgroper". Ships from Australia, New Zealand and the United States participated.

Advanced Training Vessel

The English company Watercraft Ltd of Shoreham-by-Sea have constructed and commissioned the first of a new class of maritime training vessels, specially equipped to provide advanced instruction and practical sea experience. The new vessel, (see photo), is built of GRP and displaces 20 tons. Her normal speed is 12 knots, with an endurance of about 300 miles. The living spaces are situated forward and a large classroom for 12 students amidships.

Electrical power is provided by a 13.5kw diesel generator. The vessel is designed to provide an intermediate training stage, under live sea conditions between basic instruction ashore and appointment to an operational ship.

Promotions

Vice Admiral A. M. Synnot, presently Chief of Naval Staff, will become the new Chief of Defence Force Staff on 21st April, and Rear Admiral G. J. Willis, currently Flag Officer Commanding the Australian Fleet will be the next Chief of Naval Staff.

A. MacDonald, will be promoted to Admiral upon his appointment.
HMNZS PHILOMEL

The Cradle of the Royal New Zealand Navy

HMNZS PHILOMEL is the name of the naval establishment at Devonport, in New Zealand. This story is not about the present naval base, but the ship that last carried that proud name. The growth of the RNZN has run along similar lines to that of the RAN, but has taken a while longer due to the smaller population, and correspondingly the smaller amount of money available.

With the formation of the RAN in 1911 and the arrival of the fleet unit in 1913, there needed to be some re-organisation of the Naval Forces in the Australasian area. The Australian station had been commanded from Sydney, but this of course had to be closed down. The New Zealand Government wanted to play a part in naval defence and requested the Admiralty for the allocation of a training ship to be stationed in New Zealand for the training of New Zealanders. The idea was favourably received, and in 1913 the Admiralty agreed to turn over HMS PHILOMEL to the New Zealand Government. PHILOMEL was by no means a new ship. She was laid down in May, 1889, and launched on 28th August, 1890. PHILOMEL was of the same class of 3rd class cruisers that had formed the Australian Auxiliary Squadron and had been withdrawn from service in 1906. PHILOMEL commissioned on 10th November, 1891, and remained in commission until paid off on 22nd March, 1902. During this period she had seen quite a lot of service and in 1899 had landed some of her men to accompany the Naval Brigade to Ladysmith to fight the Boers. She also sent two of her 6.7 inch quick fire guns ashore on field carriages.

The cruiser was laid up in the Forth of Firth for over five years, during which time her old Australian sister ships had been sold off for scrapping. On 1st May, 1917, PHILOMEL paid off in Wellington with a C. & M. party aboard.

PHILOMEL "flies" through the seas while on patrol, World War One. (Photo — Royal New Zealand Navy)

By Harry Adlam

Middle East area, she made her way to New Zealand to take over her duties as the sea-going training ship.

The next stage of her career began when she commissioned in her new role at Wellington, New Zealand, on 15th July, 1914. On her shake-down cruise, when the Great War broke out, she was recalled to Wellington where her crew were brought up to full strength with the addition of what naval reservists were at hand. PHILOMEL then became an active member of the Royal Navy again, escorting New Zealand troops to Samoa, and later escorting New Zealand troopships to Albany, WA. She left the troopships in Wellington and proceeded to the Persian Gulf, where she carried out patrol work until 1917. Her commanding officer during this commission was Captain P. H. Hill-Thompson, RN. This officer was to play quite an important part in the early days of the New Zealand Station.

In May, 1917, PHILOMEL paid off in Wellington with a C. & M. party aboard. There was a war still being fought, and the idea of her being a sea-going training...
PHILOMEL as converted to an alongside base ship. In the background and to the right is the funnel of cruiser LEANDER. (Photo — Royal New Zealand Navy)

PHILOMEL had to be shelved. The New Zealand Government still wanted a definite participation in naval defence, and by an Order in Council, dated 20th June, 1920, with "The New Zealand Division of the Royal Navy" was authorised. This was a move that was to bear fruit. The New Zealand Government undertook to maintain a sea-going force and a training centre under New Zealand control. The cruiser HMS CHATHAM was commissioned into the New Zealand Division, and the old PHILOMEL raised steam for her last sea-going voyage in 1921. She proceeded from Wellington to Auckland to become the training establishment. In this role she would be stationary.

Her old main armament of eight 4.7 inch guns was landed, and a couple of more modern guns were installed for drill purposes only. PHILOMEL was secured alongside the training jetty near the entrance to the dry dock at Calliope Point. Devotedly and from 1921 until 1946 was part of the landscape. Buildings were erected ashore near the jetty, but PHILOMEL was "home" to all the trainees and their instructors, plus the base staff. Her appearance slowly changed. Large windows were cut in her sides to give better light and ventilation. Extra deck houses were built on her upper deck, but she still retained her two stately funnels, perhaps having visions of getting back to sea at some later date. By the outbreak of the Second World War it had become quite obvious that the old ship had become too small to accommodate the increasing numbers that were now appearing. Barracks were built on the shore, but the White Ensign was still worn by the old ship herself.

When the war ended PHILOMEL was a sorry sight. Gone were her funnels, her masts had been cut down until only one remained, and all sorts of huts had been built on her topside. PHILOMEL no longer appeared the sleek old style cruiser. In January, 1946, the ship was declared redundant and paid off for disposal. She was sold for the grand sum of £250 to the Strongman Shipping Company for scrapping. Some of her materials were used in the construction of a small coaster, but the hull itself was not an economic proposition to completely dismantle. In August, 1949, the old hull was towed out to sea and a hole blown in her bottom. As she sank, more than one Kiwi was noticed with clouded eyes.

The signal from the New Zealand Naval Board at the time of her paying off is well worth recording:

From NZNB to PHILOMEL 16-1-46

"The Naval Board record their regret at the passing from the service of the first of His Majesty's New Zealand Ships, a ship that has meant so much to all who served in her. She goes as many good ships have gone before her, but when HMNZS PHILOMEL's colours are hauled down for the last time at sunset this evening, the tradition which she has established during her long career will live on in the depot to which she has given her name."

The old ship has gone now, but many relics of her have been retained in the shore establishment. At the entrance to the depot and dockyard complex proudly stands one of her old close stowing bower anchors, and her crest is mounted on the iron gates. She had a long and worthy career and many Kiwi naval men did their initial training and later courses in her. And to her belongs the credit for the traditions which the Royal New Zealand Navy has acquired. It was a seaman from HMS PHILOMEL that was the first casualty in the Great War, so we can safely say that in two world wars, and the peace in between, PHILOMEL did her share. She had still been serving when in September, 1941, His Majesty, The King, sanctioned the title of "The Royal New Zealand Navy". She had trained New Zealanders for thirty-two years. There was one notable incident that she was unable to enjoy. On 20th June, 1968, the RNZN hoisted for the first time its own distinctive White Ensign, but the old "PHILOMEL Ship" as she became known in her later years, was not there to see it. The Royal New Zealand Navy are proud of the name PHILOMEL, and they have every reason to be.
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HMAS DOOMBA as first commissioned, showing limited reconstruction. The 4 inch gun is still located immediately before the bridge and the ship's boats and searchlight platform are carried behind the funnel. (Photo — Ron Wright Collection)

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COVER PHOTOGRAPHS
(Top) An "S" boat in a seaway. (Photo — H. Adlam)
(R.H. Centre) HMAS SUCCESS working up to full power. (Photo — Naval Historical Society of Aust)
(L.H. Centre) HMAS SWORDSMAN laying a smoke screen. (Photo — M. MacDonald)
(L.H. Bottom) HMAS TASMANIA showing the almost perfect lines of an "S" boat. (Photo — Australian War Memorial)
(R.H. Bottom) HMAS TATTOO built by the same yard as TASMANIA. (Photo — K. G. Brown)
The major articles of the May/June/July edition of "The Navy" are undoubtedly "Admiralty 'S' class Destroyers of the RAN" and "The Israeli Navy" prepared specially for the magazine by Harry Adlam and the Israeli Government respectively.

The majority of photographs used with the 'S' class are previously unpublished and illustrate the classic lines of these now vanished torpedo-boat destroyers. One of the most important points to arise from the article is the relatively short careers served by each of the five boats. This fact becomes increasingly important when all five were disposed of two years before the outbreak of a world war — "such is the shortsightedness of politicians", claims the author.

Israeli authorities have been most helpful in the preparation of the short history of their strategic and geographically important naval force. Few of the world's navies have experienced the type of sea warfare undertaken by the Israelis with their missile boats in the Mediterranean and Red Seas.

Tony Graebrook's, "Defence Procurement — A Problem?", examines the delays affecting ship procurement in the RAN today. The time wasted is clearly apparent.

This issue of "The Navy" also includes what is hoped will become a regular feature on the Naval Reserve Cadet establishments throughout Australia. Commanders of individual units are invited to submit similar articles dealing with their particular establishment.

This issue was supported by Navy Public Relations, Sydney, The Royal New Zealand Navy, Harry Adlam, Brooke Marine, T. S. Condamine, Tony Graebrook, the Israeli Consulate (Sydney), Malcolm MacDonald, John Mortimer and Ron Wright.

The August-September/October magazine will present as its main theme — European Navies and Warships, both past and present. In addition we also welcome to the ranks of contributors Captain John Moore, Editor of "Janes Fighting Ships". The principle articles will include A Pictorial Review of the Federal German Navy Today: Swedish Warships, Past and Present; The Italian Audace class Destroyers; The Progressive British Shipbuilder, Brooke Marine, will also be highlighted.

The editor is pleased to report, the overall response from readers to the new format of "The Navy" has been most favourable.

The above photograph (Courtesy Brooke Marine) shows the new patrol craft FREMANTLE, several days prior to launching. Another view can be found on page 16.

ROSS GILLET

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ALL RETURNS FROM AUSTRALIAN NEWSPAPER

RAN PERSONNEL ASSURED OF A GOOD SERVICE FROM JEFF CROUCHER & STAFF

Admiralty “S” Class Destroyers Of The RAN

By Harry Adlam

From 1920 until the arrival of STUART and four “V & W’s” in 1933, the running flotilla of destroyers in the Royal Australian Navy were five “S” class destroyers. These 905 ton boats were presented to the Commonwealth in 1919 by the Imperial Government in appreciation for the splendid effort put out by the Australian services in the Great War.

The “S” class were designed to counter the fast German torpedo boats, and were given a good offensive armament to prove their point. They were fast little ships, having the same power plant as the heavier “V & W’s”.

The technical details of the Admiralty “S” class show a torpedo boat destroyer with an over-all length of 276’ 0”, a beam of 26’ 8” and a maximum draught of 11 feet. Twin screws developing 27,000 shaft horse-power gave speeds of up to 36 knots. The armament was quite appropriate to a ship of such moderate dimensions. Three 4 inch QF Mark IV guns on Central Pivot mountings were the main offensive weapons. A 2 pounder Pom Pom was carried for close range AA fire. Four 21 inch torpedo tubes in two twin revolving deck mountings were carried. As was standard practice in British destroyers there were no spare torpedoes carried, once the tubes were empty the ship had to go back to an armament depot and re-load.

The “S” class were a very handsome class of ships, and had an extremely “racy” appearance. The Foc’sle had considerable sheer, with the edges of the foc’sle deck rounded off in a slightly “turtle backed” configuration. The bows were more flared than with the normal run of destroyers at that time, but the unfortunate fact remains that the “S’s” could be very wet when running into a sea.

An “S” boat at full power was a remarkable sight. The ships tended to squat by the stern, with the stern wash rising above the line of the quarter-deck. At the same time the stern rose a couple of feet higher, and combined with the bow wave which curled about three feet above the foc’sle, the ships certainly gave an air of graceful power.

The five “S” boats were led by the flotilla leader ANZAC, and the six boats were a very well accepted addition to the RAN.

ANZAC had been completed during the Great War, and had seen quite a lot of war service. The “S” boats were all brand new, being handed over to the RAN immediately they were completed. They were never commissioned as HM Ships.

The five “S” class boats were named SUCCESS, SWORDS MAN, STAL WART, TASMANIA and TATTOO. TASMANIA and TATTOO were built by Beardsmore of Dalmuir, which yard later turned out SHROPSHIRE.

STALWART was built at the yard of Swan Hunter, well known for the
Smiths Industries Head-Up Displays have been specified for
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construction of the second SYDNEY. SUCCESS was built by Doxford of Sunderland, while SWORDSMAN was built by Scotts, a yard well known at the present time for the construction of the RAN's "Geron" class submarines.

As the "S" class were completed they were handed over to the RAN and placed in commission for a short period only. The main problem was how to get the ships out to Australia. The RAN had just completed five years of war, and numerically was a very small service. In hard facts, there just was not enough men in the RAN to man the new ships.

There were however, a group of sub-lieutenants in the United Kingdom, who had been serving with the Royal Navy. These were the first term entry to the RAN College, now seasoned officers with service in the Grand Fleet behind them. One subby was appointed to each "S" boat and of course one to the flotilla leader. From the Navy List of 1919 we find that S/Lt J. C. D. Eadie went to SUCCESS. S/Lt J. A. Collins was appointed to STALWART. S/Lt E. A. Feldt to SWORDSMAN. S/Lt A. J. H.
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HMMS TATTOO, from stern showing lack of superstructure. (Photo — M. MacDonald)

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THE NAVY

HMMS SUCCESS'S Gunner (T's) chest swells with pride as a "tin fish" leaves the tube "clear". (Photo — M. MacDonald)
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Successful Tenderers to the RAN

THE ISRAELI NAVY

DOLPHIN, Third “T” class submarine to join the Navy. (Photo — Israeli Navy)

The Navy is Born

Since its foundation in 1948, Israel has been involved in four major wars with the Arab states. Much of the glory in these conflicts has been credited to the Air Force and Army, with the Navy playing minor roles in all but the last conflict. The main missions allotted to the navy have been, and still are:

1. To secure the sea lanes to and from Israel’s ports on the Mediterranean and Red Sea.
2. To deny the enemy any possibility of turning Israel’s coast into another battleground in the event of war.
3. To seal Israel’s shores against terrorists and the smuggling of arms and explosives.

The Navy’s story actually began on 17th March, 1948, when the establishment of “Naval Service” was approved. The first ships to join the new fleet were ex-immigrant transports previously employed in the carriage of refugees to Israel. These rusty hulks were soon joined by patrol launches, landing craft and other small vessels. One of these ex-refugee boats, the K18, was armed with machine guns and even a 65mm artillery piece, designed in the 19th century for mountain use. A second ship, EILAT, was constructed in 1927 to serve the US Coast Guard as an icebreaker and mounted four plywood “guns”. During the 1948 conflict, the new navy saw little action, save the K16, which intercepted three Egyptian vessels off the Israeli coast.

December, 1948, saw several bombardments of beaches from Gaza to Port Said.

The 1956 Conflict — The Fleet Expands

The period between the War of Independence and 1955 was one of laying the foundations for the organisation of the Navy on a regular basis. The first major combatant vessel, a former Canadian River class frigate, was acquitted in 1950. Named MISGAV, the six year old vessel was joined by two sister ships, the MIVTAKH and MISNAKE, over the next two years. Two former Flower class corvettes were also obtained. In 1955 it was decided to purchase two “Z” class destroyers from the Royal Navy. Both were transferred to Israel on 15th July, and renamed ELATH and YAFFO. Prior to their arrival two coast guard cutters had been obtained from the United States, and from Britain were acquired three HDML’s and three Vosper torpedo boats built in 1942. A flotilla of landing craft, (1 LCT, 1 LCI and 1 LCM), were purchased and two small minesweepers, DROM A1 and DROM A2, acquired from South Africa.

On 31st October, 1956, the navy captured the Egyptian Hunt class destroyer IBRAHIM EL AWAL after an unsuccessful scuttling by the Arab crew. The ship was taken into Haifa, refitted and commissioned as the Israel Naval Ship (INS) HAIFA. The same year the former US coastguard cutter EILAT was renamed MATZPEN and then served as a depot ship till its disposal in 1962.

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additional cutters were built in Germany in 1956 and a World War Two vintage submarine chaser was obtained from surplus stocks of the United States Navy. MISNAKE and MUTAHK were sold to Ceylon in 1959, where the sole survivor of the trio, MISGAV, was retrained to serve as a general purpose escort vessel until its disposal in 1961.

The navy's first submarines arrived in 1958, these being two former British "S" class. This pair were followed in 1964 by two "T" class, also built in Great Britain in World War Two. Both the LEVIATHAN and DAKAR, had been reconstructed in the late fifties. Tragically the DAKAR was lost without trace on her maiden voyage. The LEVIATHAN and DAKAR, had been disposed of in 1971 as had the two other ex-US destroyers. Both YAFFO and HAIFA were disposed of in 1976 as had the two ex-US destroyers. Both YAFFO and HAIFA were disposed of in 1976 as had the two ex-US destroyers. Both YAFFO and HAIFA were disposed of in 1976 as had the two ex-US destroyers. Both YAFFO and HAIFA were disposed of in 1976 as had the two ex-US destroyers. Both YAFFO and HAIFA were disposed of in 1976 as had the two ex-US destroyers.

The Six Day War and the embargo

At the outbreak of the 1967 Six Day War, the Israeli Navy was in the process of organisation and preparation for the arrival of a fleet of twelve missile boats. The navy's major loss in the Six Day War was undoubtedly the destroyer EILAT, sunk by Egyptian missile boats on 21st October, 1967, with heavy loss of life.

Despite problems connected with the French embargo, the navy succeeded in taking delivery of its remaining five missile-armed craft within the next two years. The boats, delivered unarmed, were eventually rearmed by the navy to their original configuration. The French, seeking new purchasers for the craft, were approached by the Panama-based, Norwegian shipping concern, Starboat & Weill. Assuming nothing unusual about the deal, French authorities sold the boats to the new buyer, not realising that Starboat & Weill, a phantom company, had in reality been set up by Israel. This done, Israeli sailors made ready for sea. Quietly cleared through customs, the flotilla headed into the English Channel — destination Israel, 3000 miles away. The Government carefully played the whole affair down, anxious to avoid confronting a French Government already embarrassed by the incident and by obvious indications that high-ranking French officials had aided the Israelis around the embargo. And still after the boats had arrived in Haifa, Israel blandly insisted that these craft would be used only in assisting oil drilling operations off the coast. Time of course told the true story.

As a result of the embargo, local shipyards began the construction of a second generation Saar class design, known as the Reshef class. To date some twelve of this type have been completed, or are still being built. Designed specifically for missile-carrying missile boats, the Reshefs carry two Gabriel surface-to-surface missiles, two 76mm OTO Melara and two 20mm Oerlikon guns. They have an endurance of 3000 miles at 34 knots.

The missile has a range of 12.5 miles in the first configuration and 22 miles in subsequent versions. All Reshefs were built by the Haifa shipyard, the first and name ship commission in April, 1973.

Yom Kippur and after

After the outbreak of hostilities in the Yom Kippur War of 1973, the Israeli Navy began sorties against Egyptian coastal ports and anchorages. During the conflict, missile boats sank one Egyptian destroyer. Both YAFFO and HAIFA were disposed of in 1975 as had the two other "S" class submarines. The Reshefs, six of which are currently supporting the missile flotillas in the Mediterranean and Red Seas are thinly armed with twelve Gabriel class coastal patrol craft. Twelve of these 35 ton craft were built in the USA, the remainder by the Israel Aircraft Industry. A basic armament of 20mm and 50 calibre guns are mounted. In May, 1977, the design of a new missile boat with almost twice the fire power was released. Known as the Dvora patrol craft, it differs from its predecessors by the addition of two Gabriel missiles, as well as the original gun armament. With a length of 71 feet and speed of 36 knots, the Dvora class can sail 700 nautical miles. This new mini-missile boat rates high in export potential, as have the Reshefs, six of which are currently building for South Africa. Gabriel has also been sold to several navies, including those of Taiwan and Singapore.

Today the Israeli Navy is a modern well-balanced force, basing its operations on the missile boats and submarines, and supported by the landing craft and other patrol vessels.

Current Fleet List

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<th>Type</th>
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<td>1975</td>
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FACT FILE NO. 3

By Ross Gillett

Launched on 10th October, 1919, by William Simons & Co Ltd, Renfrew, Scotland, as the Hunt class minesweeper HMS WEXFORD, DOOMBA first arrived in Australian waters on 22nd July, 1921. Following the Great War, DOOMBA, like hundreds of other surplus warships, had been laid up to await the scrapyard or the odd buyer. The Brisbane Tug and Steamship Co Ltd, were anxious to obtain a second steamer for their service, and after inspecting the ship at Montrose, where she lay, decided to purchase the vessel on 1st December, 1921, for conversion to an excursion steamer.

DOOMBA was the second largest auxiliary minesweeper to be used by the Navy in World War II and was one of the first trio of vessels to be requisitioned for war service. As originally completed she bore the pendant No NA7 and later NOI and J0I in the RAN. DOOMBA belonged to the later Hunt class minesweepers, of which 131 were projected and 95 actually built, including two launched and sold incomplete.

DOOMBA was converted for anti-submarine service. A single four inch Mk IV gun was mounted during a minor conversion at Kangaroo Point, as were two 20mm Oerlikons, four machine guns, two depth charge throwers and two depth charge chutes. This conversion was to cost £13,340. DOOMBA was commissioned as an HMA Ship on 25th September, 1939. The ship subsequently left for Sydney and there underwent a second conversion to an auxiliary minesweeper. On 24th November, 1939, she underwent trials off the New South Wales coast. DOOMBA reached 13 miles per hour. She expended 13 tons of fuel on all purposes and ran 6.74 miles per ton of fuel. The corresponding figures for October, 1919, when first commissioned into the Royal Navy were: 17.88 miles per hour, 1.87 tons and 9.56 miles per ton of fuel.

Early in 1940 DOOMBA left for Victorian waters and patrolled around Wilson's Promontory. She then returned to Garden Island. During 1940 she was purchased by the RAN for £12,000. Up to June, 1942, DOOMBA served around the south-eastern Australian coast and included visits to Eden, Twofold Bay, Melbourne, Bass Strait, Adelaide, Hobart, Williamstown, Port Welshpool and Waterloo Bay. Throughout this period she operated with numerous other RAN units, the main ships being SWAN, GRARA, DURRAWEN, KOROWA, WARRREGO, GOULBURN and BEVELL II.

DOOMBA paid off to 'F' class reserve on 13th March, 1946. Purchased by Penguins Ltd for £1174 in February, 1947, she was later resold to Meggi Ltd, also of Sydney, in 1951. The old minesweeper was taken in hand for conversion to a dumb lighter and was fitted with a series of bulkheads to carry lashed oil on Sydney Harbour. During 1969 DOOMBA (renamed MEGGOL in 1953) was sold and her remains taken to Homebush Bay in the upper reaches of Sydney's Parramatta River. There she lay as a hulk until December, 1976, when it was decided to sink her off Long Reef to form part of an artificial reef. Refloated, the DOOMBA was towed out by the Maritime Services Board tug A. R. FORD and was sent to the bottom at 11.12pm on the same day. She now rests on her keel in 120 feet of water, a short distance from the Manly ferry DEE WHY, which was scuttled on 25th May, 1976.
Naval Roundup

Helicopter Carrier for Italy

The recent decision of the Italian Navy to construct an anti-submarine helicopter-carrier again highlights a possible replacement for the RAN flagship HMAS MELBOURNE. To be named GAVI PIPPI GARIBALDI, the 13,250 ton ship is designed for the continuous operation of embarked helicopters and performance of control and command roles of task forces.

In line with the new HMS INVINCIBLE, the Italian ship has been given a through deck with the island superstructure sized starboard. A complement of 18 helicopters (SH-3D) will be embarked. For self-defence, two triple anti-submarine MLG, torpedoes tubes and four Grotiat surface to surface missile launchers have been provided. An air defence system is to be integrated.

Coastguard vessels, on coastguard duties, including surveillance of 10,300, and are planned to operate from the new Norwegian stands at 287, with orders for the navy version from Great Britain. France, the Netherlands, Denmark, Norway, Brazil and Egypt. The accompanying photograph shows the lead and nameship of the class a few days before the ceremony. The second vessel, RAN was launched by Brooke Marine on 15th February, 1978. All six of the Royal Norwegian Air Force has taken up an option which includes 40mm, 70 calibre Breda twin Dardo systems and two Albatross SAM multiple missile launchers will also protect the ship.

Main power will be provided by two pairs of Fast/GI LMM/2000 gas turbines. Designed for a maximum speed of 29.5 knots, DIESEL/SAMABALDI will be able to steam 9000 miles at 20 knots.

Norway Orders More Westland Lynx

Two more Westland Lynx helicopters have been ordered by Norway for coastguard duties. The contract, which includes spares, takes Norway's Lynx order book to six.

In placing the order, the Norwegian Air Material Command of the Royal Norwegian Air Force has taken on an option which was included in the first order for four Lynx in July, 1978. All six Lynx are due for delivery in 1981.

The Lynx are to be the up-rated version, at an all-up-weight of 10,500, and are planned to operate from the new Norwegian Coastguard vessels, on coastguard duties, including surveillance and rescue.

Lynx total order book, including the army version, now stands at 287, orders for the navy version from Great Britain, France, the Netherlands, Denmark, Norway, Brazil and Argentina. A further 200 Lynx are to be produced in Egypt for the Governments of Saudi Arabia, the United Arab Emirates, Egypt and Qatar.

HMAS FREMANTLE

The first of fifteen PCF 420 patrol craft on order for the RAN was launched by Brooke Marine on 15th February, 1979. The accompanying photograph, shows the lead and nameship of the class a few days before the ceremony. The second vessel, WARRNAMBOOL, is now under construction in Australia by North Queensland Engineers & Agents Pty Ltd. She was laid down during September, 1978.

Third Invincible Ordered

A third Invincible class anti-submarine cruiser has been ordered from the British shipbuilders, Swan Hunter. To be named ARK ROYAL, she will incorporate the ski-ramp and certain improvements over the two earlier ships of the class. Original plans were to name the vessel after a World War One capital ship.
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Out of the Past
HMS DEER SOUND

PORT QUEBEC displaced 8490 gross tons and was based on port ZA (Scotland). She operated with the home fleet, including the minelayers AGAMEMNON, MENETHEUS, PORT NAPIER and SOUTHERN PRINCE. These mercantile conversions laid their mines in relatively safe seas, leaving the more hazardous enemy waters to specially-built naval minelayers.

PORT QUEBEC was one of ten auxiliary minelayers requisitioned by the Royal Navy in World War II. She carried an armament comprising two 4 inch and four 20mm guns. On 1st January, 1945, she was purchased, renamed DEER SOUND, and became a repair ship. Prior to her sale the following year the ship visited Sydney.

Note the 20mm gun above the stern and the landing craft alongside and on the ship's davits.

PORT QUEBEC, 1945. (Photo — Ron Wright Collection)
The President of the Navy League of Australia, Geoffrey Evans, comments on the recent visit of Admiral Elmo R. Zumwalt.

Nearly five months have passed since Admiral Elmo R. Zumwalt, United States Chief of Naval Operations 1970-74, visited Australia and in ten days became better known to Australians than any military visitor in recent times. It is appropriate to look back on the visit and try to assess its significance.

Until he came to this country few Australians had heard of Admiral Zumwalt, but as not many know our own military leaders, this is not surprising. An exception was the defence-minded part of the community, especially those involved or interested in naval affairs, who well knew the Admiral's reputation as an innovator who had made significant changes in the United States Navy during four turbulent years as its professional head. Certainly none of his friends expected the Zumwalt visit would pass unnoticed!

Admiral Zumwalt's message was clear — no matter the traditional ties and goodwill between America and Australia, his country had reached a stage where it lacked the military resources, particularly naval strength, to assist Australia in the event of a major world upheaval, which would almost certainly result in America's attention being directed to Europe.

Close observers of the naval scene, including our own Navy League members and writers, have been aware of this developing situation for some time and have warned against over-dependence on American military aid in an emergency. Admiral Zumwalt however, spoke with an authority which simply could not be denied, and succeeded in driving his message home as few other people could do. If his words needed any reinforcement it came almost immediately with the debacle in Iran and events in Indo-China.

If notice is to be taken of contemporary newspaper articles and editorials, correspondence from citizens over a period of weeks, and latter references in talks and addresses, the Zumwalt visit allied with the events of February, 1979 marks the time Australians really started to face up to their vulnerability in a very uncertain world.

We in the Navy League now have a responsible part to play in making sure that having started, we tackle our national problems with all the resourcefulness with which Australians in the past have been credited.

Admiral Zumwalt
THE SHEFFIELD CLASS

1. Design History
2. Weapons
3. Hull & Machinery
4. Conclusion

By: Ross Gillett

1. Design History

The Type 42 or Sheffield class destroyer was originally designed as a medium-sized escort, primarily responsible for defence against air attack, submarine, patrol, gunfire support and surveillance capabilities. Vickers, the builders of the lead ship, described their creation as, "The warship with more quality-assurance than any yet seen." As envisaged, SHEFFIELD was to cost £20 million at 1966-67 prices, but the final price had reached £23 million when finally commissioned on 16th February, 1975.

To effectively perform her assigned roles, the destroyer carried a balanced armament and was given an operational radius of over 4500 miles at 18 knots. SHEFFIELD was ordered from Vickers Ltd. Barrow in Furness, in November, 1968. She was laid down on 15th January, 1970, launched on 10th June, 1971, and completed in February, 1973, a building time of over five years. Since the ordering of the lead ship, construction of a further 10 sisters has been approved. Four of these have entered service. Three other well-known British shipbuilders, Cammell Laird & Co Ltd, Swan Hunter Ltd, and Vosper Thornycroft Ltd, have shared construction of the Sheffield class destroyers with Vickers.

2. Weapons

The Sheffield class carries an armament comprising one Sea Dart surface to air missile system, one 4.5 inch and two 20mm guns, two sets of 12.75 inch torpedo tubes, plus one embarked Westland Lynx helicopter. The Seadart launcher is fitted on the forecastle between the bridge and 4.5 inch gun. Vertical loading is provided from the magazine directly below. The principle hull dimensions of the Sheffield class are: Length overall 410 feet; Beam 46 feet; and Draught 14 feet. Two smaller saluting guns are also carried.

The two banks of 12.75 inch tubes firing Mk 46 torpedoes were installed on the earlier ships of the class during their first refit and whilst building in the remainder. The Mk 46 torpedo is launched via either the tubes on deck or from the helicopter.

Last but not least in Sheffield's inventory of weapons systems is the Westland Lynx helicopter. The aircraft, when not in use, is housed in a spacious hangar at the after end of the superstructure. Lynx carries both anti-submarine torpedoes and the Sea Skua. Sea Skua is a surface-to-ship missile. The new weapon is 9 feet 3 inches long and 8 inches in diameter. Unofficially, Sea Skua's range is said to be 5 nautical miles.

3. Hull & Machinery

The Type 42 or Sheffield class destroyer was Length overall 410 feet; Beam 46 feet; and Draught 14 feet. Full load displacement is 4100 tons. Main power for propulsion is provided by a COGOG arrangement of Rolls Royce Olympus gas turbines, producing 50,000 shp. Main power for propulsion is provided by a COGOG arrangement of Rolls Royce Olympus gas turbines, producing 50,000 shp. Maximum speed is 30 knots. Considerable automation in the machinery spaces allowed a cut in engine room staff with, in fact, a number of machinery spaces operating unmanned.

Lubrication, power supplies and machinery control systems are designed to minimise interdependence. The two, five-bladed propellers of the Model XX twin
The last half of 1978 saw the Parliamentary Joint Committee on Foreign Affairs and Defence Sub-Committee on Defence Matters devoting quite some attention to the system of procurement of equipment (big and small) for the Australian Defence Force.

At least in part as a result, the subject received extensive media coverage. If the media are to be believed, the procurement system was subjected to very substantial criticism from industrial organisations supplying the Defence Force and from a number of informed organisations and individuals outside the Government, Public Service and Defence Forces. There was also some criticism of detailed aspects from a professional organisation representing some of the professional engineers employed in the Department of Defence.

This attack was followed by a spirited defence by the Department of Defence. There was nothing significantly wrong with the system, the Committee was told. Many interested members of the public may well have felt justified in claiming they could not judge which side was correct. As in any other debate, the great majority of those who gave evidence have some sort of vested interest in the subject under investigation.

Government Ministers have their political positions to consider. Public Servants have their jobs to defend. Professional Associations exist to promote the best interests of their members. Australian Industry wants a larger share of defence contracts.

The organisations which are nearest to genuine impartiality are those without a money involvement of any type. The Navy League is a good example. Many hundreds of thousands of words of evidence were submitted to the Committee. Out of all this, who is right? Is the procurement system instituted since 1973, producing the right equipment in the right place at the right time?

For that is the ultimate test. The system must be judged by results.

JUDGEMENT BY RESULTS

The institution of the new system came at a particularly difficult time — a time of a fundamental change in Australia’s strategy with the implicit change in types and sources of equipment. A number of major decisions should have been made. The equipment required as a result of those decisions should have been acquired, or at least be well on the way to entering service by now.

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There have been a number of decisions that have been implemented. These include:

- The acquisition of 100 LEOPARD tanks for the Army — most of these are now in service.
- The purchase of ten ORION P3C long range maritime patrol aircraft for the RAAF. These were required to replace the worn out NEPTUNES.
- Purchase of C130 HERCULES transport aircraft for the RAAF.
- Purchase of second-hand S2G TRACKER anti-submarine aircraft for the RAN.
- Acquisition of the second-hand training ship JERVIS BAY for the RAN.

These are the major decisions taken and implemented since the new system was instituted. With the exception of the purchase of the LEOPARD tanks (which many authorities question as being the best way to use scarce defence funds), most would accept that these programmes were justified. All were implemented reasonably promptly.

The political decision to go ahead with the proposal was made reasonably promptly. Apart from the RAN's decision to proceed with design work has been reviewed in THE NAVY. May/June 1978, page 3).

These examples suggest that some procurement decisions could reasonably be said to have been made promptly.

However, there are two important features. One of these is common to all of them — the equipment was purchased in the first, the four of these from overseas. The second-hand S2G TRACKER anti-submarine aircraft for the RAN.

None of the five successful major projects involved a Government Department purchasing major components locally. However, the strategic needs were identified and the best equipment purchased and commissioned reasonably promptly.

Unfortunately, the same cannot be said of a number (a considerable number) of other major projects to be considered this year. Strategic decisions — the basic decision to go ahead with the acquisition has not been made, and is contingent upon the political decision to be made in 1979. It appears that the political decision has been made but has not been implemented.

Major political decisions that have not been made include:

- A replacement for HMAS MELBOURNE. The need for the continued provision of air cover for the fleet has been recognised for years. A Maritime Air Study Group began full time consideration of the best means of provision of air cover in July, 1971, if not before. Today, seven and a half years later, no decision has been made.
- The need for more destroyers. To enter service after the ADELAIDE Class guided missile armed frigates (FFGs) are completed in the United States, was recognised officially by the then Minister for Defence (HON L. H. BARKARD) in the House of Representatives in April 1974.
- The need for a new underway replenishment ship. The decision to proceed with design work has been reviewed in THE NAVY. May/June 1978, page 3).

Examples include:

- In April, 1974, the decision to go ahead with the proposal was made reasonably promptly. Apart from the RAN's decision to proceed with design work has been reviewed in THE NAVY. May/June 1978, page 3).
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Although some projects run well — very well — it is impossible to avoid the conclusion that something is wrong, very wrong, with the procurement system for defence equipment.

The facts outlined in this article suggest that:

- There are major delays in many projects at the political decision making stage — the decision whether or not to acquire a new destroyer, aircraft carrier, etc.
- There are further delays in choosing which type of ship to buy to fill an approved requirement — which type of aircraft carrier, destroyer, etc.
- Once the order has been placed, there are good prospects that the project will run to schedule. The less is the involvement of the Australian Government in the procurement of individual components, the greater is the prospect of the project running to schedule.

Some projects run well — very well — it is impossible to avoid the conclusion that something is wrong, very wrong, with the procurement system for defence equipment.
BOOK REVIEWS

CAMERA AT SEA 1939-1945
Price: $22.45
Published: Conway Maritime Press
Reviewed by: "Gayundah"

"Camera at Sea 1939-45" is a welcome and fresh addition to the range of naval books available on the current market. After a more detailed examination of its 192 pages, I was not to be disappointed. The book contains within its covers over 250 black and white photographs together with 16 pages of colour. It is subdivided into eight chapters, each covering such aspects as: Warship Types; Weapons & Equipment; Navies in Exile; Naval Air Power; Operations; Victory; and of course, the colour section.

Most photographs are previously unpublished with such sources as The Conway Picture Library, Commander Stockton, and The United States Navy official archives, providing the bulk of the book. Writers contributing their information and research uses such like: "Who's Who" of maritime journalism, "Power"; Operations; Victory; and of course, the colour section.

Many interesting aspects of the design and conception are brought to light, and it seems rather odd that each type was actually a failure. Even the British "Trials" class, of which I myself am a confirmed admirer, was a costly experiment. All ships described seem to suffer in one main fault: they were all designed to provide heavy gun power, but at the expense of at least one other desirable factor.

In the case of the "Trials" it was the suppression of 50% of normal torpedo armament, and like all the ships described, inadequate AA capacity. The methods of rectifying these shortcomings are well covered, but it seems strange that whilst the US Navy had an excellent dual-purpose 3 inch, 50 caliber gun, the 1450 tonners were armed with low angle mounting. War experience showed that every nation had 'missed the boat' in this area.

With the Japanese "Special Type" we see just how advanced their nation was, with a view to go up to (and a bit beyond), the limits of the Washington Naval Treaty of 1922, resulting in some very unstable ships. As the writer points out in "The British Super Destroyer" class, "the Fukuji was a giant, but as David Lyon says, "certainly a Tribal never fought a Fubuki". The hydrofoil was used by the German Navy in the Second World War, and also proved successful types of fast fighting boats. One can only hope that Mr Fock has given the torpedo boat the same attention as the British, some given not the attention which it deserved in the dark days of the Second World War.

The various hull forms are dealt with and each nation seems to have a preference for a distinct type. The early British Coastal Motorboat was used the stepped hull type, developed through the pre-World War I racing motor boats, whilst the Germans preferred the round bilged shape, and carried on with this in the very successful "type C" class. The "E" boat in British Navy was the type of World War II. The introduction of the CMB was a fairly hardy exercise, and in the development of the original 40 feet length of the well known type of vessel. He shows no signs of favouritism, or forcing his personal views, but describes each type in a very straightforward manner. After reading the last 30% of the book, I do not know which is Harald Fock's pet boat. If he has one, he certainly keeps it to himself, as I found no real work of art. The selection of detail, and has left little to the

"The various types of fast fighting boats, one of the most interesting being the one that could cut up the enemy. The Royal Navy's 'Fighting Boats', many of the photographs were lost through petrol fires. One wonders why this type was not given the attention which it deserved in the Second World War. The various hull forms are dealt with and each nation seems to have a preference for a distinct type. The early British Coastal Motorboat was used the stepped hull type, developed through the pre-World War I racing motor boats, whilst the Germans preferred the round bilged shape, and carried on with this in the very successful "type C" class. The "E" boat in British Navy was the type of World War II. The introduction of the CMB was a fairly hardy exercise, and in the development of the original 40 feet length of the well known type of vessel. He shows no signs of favouritism, or forcing his personal views, but describes each type in a very straightforward manner. After reading the last 30% of the book, I do not know which is Harald Fock's pet boat. If he has one, he certainly keeps it to himself, as I found no real work of art. The selection of detail, and has left little to the

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"Fighting Boats 1970-1945"
by Harald Fock

This book must go down as one of the best reference books in recent times, with the only possible fault to apply its circulation is the rather high price of $75.75. Into 304 pages, illustrated by 212 photographs and 167 drawings, Harald Fock has been able to present a very comprehensive coverage of the development of the motor torpedo type of fast attack craft. He has covered the various efforts of many nations in this field, and I doubt if any one nation has more to show for all the efforts. He describes each type in a very straightforward manner. After reading the last 30% of the book, I do not know which is Harald Fock's pet boat. If he has one, he certainly keeps it to himself, as I found no real work of art. The selection of detail, and has left little to the

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THE LAST OF THE TALL SHIPS
— by Georg Kahre

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Cadets, considering a sea career, are given every assistance to join the Royal Australian Navy, the Mercantile Marine or the Royal Australian Naval Reserve, but there is no compulsion to join these Services.

For further information, please contact the Senior Officer in your State, using the addresses provided below.

SOUTH AUSTRALIA: Staff Office Cadets, HMAS Encounter, PO Box 117, Port Adelaide, 5015.
NEW SOUTH WALES: Staff Office Cadets, HMAS Watson, Watsons Bay, NSW, 2030.
QUEENSLAND: Staff Office Cadets, HMAS Mutton, Box 1414T, GPO, Brisbane, 4001.
WESTERN AUSTRALIA: Staff Office Cadets, HMAS Lease, PO Box 58, Fremantle, 6160.
SOUTH AUSTRALIA: Staff Office Cadets, HMAS Watson, Watsons Bay, NSW, 2030.

The Civilian Arm of the Navy

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The League supports the Naval Reserve Cadets who are administered by the Royal Australian Navy, which Service provides technical sea training for boys who may wish to serve in the Naval or Merchant Services, also to those sea-minded boys, who do not intend to follow a sea career, but who given this knowledge will form a valuable reserve for the Naval Services.

The League consists of Fellows and Associates. All British subjects who support the objectives of the League are eligible for membership. Members receive copies of the League's magazine 'The Navy'.

The Navy League of Australia
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(Miss)
(Rent)
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State
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Date

Signature

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To

Page Thirty

THE NAVY

May/June/July, 1979

Page Thirty-One
The state of South Australia was always proud of their old cruiser PROTECTOR and there were quite a few people who were down-hearted when the old fighting ship became a part of the property of the Commonwealth of Australia.

Her memory has not been forgotten in her home state, and if we care to look around Adelaide we can find some relics of this old ship. On the beach front at Semaphore is one very interesting relic. One of the old six inch guns from PROTECTOR faces out to sea as a constant reminder of the part it was designed to play in the defence of the colony. Locally known as the PROTECTOR GUN, this weapon is virtually complete. It is mounted on a Vassaseur short recoil central pivot carriage, and still retains its heavy shield. Not much can be detected on the gun or mounting so as to identify its maker or date of manufacture, as the Trust responsible for its upkeep have been very liberal with paint. Whilst the heavy coat of paint protects the steel surfaces, it would have been very easy to have used a thinner coat so that the stampings could have been deciphered. Be that as it may, this gun is a permanent monument to PROTECTOR, from the time she entered service for the colony of South Australia until the advent of the Commonwealth Naval Force and then the formation of the Royal Australian Navy. A couple of years before the Great War PROTECTOR was rebuilt and re-armed. Her six inch guns were removed and a mixed armament of 4 inch and 12 pounders was mounted. One of these 4 inch guns is on display at the town centre of Elizabeth. In this case the gun is not painted and we can gain a lot of information from the piece. It appears that the barrel was made by the Elswick Ordnance Company in 1888. It is a 4 inch QF Mark I and bears the registered number No 143. The mounting is a Mark I pedestal registered number 5901. On various parts of the carriage the marking S2 appears. This could be a maker's identification, or it could be a ship's marking denoting that the mounting was Starboard No 2 mounting. As there is no way of finding out when the gun was mounted in PROTECTOR it's history before it came aboard the old South Australian ship is unknown. However, it is almost certain that the gun was second-hand, and could have come from PIONEER or PSYCHE as both these ships were armed with four inch QF guns on pedestal carriages. The date of manufacture would certainly coincide with the two “P” class cruisers, and both were disarmed during the Great War. These two guns trace PROTECTOR's life, and also follow the changing pattern in naval gunnery, from the old breech loading system of the 6 inch Vassaseur through to the brass cartridge case in the 4 inch quick firing system as shown by the gun at Elizabeth. There is around Adelaide a larger gun, said to be from PROTECTOR, and this could be her old 8 inch BL 12 ton gun, but as yet this writer has not located it. When information is at hand it will certainly be passed on. In South Australia PROTECTOR is not forgotten.
The Navy

May/June/July, 1979

Page Thirty-Four

THE NAVY

May/June/July, 1979

Page Thirty-Five
ARAKAN AND ARDENNES

Two Landing Craft Logistic are now in service with the British Ministry of Defence (Army). Both ARAKAN and ARDENNES were constructed by Brooke Marine Ltd., having been ordered in October, 1974.

The accompanying photographs show the general layout of the two ships. Each craft displaces 870 tons standard and 1413 tons full load. Length overall is 240 feet with a beam of 47 feet and draught of 5.8 feet.

ARAKAN and ARDENNES possess a top service speed of 10.2 knots and can carry 350 tons of mixed cargo or five Main Battle tanks. The main machinery comprises two Mirrless Blackstone diesel engines. A crew of 35 men is carried with a further 34 army personnel embarked for amphibious operations.
Almost forgotten in these modern times is the old AMOKURA, almost but not quite. Her name is still to be seen in New Zealand's capital, Wellington, where the Navy League training establishment bears the title of TS AMOKURA.

Originally built as HMS SPARROW, a first class gunboat, the ship was laid down by Scotts, well-known for their building of Australia's "Obcon" class submarines, and was launched on the 26th September, 1889.

She was one of a class of nine ships, the others bearing the names of GOLDFINCH, LAPWING, MAGPIE, RED BREAST, RED POLE, RINGDOVE, THRUSH and WIDGEON. The length of these ships was 165 feet, with a beam of 30 feet and a normal draught of 11 feet 7 inches. The displacement of 805 tons ensured good stability for ships of these moderate dimensions.

The main armament comprised six 4 inch guns, backed up by two 3 pounders and two machine guns. The ships were single screw vessels with reciprocating engines of 1200 IHP to give them a speed of 13 knots. Coal capacity was normally 105 tons.

The ships were composite built, and were rigged for sailing, the rig being square on the foremast, with fore and aft sails on the main and mizen. This rig is usually referred to as the "gunboat" rig.

HMS SPARROW commissioned for service on the 13th May, 1890, under the command of Lieutenant P. Hoskyns, RN, and was ordered to the Cape of Good Hope. This was an interesting station for the navy in those days, as there was still some activity with the slave traders. On station SPARROW worked at times with a third class cruiser named PHILOMEL.
The ship which was later to be the main reason for the gunboat's sea-going career being curtailed. After ten years in commission SPARROW returned to the United Kingdom and on the 19th January, 1900, she paid off into reserve.

Towards the end of the year SPARROW was re-commissioned and this time for service on the Australian station, where there was a need for ships of her type. Life seems to have been quite peaceful for SPARROW during her time in Australian waters, and on the 31st March, 1904, HMS SPARROW was formally paid off alongside Garden Island in Sydney Harbour.

This could have been the end of the road, as the ship was not modern by any means, and was of a type that was of little use, but a new life awaited her. The New Zealand Government had been contemplating the introduction of a sea training school, where young New Zealanders could be fitted for a life at sea. The lack of a suitable training ship seemed to be the main obstruction to the scheme.

After some negotiations, HMS SPARROW was handed over to the New Zealand Government in Sydney on the 28th February, 1905. Captain F. C. Post was given the job of delivering the ship to New Zealand. The actual status of ownership took some time to clear up, but finally on the 10th July, 1906, she was purchased from the Admiralty for the grand sum of £1435.0.0. This was good business for the NZ Government, as they made a profit of £265.0.0. on the deal. The old ship became a coal hulk, mainly based in Westport, and though no longer sea-going, she helped keep other ships at sea.

In 1940 AMOKURA was taken over by the Union Steamship Company, who seem to have operated her until about March, 1953, when she was sold to a Mr W. J. Orchard. The ship was towed to St Omer, in Petrus Sound, where she was used as a storehouse and jetty combined. In this role AMOKURA only lasted a couple of years. Time had taken a toll on her hull, and she was no longer an economical proposition.

In 1955 the ex-jetty, ex-coal bulk, ex-NZS AMOKURA, ex-HMS SPARROW was broken up. She had done her job without any fuss for sixty-six years. A truly remarkable effort indeed.

In December, 1921, NZS AMOKURA handed down her colours for the last time. She had done a wonderful job, and she had done it in a wonderful manner. She was getting on in years, and was of no use to the New Zealand Naval Division. The ship was now thirty three years old and completely obsolete.

Old as she was there was still work ahead for AMOKURA. The vessel was purchased by Mr F. A. Jory for the sum of £1350.0.0. This was good business for the NZ Government, as they made a profit of £265.0.0. on the deal. The old ship became a coal hulk, mainly based in Westport, and though no longer sea-going, she helped keep other ships at sea.

In 1921 PHILOMEL became the training ship for the New Zealand Division of the Royal Navy. We now had two training ships operated by two different government departments, financial limitations decided that only one could be retained. One had to go, and reluctantly AMOKURA was given a notice to say that its services were no longer required.

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Old as she was there was still work ahead for AMOKURA. The vessel was purchased by Mr F. A. Jory for the sum of £1350.0.0. This was good business for the NZ Government, as they made a profit of £265.0.0. on the deal. The old ship became a coal hulk, mainly based in Westport, and though no longer sea-going, she helped keep other ships at sea.

In 1940 AMOKURA was taken over by the Union Steamship Company, who seem to have operated her until about March, 1953, when she was sold to a Mr W. J. Orchard. The ship was towed to St Omer, in Petrus Sound, where she was used as a storehouse and jetty combined. In this role AMOKURA only lasted a couple of years. Time had taken a toll on her hull, and she was no longer an economical proposition.

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a new word in anybody's language!

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*Submarine Weapons Update Programme

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