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The captured German yacht *KOMET* photographed on 4th November, 1914. During this period the vessel was being converted to a warship by Cockatoo Island Dockyard and thirteen days later was to commission as *HMAS UNA*. She is shown here in the Filteroy Dock with the River class torpedo boat destroyer *TORRENS* to the rear. (Photo — Cockatoo Island)

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Greetings to RAN

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Editor's Comments . . .

THE statement by the Minister for Defence, the Honorable D. J. Killen, on 25th March, 1980, provided further news of equipment acquisitions for the Royal Australian Navy.

The most important of these are undoubtedly a fourth FFG, a second underway replenishment ship, two Sea King helicopters, additional Mk 48 torpedoes and a further ten patrol boats. The last surviving "Daring" in commission, HMAS VAMPIRE will be retained in the training role after 1982 to 1986. Plans are also in hand to modernise the Perth class to a greater degree than previously planned. As well, studies are in hand for the "follow-on" destroyers, to be built in Australia.

The issue of the Tactical Fighter Force (75 aircraft) for the RAAF was also highlighted by the Minister. In this regard Vice Admiral Sir Richard Peek and Commanders Geoffrey Evans and A. W. Grazebrook of the Navy League, have prepared a paper "The Tactical Fighter Force and Maritime Airpower", which is reproduced within this magazine, commencing on page five. The study was sent to members of the Parliament, Opposition and defence academics and to date is serving its purpose, reminding people of the importance of projecting airpower at sea beyond the range of shore based aircraft. As yet no decision has been made in respect to a replacement for HMAS MELBOURNE, due for retirement in 1985, although designs for a new carrier are currently being evaluated.

An important event of recent times was the official launching of the new amphibious ship TOBRUK at Carringtons Shipyards near Newcastle, on 1st March, 1980. A photo supplement illustrating the day's main event appears in this issue. A selection of new book titles has been received and a new feature lists naval publications to be released during the ensuing quarter.

As an aftermath of Sydney's recent Japanese Midget Submarine/April Fools' Day hoax, many newspapers reported the submarine found was, in fact, K XII, a Dutch boat. To put the record straight the true story of K XII, written and illustrated by one of her owners, is published for the first time.

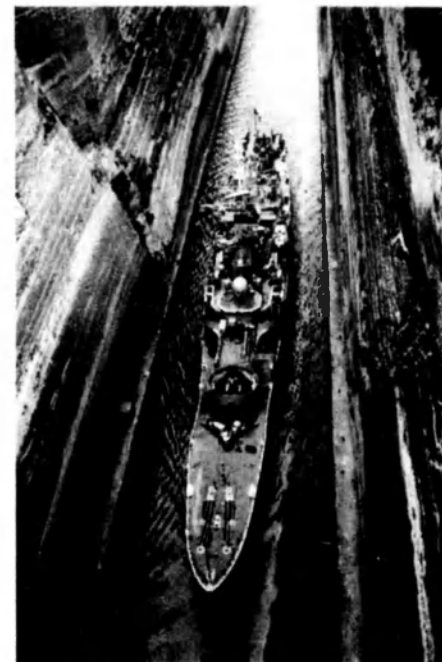
Those assisting with this issue of "The Navy" include; Harry Adam, B. J. Brown, David Diment, Geoffrey Evans, Tony Grazebrook, Ron Harr, John Mackenzie Historical Studies Section — Dept of Defence, John Mortimer, Navy Public Relations Sydney, Vice Admiral Sir Richard Peek, Mike Melliar-Pheps, The Royal Navy, The Royal New Zealand Navy, Mal Stephens and Ron Wright.

The next issue of *The Navy* will include articles on *Naval Field Guns and The United States Navy today*. James Goss, the magazine's new European correspondent will present his first report and *Warship Pictorial* will feature *Cruisers of the Royal New Zealand Navy*. The August/September/October issue will also contain the programme of *Navy Week* activities throughout Australia.

READER'S REQUEST

Lists of Army and RAAF operated vessels from the World War II era are required for a forthcoming issue. If you can assist please drop me a line.

ROSS GILLETT



The Ikara Leander class frigate HMS AJAX passes through the Corinth Canal during her last Mediterranean deployment. (October-December, 1979). (Photo — Royal Navy)

Front Cover

HMAS BOMBARD returns to Sydney after the successful completion of "Anchorman '80". Details of this, the latest RANR exercise, is featured in Naval Roundup p. (Photo — Navy Public Relations)

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The Tactical Fighter Force and Maritime Airpower

By Vice-Admiral
Sir Richard Peck
and Commanders
Geoffrey Evans and
A. W. Grazebrook

In a wide-ranging statement on foreign affairs and defence in the Parliament on 19th February, 1980, the Prime Minister referred to two major defence equipment projects which have been the subject of much discussion in and outside the Defence Department for a number of years — replacement of the Mirage fighters (the TFF project) and the options available to project airpower at sea when HMAS MELBOURNE retires in 1985 or soon after.

The relevant parts of the statement are:

"We will enter into a commitment later this year for 75 new tactical aircraft" and.

"Projects under consideration include: Capabilities we might acquire when our aircraft carrier HMAS MELBOURNE retires. . . ."

The Prime Minister's statement needs to be read in conjunction with two other statements concerning the TFF, both by the Defence Minister in Parliament, which read in part:

"TFF capabilities encompass air defence, air superiority, interdiction — including anti-shiping capability, tactical reconnaissance and close support of ground forces" (April 1978).

and announcing a short list of four aircraft in October 1978 —

"The short list of contending aircraft has been chosen taking full account of their capabilities in the air-to-air role. In addition, an important consideration has been the potential these aircraft offer in the air-to-surface roles of interdiction (including anti-shiping operations) tactical reconnaissance and the close support of ground forces".

The list was later reduced to two United States aircraft, General Dynamics' F16 and the McDonnell Douglas F18A, both essentially air superiority fighters. It is not the purpose of this study to query the strategic reasons prompting the need for this particular type of fighter — it is noted that the Prime Minister's statement does not appear to commit the Government to either of the aircraft nominated — but it does raise the question of their effectiveness in Australia's maritime environment, and it is to this matter that we address ourselves.

The answer to the question involves a number of major factors:

(1) To what extent in a conflict involving Australia the air superiority role would be relevant to maritime warfare, the outcome of which would almost certainly determine our country's future.

(2) The practicability of equipping, arming and training the replacement fighter squadrons so as to be effective in maritime warfare. For example, throughout their service life Mirage squadrons have had extremely limited opportunities to be controlled by naval ships or to participate in maritime exercises.

(3) Whether the relatively limited radius of action inherent in air superiority fighters could be extended sufficiently for maritime operations, either by use of air-to-air refuelling or by the construction of additional airfields, or by a combination of both.

Also to be taken into account are the types of operation in which our maritime forces are likely to be involved, quite possibly on their own, during the 1990s and beyond. This in turn depends to a large extent on an assessment of the forces likely to be in the hands of regional powers at the time. In this latter regard a number of assumptions can be made:

- By 1990 the USSR will have made available to any regional country which had been unable to obtain the West's Sea Harriers, VSTOL aircraft of the Forger (or descendant) type. Small aircraft carriers are already available from Britain, France, Spain and Italy to any buyer prepared to pay the relatively low price.
- Soviet designed and manufactured land-based aircraft of the Bear — and possibly more sophisticated — type will be available. With a radius of action of some 2500 miles, the propellor driven Bear Long Range Maritime Patrol (LRMP) aircraft can range the Indian and Western Pacific Oceans but is vulnerable to air defence fighters and cannot be escorted by land-based fighters in Australia's maritime approaches.
- The now 18-years old Soviet KYNDA class cruisers, and the succeeding KRESTA I class, will have found their way into regional navies by 1990. They will bring with them not

only the comparatively short-range SS-N-2 surface-to-surface guided missile but the much longer range (150-250 nm) SS-N-3 "Shaddock" system, and area defence anti-aircraft missiles supplementing the point defence anti-aircraft missiles already in service in regional navies.

- Apart from the threat posed by Soviet nuclear powered and armed submarines to any country at any time, modern and very effective diesel-electric submarines are available for sale from a number of Western and other countries. There is little doubt that regional navies will continue to move forward technologically and that the number of such craft in Australia's sphere of interest will increase.
- Mines, of which tens of thousands exist around the world, will continue to threaten the free movement of trade in the confined waters through which ships must pass at some time or another during their voyages.

To summarise, it must be assumed that the coming years will see a considerable growth of regional maritime power:

- Guided missile equipped surface forces
 - VSTOL aircraft for offensive and defensive purposes
 - Submarines and mining capability
- It must be assumed that all these forces will be available irrespective of any forces "outside" powers might deploy.

As the safe passage of ships and their cargoes to and from Australia is a prerequisite to the country's survival, it must be asked:

- How best is this to be ensured?
- Is the planned tactical fighter force relevant to the task?
- Is it in the right place in our order of priority for defence equipment?

THE TASKS OF THE MARITIME FORCES

The tasks of Australia's maritime forces — air, surface and sub-surface — in order of probable need are:

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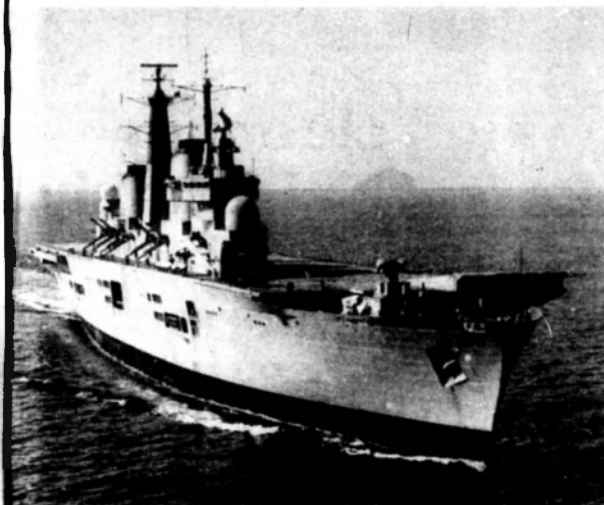
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HMS INVINCIBLE. (Photo — Royal Navy)

- (1) To protect our overseas trade against attack by submarines or mines.
- (2) To protect our coastal trade against attack by submarines or mines.
- (3) To protect our overseas trade against attack by seaborne aircraft (VSTOL), long range maritime patrol aircraft, surface forces, or by a combination of all three and submarines.
- (4) To assist in deterring or defeating an attempt to invade Australia.

If these tasks are to be successfully performed in the face of hostile maritime forces of the kind listed above, quite possibly without the assistance of allies (who could be otherwise occupied) or allied bases overseas, distance and the range of our equipment become of paramount importance. It must also be appreciated that there are significant strategic differences in the tasks required of our maritime forces, differences misunderstood or unrecognised in the Australian community and not least by the media.

The protection of coastal shipping requires virtually constant watch over all the sea and air space in the vicinity of Australia so that ships carrying vital cargoes such as fuel, ore etc. can use the local shipping lanes. A rather similar requirement exists in an "invasion situation" — the ability to move personnel and materials to any part of the continent under threat with the greatest possible freedom. Land bases, including airfields, facilitate this type of operation

although the latter in particular are restricted in both number and capability.

On the other hand overseas cargoes, generally in convoys of ships, must travel great distances and once they leave the Australian coast steadily remove themselves from the protection of land-based facilities including aircraft, and in most cases will be out of reach of them for some time. These convoys will require "on the spot" protection in certain areas, but unoccupied parts of the route will not need constant protection.

It is important that the distances involved in transiting the overseas routes be recognised. Trade to the west of Australia will require safe passage for some 2500 miles towards the Cape of Good Hope, and northwards towards the Suez Canal and the Straits of Hormuz at least as far as the equator.

In trade with Japan it would be unwise to count upon safe passage through the Indonesian Archipelago even with the goodwill and support of our Indonesian neighbours. Such trade may well have to be routed north-east into the Pacific, 1100 miles or so towards the Santa Cruz Islands before turning northwards.

Trans-Pacific trade, including replacement ammunition and spares for the US made or designed ships and aircraft which by the mid 1980s will constitute a substantial part of our equipment, will probably follow a similar route — towards the Santa Cruz Islands

and then north-east across the Pacific. Even our trans-Tasman trade must transit 1000 nautical miles.

THE TFF AND THE MARITIME TASK

Brief reference has been made above to limits imposed by the number and capability of airfields available to enable assistance to be provided for maritime operations. Even if a new airfield is constructed at Townsville, it would not provide the proposed replacement aircraft with sufficient range to reach much more than halfway to the Santa Cruz Islands. Furthermore, as surface forces move away from Australia they draw closer to islands which may well become involuntary hosts to submarines, surface or air forces in time of war.

To the north and north-west, our bases are better placed to make a major contribution. However an air superiority fighter (even those likely to be in service in the 1990s) would not be "long-legged" enough to provide cover for forces operating in the approaches to the Lombok or Sunda Straits — even when the proposed new airfield at Derby is completed.

In the Indian Ocean area our mainland airfields will provide nowhere near the cover needed to protect overseas trade. Existing airfields at Learmonth and Pearce, together with the proposed Derby airfield, provide cover only for the coastal routes and final stages of the overseas approaches.

Our off-shore Territory, the Cocos Islands, is better placed, at least as far as traffic from the Persian Gulf is concerned. The Cocos Islands however exemplify the difficulties which obtain at other airfields on our west coast. Whilst runways and some fuel storage facilities exist they are really little more than staging posts. Further, unlike ships and submarines, they are in a fixed position which will be well known to any potential enemy, resupply problems in the face of an enemy maritime threat would be formidable, and it will be necessary to guard them, if possible, against any attack. The Cocos Islands in particular are an ideal point for an attack by submarine based Commandos or by surface and seaborne air forces. To guard against such an attack it would be necessary to deploy a significant number of troops and combat aircraft for the defence of the Cocos Islands.

As remarked, the facilities currently available are limited and in general consist of runways able to take aircraft up to the size of the ORION P3 and the HERCULES C130 (take-off weights of 60

and 70 tonnes respectively) at Pearce and Learmonth, and reserves of some types of fuel. There are virtually no reserves of ammunition and spare parts, and personnel accommodation is limited in capacity and in habitability. They have air traffic control facilities, but no capability for the tactical direction of combat aircraft, air early warning capability etc.

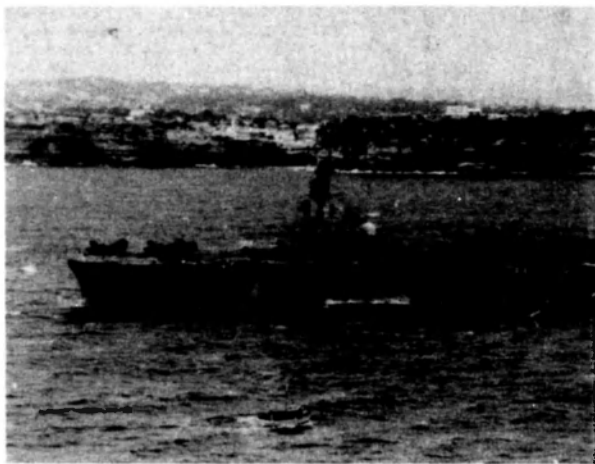
Modern control communications and sensors, accommodation for the essential rest of aircrew and for base staff, reserves of ammunition and maintenance equipment to avoid time-consuming and frequent returns to the RAAF's bases in southern and south-eastern Australia — all are essential for these airfields to function as anything other than staging posts. The facilities can either be bought and pre-positioned in peacetime, a fairly costly exercise (and it must be remembered that Learmonth, Derby and Darwin are liable to cyclone damage) or moved in as a war need arises. The limited information published indicates the latter course is envisaged but prevents its own problems.

The aircraft available for personnel/equipment moves is the HERCULES C130 of which the RAAF has twenty-four. In an emergency no doubt civil aircraft would also be available, their use to some extent governed by runway capacities. With a take-off weight of approximately 47 tonnes the DC9 could use runways suitable for the HERCULES (70 tonnes) and probably the slightly heavier 727 (86 tonnes); the 747 at 340 tonnes is in a somewhat different category and its use would appear to be restricted to major bases and airports. The projected use of civil aircraft would also involve fuel storage considerations.

In the unlikely ultimate of an invasion attempt, the time taken to move (say) a dozen air superiority fighters, their essential radars, control equipment etc. and their maintenance personnel is such that the extremely mobile enemy invasion forces could vary the point of attack to outside the range of the new fighter location. Flexibility in air operations involves far more than merely flying in aircraft from one base to another.

Air-to-air refuelling has been suggested as a method of increasing the range of air superiority fighters to enable them to play a worthwhile part in maritime operations. The United States Navy is familiar with the practice and the nuclear-powered attack carriers normally include four KA-6 INTRUDER aerial tankers in their aircraft complements; however it is generally acknowledged that there are a number of problems including:

- The vulnerability of the tanker — at all times.
- The vulnerability of the fighter during refuelling operations.
- The great difficulty of establishing



USS OKINAWA, 6th November, 1976. (Photo — R. Gillett)

rendezvous positions without breaking communications silence.

- Limits imposed by aircraft crew fatigue, and re-ammunitioning problems.

A vitally important requirement in air-sea operations is the capability to fully integrate the tactical operations of supporting aircraft with those of other maritime forces; this involves not only equipment but command arrangements.

In Australia the operations of the RAAF's ORION P3 aircraft are frequently and effectively integrated with maritime forces, and the RAN and RAAF have a good deal of experience in the matter. The very nature of the aircraft's equipment however commits them to maritime operations full time; their communications and sensor facilities are designed primarily, if not exclusively for that purpose, and there is very little use for the ORION other than for operations over the sea.

This is not so in the case of the proposed TFF, the primary purpose of which, as an air superiority fighter is to destroy other aircraft relatively close to its own base. Operations in an attack or strike mode to support maritime operations would be secondary unless command arrangements were made to ensure that a suitably equipped part of the TFF was committed to maritime operations to the extent and for the period required. Bearing in mind the distances involved, such operations may well last for several weeks and it would be manifestly unacceptable to despatch maritime forces on an operation on the assumption that air support would be

available, only to find after the naval or merchant ships were irrevocably committed that the air forces have been arbitrarily assigned to some other activity.

This may seem obvious but the tactical control of elements of the armed forces with separate navy, army and air force commands has been a vexatious issue since the advent of "the flying machine" and the perceived need of naval and army commanders to have air support for sea and land operations. So far as the former is concerned some nations have overcome the difficulty by assigning shore-based combat aircraft to their navies on a permanent basis eg. the USSR (which also operates a growing sea-borne air force), China and West Germany. The United States Navy overcomes this difficulty with its own very large air force operating from naval air stations ashore and carriers at sea. Australia, with a single defence force commander and provision for a maritime commander (whose wartime role is exercised in peacetime in operations such as Kangaroo III) is, theoretically at least, better off than some countries in the matter of overall command arrangements.

However problems arise when a task group commander at sea has to ask another commander to provide tactical air support, which he will usually want urgently. There will be many occasions when that other commander decides that he has other more important demands, with the result that the group at sea may receive air support too late or not at all — clearly a highly unsatisfactory situation pointing out the need for a commander afloat to have air power on hand and under his control.

MARITIME SUITABILITY OF THE F16 AND F18A

The fact that the primary purpose of the air superiority fighters on the short list is to control local air space, and that strike operations are secondary not only in name but in weapons and sensor equipment, increases doubts about their suitability for maritime operations.

In maritime operations of the type likely to be undertaken by Australia over the rest of this century, an air superiority fighter as such is unlikely to be required outside the Timor and Arafura Seas and in the north-western part of the Coral Sea (in passing, it might be asked whether missile defence would be a viable proposition for the protection of the important base of Darwin). At the same time there is a requirement for an aircraft capable of keeping hostile aircraft (both strike and LRMP) at a safe distance from our naval and merchant shipping, but this requires *air defence* rather than air superiority fighters. In foreseeable circumstances certain types of seaborne aircraft (eg the A4 SKYHAWK and SEA HARRIER) would appear to be adequate for this purpose, and the F16 and F18A unnecessarily sophisticated and costly.

There is clearly a *strike* as well as an air defence role for maritime airforces —

among other things to destroy hostile units as far away as possible from the operation under way — but given the limitations referred to in previous paragraphs, principally of range and the difficulty of achieving tactical integration, the F16 and F18A appear to be inadequate. In a sense, for maritime air defence they are too good, but not good enough in a strike role.

Maritime air power is in fact best projected from mobile seaborne platforms and particularly from aircraft carriers. Although the F18A is designed to operate from United States carriers it requires a large carrier not altogether appropriate for Australian circumstances. Smaller aircraft carriers are quite capable of handling a comparatively wide range of less sophisticated aircraft which, together with the resources of the ship, can respond to a variety of situations such as:

- Anti-submarine warfare
- Air Defence
- Afloat Support to Escorts
- Mining Capability
- Deployment and Landing of Combat Troops by Helicopter
- Reconnaissance & Surveillance
- Maritime Strike
- Strategic Support
- Long Range Search & Rescue operations
- Logistic Support to Troops

CONCLUSION

As stated previously the purpose of this study is not to suggest that Australia has no need for a tactical fighter force; that is a matter involving an assessment of threat to our land establishments and the resources available to acquire and maintain a TFF. It is however contended that acquisition of the fighter types proposed is unlikely to materially assist in ensuring the maritime security of the nation.

Under no circumstances should the TFF project be seen as an "option" for replacing HMAS MELBOURNE and the ability to project air power at sea. They must be considered separately. It is safe to say however that if Australia loses control of its ocean approaches in either peace or war, Australians will simultaneously lose their independence.

(Vice-Admiral Sir Richard Peak was Chief of the Naval Staff from 1970 to 1973, and Commanders F. G. Evans and A. W. Grazebrook are Federal President and Federal Vice-President respectively of the Navy League of Australia)

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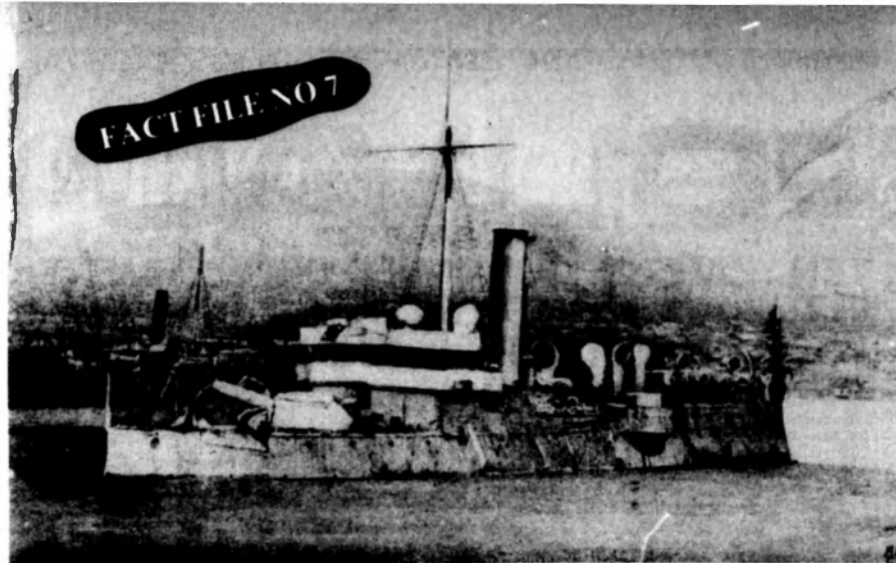
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HEI YEN. (Photo — M. Melliar Phelps)

— HEI YEN Japanese Coast Defence Battleship

CONSTRUCTED as the armoured gunboat PING YUEN, for the Chinese Navy, HEI YEN was built to German plans at the Foo Chou dockyard. This ship was laid down in 1883, launched in 1890 and completed for service the same year.

As originally commissioned, PING YUEN displaced 2,150 tons normal and 2,640 full load on a length at waterline of 230 feet, a beam of 40 feet and draught of 13 feet 6 inches mean and

18 feet 6 inches maximum. The ship was powered by two shaft reciprocating triple expansion engines. IHP was 2,400 giving a maximum speed of 10.2 knots. Bunkers totalled 350 tons of coal.

PING YUEN served with the Chinese Fleet until 12th February, 1895, when she was captured by Japan at Wee-Hei-Wei and renamed HEI YEN. About 1906 she was refitted to carry one 10.2 inch, 22 calibre BL (1 x 1), two 6 inch 40 calibre QF (2 X 1) and eight 3 pounder QF guns (8 x 1), as well as four 18 inch torpedo tubes mounted above water. Reclassified as a first class gunboat she later became a gunnery training ship and during the Russian-Japanese war assisted other obsolete Japanese ships in support of the army during coastal bombardment actions. However, on 18th September, 1904, in position 38°57' North, 120°56' East, the ship was sunk by a Russian laid mine, west of Pigeon Bay, Port Arthur.

HEI YEN was one of two Chinese battleships captured by Japan on 12th February, 1895. The other CHEN YUAN, renamed CHIN YEN, followed a similar life before being scrapped in 1914.

In the accompanying photograph HEI YEN's main 10.2 inch weapon is visible on the forecastle, with a single 6 inch QF on the port side amidships.

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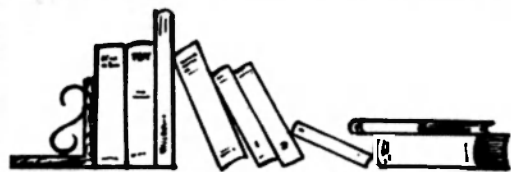
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BOOK REVIEWS

THE GERMAN NAVY IN WORLD WAR II

By J. P. MALLMANN SHOWELL
Published by: Arms & Armour Press
Price: \$33.50
Reviewed by: "Gayundah"

THE majority of books published concerning the navies of World War Two tend to concentrate primarily on the ships alone. However, within this fine volume on the Kriegsmarine, the author provides the reader with a most complete coverage of the German Navy in World War Two. It would be impossible to list every separate topic covered, but the principle ones include:

1. The Major Aspects of German Navy History.
1. The Organisation of the Kriegsmarine.
3. The German Fleet — Organisation
4. The German Fleet — Ships
5. The German Fleet — Warship Data
6. Rank, Uniform, Awards and Insignia
7. Biographical Notes
8. Features of the Atlantic U-Boat
9. Chronology; as well as a glossary, bibliography, three appendices and a comprehensive index.

More than 330 photographs and drawings accompany the text, which has been written by an author who knows his subject. Many of the illustrations come from previously unseen sources, including the author's own collection. One very interesting set of photos in the book shows Wilhelmshaven in 1918 and during the mid-war period. The former depicts the High Seas Fleet at peak strength in harbour, whilst in the second photo the area is almost empty of ships following the sale or scrapping of the fleet. Many of the onboard views, showing armament and other equipment, complement the fine views of the ships. The principle of the wolf-pack attack is also explained and illustrated.

In summary, this book provides everything there is to know about the German Navy. The book is well designed and most, if not all, photos have reproduced excellently. Definitely a book for the library.

May, June, July, 1980

BRASSEY'S INFANTRY WEAPONS OF THE WARSAW PACT COUNTRIES

Edited by: J. I. H. OWEN
Published by: Brassey's Publishers Ltd
Reviewed by: "Shtandart"

THE book under review here is the best this writer has seen, encompassing as it does not only the weapons designed and produced by the Soviet Union for direct use by its own troops, but also those designed and built for and/or by the various satellite nations and other political adherents.

Particularly noticeable is the extremely high degree of standardisation in the field of infantry small arms. The AK-47 and AKM series of assault rifles is a prime example. This weapon is either distributed to or manufactured by all the WarPac nations, albeit sometimes with local modifications. Another example is the RPG series of small tube-launched and shoulder-fired anti-tank missiles. It is worth noting that these two weapons, amongst others, have been encountered in use by even the IRA, so wide-spread have they become. The larger ground-launched 'Sagger' AT-3 anti-tank missile was distributed in great quantities to the Arab forces opposed to Israel; and the Israeli tank crews discovered to their horror that the little fibre-glass suitcases carried by many of their opponents in the field did not contain a change of clothes for a weekend away from home! It is interesting to note that the Red Army has apparently acknowledged that the very compactness of the AKM does not make it a graceful ceremonial parade weapon, and for this purpose has retained the slim but obsolete SKS Simonov carbine. Rarely noticed in detail amongst a guard of honour; the SKS appeared in close-up on the front cover of the February 11, 1980 issue of an American weekly news magazine, resting on the shoulders of what were obviously 'show' troops.

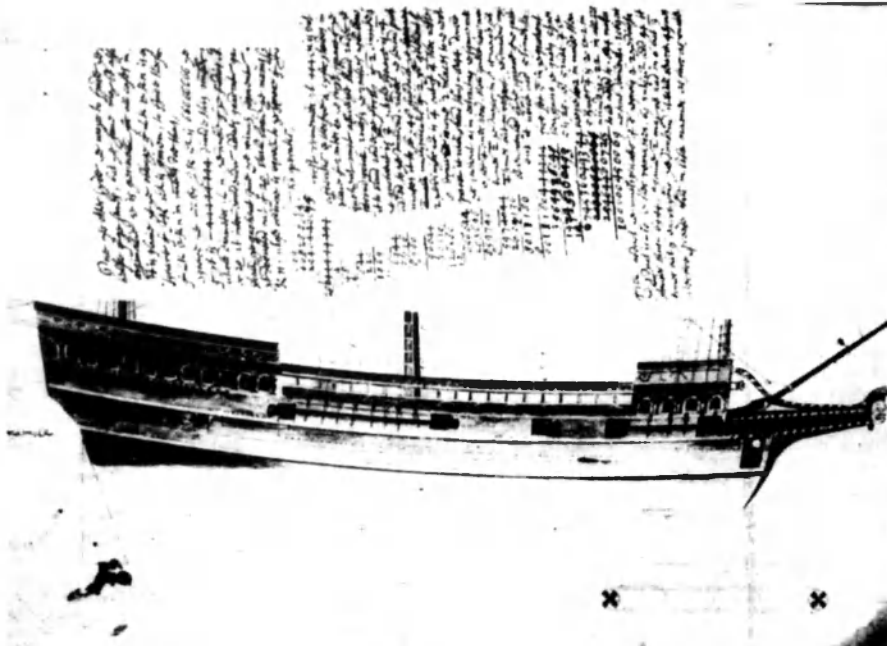
Wide dispersal of proven weaponry makes glaringly obvious a great flaw in the NATO forces. The national pride of individual Capitalist and highly industrialised Western nations has resulted in many of their number designing and adhering to weapon systems with few (if any) common users

other than the parent country. The result of this kind of chauvinism which flies in the face of survival logic has been an absolute plethora of small missile systems for various purposes. Many perform exactly the same tasks at similar ranges and with similar propulsion/warhead combinations. The same can be said of the New Age Western infantryman's rifle except for the blessed fact that here, at least, the 7.62 NATO round has been accepted by most of the NATO countries. France, the most unreliable and foolish nation in Western Europe, not only broke with NATO, but chose to make her own arms and calibres at practically every level; thereby cutting herself off from other arms supplier nations under the hopelessly inept guise of 'Independence'. Even her torpedoes can be fired only from French-built tubes!

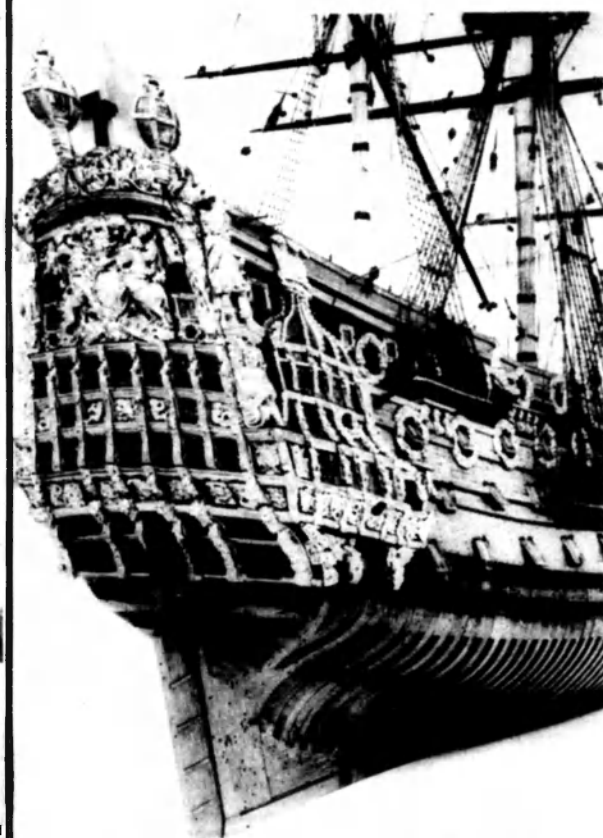
Hand grenades and rifle grenades, flame-throwers, mortars, light and heavy machine-guns, mine detectors, optical devices and night-sights, sub-machine guns and even bayonets. They are all fully covered. At this point it is worth noting that Czechoslovakia is obviously the commercial arms baron of the Warsaw Pact pantheon. Well-made and finished arms of all types have found their way to all corners of the Third World and into the hands of so-called 'liberation' armies. Unusually in a book of this type, wheeled and tracked Infantry Support Vehicles such as Armoured Personnel Carriers etc are also included. With their 73mm turret guns, the BMP series of Infantry Combat Vehicles (armed APC's in Western forces) could double as light tanks. However they incorporate a major inbuilt flaw insofar as their hull is made of magnesium armour which is, and does, burn fiercely when hit by a shell.

Putting the first last, as it were, each major section of the book has an initial explanatory page, and the Introduction to the book as a whole has, without doubt, the most compelling text I have read in quite some time. The reader is given the 'Form of Service' as it affects the average Warsaw Pact Soldier; his general training schedule together with morale and discipline procedures are also examined as well as general organisation and tactics. All this in 160 well laid-out and clearly printed large pages which also contain excellent illustrations of every important item covered in the text. In closing, I emphatically state that this book should be required reading for all students of Warsaw Pact military activities as well as those followers of arms developments.

Page Thirteen



One of the earliest ship plans in the world, complete with the designer's calculations in an Elizabethan hand. From a work known as "Fragments of Ancient English Shipwrighty" which once belonged to Samuel Pepys, it is usually dated to 1586 and provides a rare illustration of the types of ship which defeated the Spanish Armada. (From "Sailing Ships of War"). (Photo — Conway Maritime Press)



The elaborately carved and gilded stern of a model of the PRINCE of 1670. One of the largest and most famous ships of her day, the PRINCE took an active part in many of the hard-fought battles of the Dutch Wars. (From "Sailing Ships of War" published by Conway Maritime Press) (Photo — Conway Maritime Press)

SAILING SHIPS OF WAR 1400-1860

BY DR FRANK HOWARD

Published by: Conway Maritime Press
Reviewed by: Ross Gillett

THIS book will certainly be well received by ship lovers and ship modellers alike, as it contains a wealth of information on practically all phases of ship construction of the period indicated. The writer has set out to put a first class text book on the market, and has well and truly succeeded.

Dr Howard describes the various types of ships that have been developed for war at sea, and gives examples of the methods of construction, the armament carried and details of spars and rigging. He illustrates each section with a combination of old prints and pen drawings. The net result is of course an excellent understanding of the subject. Some of the old prints are masterpieces.

Page Fourteen

and for this point alone the book will find a place in the library shelf of the general non-fiction reader.

Through the various chapters of "Sailing Ships of War", the reader is apt to ponder on the fact that whilst these old wind powered fighting ships were usually required to be built with utmost speed, such a lot of time was spent in producing the ornate carvings on the stern castles of ships which were probably expected to be heavily damaged by the round shot fired at them by equally beautifully decorated ships.

Most of the illustrations are from old prints, but a few photographs do appear of preserved old timers, including HMS VICTORY and USS CONSTITUTION. There are a number of detail photographs of ship models and the quality of the photography in this case is first class.

"Sailing Ships of War 1400-1860" is a well produced work, and it is one which I

THE NAVY

personally feel will be used as a standard text book. Conway always put out a good book and this one is no exception to the high quality to which we have become accustomed.

MAN O' WAR I & II

BY: ALAN RAVEN & JOHN ROBERT
Published by: RSV Publications Inc
Price: \$10.75 each
Reviewed by: "Gayundah"

THE "Man O' War" series was first released in Australia during 1979. Each book is devoted to a famous class of warship from the Second World War period, emphasizing new data and photographs. Up to now five books have been released:

No 1 "County Class Cruisers"

- No 2 "V & W Class Destroyers"
- No 3 "NELSON and RODNEY"
- No 4 "Hunt Class Escort Destroyers"
- No 5 "Fiji Class Cruisers"

The first pair are the subject of this review.

No. 1, "County Class Cruisers" is a comprehensive monograph of the three groups which carried the title of "County". The first sub-group, Kent class, numbered seven cruisers, including HMA Ships AUSTRALIA and CANBERRA; the following London class of four ships included SHROPSHIRE and the last Dorsetshire class numbered

May, June, July, 1980

only two ships. The book begins with a description of the three types, including statistical legends, and follows on with armament, aircraft, machinery, performance and modification details. The latter is quite extensive, listing all the cruisers and subsequent war modifications. The summary of war service is just that, a summary, and no attempt has been made to detail complete careers.

A fine centre-spread by John Roberts shows HMS SUFFOLK wearing her 1942 camouflage scheme. Other ships are also depicted in a smaller scale. Without doubt

THE NAVY

the most pleasing aspect of "County Class Cruisers" is the number of excellent photographs used to illustrate the thirteen ships. AUSTRALIA, CANBERRA and SHROPSHIRE are depicted no less than sixteen times within the 58 pages.

Such the same can be said for "V & W Class Destroyers", save that the grade of paper used is slightly inferior and only one RAN ship, VENDETTA (as HMS) is given an amidships view sometime in the 1920's. The same format is employed in the book, with the usual good text accompanying. Poor cutting by the gullotine operators has deprived the reader of many bows or sterns, as the case may be. Several photographs taken during the original fitting out of the destroyers VETERAN and VENOMOUS are reproduced as full page presentations and exemplify the extreme simplicity of the bridge structures. The V and W classes underwent many alterations during their long careers and each of these is explained and fully illustrated. Altogether 130 photographs are reproduced in the book.

The authors of this new warship series are to be congratulated for the very readable and well designed publications they have produced.

FUTURE TITLES

New naval books on the horizon and to be reviewed in "The Navy" include:

"The Fleet Submarine in the US Navy" by J. Aiden - a comprehensive description of the development of US ocean-going submarines commissioned between 1939 and 1950. 272 pages, 400 illustrations

"Man O' War 3" by A. Raven & J. Roberts "NELSON and RODNEY" — Warship monograph describes the most unique British battleships built, \$10.75, 58 pages, 130 illustrations

"Fighting Ships of Australia New Zealand and Oceania" by G. Andrews — "Janes" type format describing the naval forces of Australia, New Zealand, New Guinea, Fiji, Tonga and the Solomon's; \$5.00, 80 pages, 100 illustrations.

"Aircraft Carriers of the US Navy" by S. Tarzibaschitsch — Comprehensive description of all fleet carriers between LANGLEY (CV1) and DWIGHT D. EISENHOWER (CVN60); 336 pages, 400 illustrations

"USS MONITOR — The Ship That Launched a Modern Navy" by Lieut. E. Miller USN — Complete record of the ship and attempts to locate and raise; \$25.00, 144 pages, 100 illustrations

Page Fifteen

Navy Week 1980 in Sydney

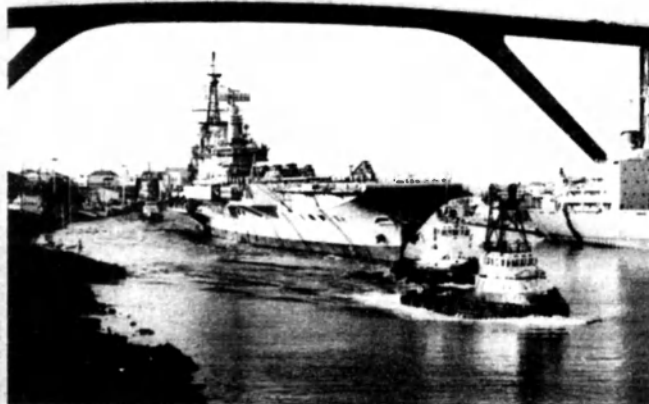
A week of activities, including ships open for inspection, the opening of several shore establishments and a museum featuring historical naval equipment, will highlight Navy Week, 1980, to be staged later this year.

Navy Week '80 will be held from Monday, 29th September, to Monday, 6th October, in the Sydney area, to include 4th October, the date in 1913 that units of the then infant Royal Australian Navy first entered Sydney Harbour.

It's planned to begin Navy Week with the opening of a museum featuring items of historical interest, some dating back to the beginning of the Navy. The museum, with items drawn from the Navy's repository in Sydney, will be established in the dockside shed at No 2 Woolloomooloo, near the entrance to Garden Island Naval Base.

Throughout Navy Week there will be displays by the Naval Support Command Band and physical training instructors in the city, as well as other special activities. The week will end with a three-day period over the holiday weekend, 4th-6th October, during which ships will be open for inspection at Garden Island.

Also during the weekend four shore establishments will be open — HMAS PENGUIN and HMAS WATSON in Sydney, HMAS NIRIMBA at Quakers Hill west of Sydney and the Naval College, HMAS CRESWELL, at Jervis Bay.



HMS HERMES. (Photo — Royal Navy)

HMS HERMES

The accompanying photograph shows the Royal Navy's Aircraft Carrier, HMS HERMES, passing beneath the Queen Juliana Bridge at Willemstad, Curacao, on 1st February, 1980, at the commencement of a five-day visit. The ship has recently been deployed to the Caribbean and Gulf of Mexico for training exercises.



HMAS BOMBARD entering Sydney Harbour during Anchorman '80. (Photo — Navy Public Relations)

ANCHORMAN '80

Updating nursery rhymes is not what the Royal Australian Naval Reserve is about — but it is what they have done. Instead of the butcher, the baker and the candle-stick maker, you'll find the food technologist, the chef and the industrial chemist.

And, instead of a wooden tub you'll find a 149 tonne, 32.6 metre, Attack-class patrol boat. In the case of Anchorman '80, four of them, HMA Ships ATTACK, ADVANCE, BOMBARD and BUCCANEER.

The purpose of Anchorman was to work up RANR patrol boat crews, diving teams and forward and base support staff in a realistic multi-ship operation. This year, Anchorman '80 had Reservists from all Port Divisions participating, including several List One Officers from the Mercantile Marine.

The patrol boats exercised along the coast between Sydney and Moreton Bay, during which OOWMAN's, live firings and ships internal drills tested the mettle of the Reservists whose only respite from a tiring exercise was a brief visit to Brisbane. The scheduled port visit to Newcastle was cancelled because of the industrial problems at the time.

The Officer in Tactical Command was LCDR Tony Whybrow, from the Sydney Port Division. "We wanted," he said, "to make Anchorman '80 as realistic as possible, so, as in any operational patrol, we kept the boats at sea for as long as practicable."

But, like any training exercise, things go wrong. Radios fail, gyros topple and engines malfunction. The Commanding Officer of HMAS ATTACK, Leut Peter

Lyons said, "You expect things to go wrong in a training exercise like this and, although we'd prefer they didn't, it at least shows that Reservists can handle the problems. My crew, mostly from Melbourne, think it's been a pretty good exercise, even though a tough one at times."

The Officer scheduling the exercise was the Fleet Commander, Rear Admiral D. W. Leach and Officer conducting the exercise was COMAUSMINPAB, Commander Ted Keane, RAN.

At the conclusion of Anchorman '80 Commander Keane said, "They came back from a hard two-week exercise with their eyeballs hanging out and you knew it had been hard for them. But they overcame the problems and there was a noticeable improvement in their performance towards the end of the exercise."

The following signal was received from COMAUSFLT on Exercise Anchorman '80: "Anchorman '80 has been a success and all participants may return to their respective Port Divisions with a feeling of satisfaction in a job well done. Despite some nasty weather during the early stages, the enthusiasm and professionalism displayed is a credit to



A Sea King anti-submarine helicopter, one of types of aircraft on display at the recent Navy Air Day. (Photo — Navy Public Relations)

all, and a high standard has been set for next year. Bravo Zulu."

FLEET AIR ARM ON SHOW

The Navy's Fleet Air arm went on show on Sunday, 4th May, when Navy Air Day 80 was staged at the Naval Air Station, HMAS ALBATROSS, at Nowra, on the New South Wales south coast.

A flying display, highlight of the Air Day, featured all types of fixed wing and rotary wing aircraft, operated by the Fleet Air arm and got under-way at 1400 for 1½ hours. Aircraft taking part included Skyhawk jet fighter-bombers and Grumman anti-submarine Tracker air-

craft, Macchi jets as well as Sea King, Iroquois, Wessex and Bell 206 helicopters.

Displays included Naval Police guard dogs and their handlers in action, clearance divers at work, a display by the Illawarra model Aero Club, solo aerobatics by a Mustang aircraft, gliding by the RAN Gliding Association, sky diving by the Army's Red Berets and a fire fighting display.

Navy Air Day '80 is the first Air Show to be staged by the Fleet Air Arm since the Air Day which was held in 1977 during the Queen's Silver Jubilee celebrations in Australia.



White Ensign is lowered for the last time (25th February, 1980), on HMAS DIAMANTINA, bringing to a close 35 years' service with the Royal Australian Navy. (Photo — Navy Public Relations)



DIAMANTINA leaves Garden Island — destination Athol Bight — where she will be held pending disposal through the Department of Administrative Services. (Photo — Navy Public Relations)



HMS LONDONFERRY as converted to electronic trials ship, sailing Portsmouth, 18th February, 1980. (Photo — J. Goss)



One of the Royal Navy's Type 21 frigates, HMS AMAZON, seen in the sea of Marmara, March 1980. In the background is the liner QE2. (Photo — Royal Navy)

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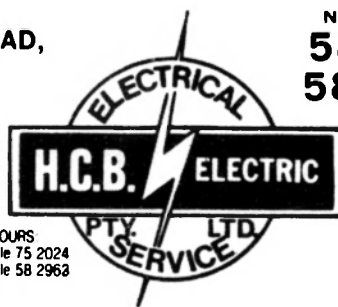
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T. S. "MERSEY"

One of six units in Tasmania "MERSEY" is situated at Devonport, its HQ's being South of Victoria Bridge on the eastern bank of the Mersey River.



T. S. MERSEY's motor cutter and 14 foot dinghy. In the background can be seen the unit headquarters. (Photo — T. S. MERSEY).

"Mersey" in its early years, like many other units, found itself battling for HQ's and staff. Devonport Rotary Club formed a branch of the Navy League in 1960, which in turn encouraged the formation of a Sea Cadet Unit in 1961. The building of a HQ's commenced in 1962 but lapsed at the framework stage for several years, due to finance. Meanwhile, a succession of Commanding Officers took the unit from the Yacht Club to the Army Drill Hall and on to the Devonport Ship Yards.

In early 1967, the local Navy League began an extensive fund raising campaign and due to the efforts of many people, including the local Naval Association, the present Headquarters were completed sufficiently for instruction in 1968. The unit was then under the command of LCDR A. H. Ley, MVO, RANVR. On the 4th July, 1970, Mrs J. M. Robb formerly opened and named the HQ's: T. S. MERSEY. At the same time the State Colour was presented to Mersey for the first time. Later that year Mersey was inspected by Cmdr B. L. Cleary, RAN, the Director of Naval Reserves and Cadets for the Australian Efficiency Trophy but was unsuccessful.

In 1972, Lcdr Ley resigned and command of the unit passed to Lieutenant M. R. Ashton. During the period of his command, the unit acquired a 25 foot Motor Cutter, 27 foot Motor Whaler and an 18 foot Army Assault Boat all from

Administrative Services disposals. Conditions of all three boats was poor, but with many hours work, all three are now in excellent condition and regarded as first class training aids. In 1976, Lieutenant Ashton was posted to

Divisional Staff and Lieutenant (Cadets) D. A. Andrews then First Lieutenant assumed command.

The latter part of the seventies saw the introduction of weekend training camps, a very popular move with cadets and in September, 1978, a nine day camp was held. This was so successful that it was repeated in September, 1979.

1978 was a year of achievement for "Mersey". A grant of \$1,500.00 for the purchase of radio equipment was received from the Queen Elizabeth II Jubilee Fund. The Prince of Wales Trophy was also bestowed upon the unit, for the project which most met the guidelines of the trust. Thanks to this award, "Mersey" has its own base station VK7DZ on 27.880 and 27.890 and all boats are equipped with radio. This enables the craft to tie in with the local air sea rescue group. To date, Mersey has taken part in two marine exercises.

Mersey received the Andrews Trophy as most efficient unit in Tasmania for 1978, from the Governor Sir Stanley Burburry at the State ACT at Fort Direction in January, 1979.

Devonport has its share of visits from visiting warships and cadets from "Mersey" visit these ships using unit boats for the journey down river to port area and alongside.

Authorised complement of Mersey is 45 and at the moment strength stands at 47. Accommodation at our Headquarters can be arranged for any cadet unit contemplating a visit to the best state in Australia. Address for any enquiries is 3 Harold Street, Devonport, Tas 7310. Phone: (004) 24 1196.



Unit motor whaler in the Mersey River, Devonport. (Photo — T. S. MERSEY).

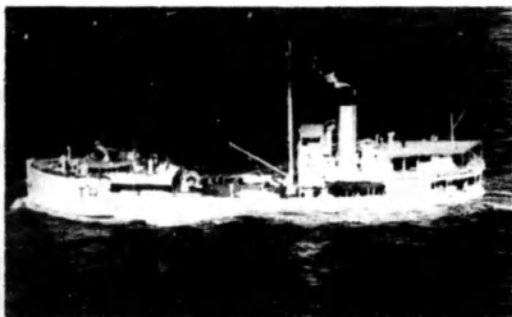
Warship pictorial

Auxiliary minesweepers of World War II

(All photographs courtesy Historical Studies
Section, Department of Defence.)



HMAS ALFIE CAM with her single 12 pdr gun elevated to maximum position. Built originally as the fishing trawler **ASAMA**, **ALFIE CAM** was requisitioned for service with the **RAN** and commissioned in July, 1940. She returned to trawling in July, 1944 and was eventually scrapped in the mid fifties after running aground in Twofold Bay on 10th July, 1953.



HMAS TERKA, 30th April, 1941, ten days out from Sydney en-route to Darwin for sweeping operations with **HMAS TOLGA**. During her career with the **RAN**, **TERKA** served as an auxiliary minesweeper, store carrier and finally water carrier. In January, 1944, she transferred to New Guinea waters, based on Milne Bay. On the night of 26th/27th March, 1944, she was lying in Benner Harbour, Madang, when, after coaling and without warning, she lurched to starboard. The engine and boiler rooms filled with water, but after taking a heavy list she gradually righted herself to an even keel and then sank by the stern in ten fathoms. **TERKA** saw no further naval service.



A fine pre-war view of the 402 gross ton coaster **BERMAGUL**. This vessel was requisitioned for naval service on 30th October, 1939, and underwent fitting out to an auxiliary minesweeper in Melbourne. She paid off at Sydney on 31st March, 1943, to be converted to a controlled minefield tender and in her new role served in the Brisbane, Sydney and Port Stephens areas. **BERMAGUL** was returned to her owners, Illawarra & South Coast Steam Navigation Co Ltd, on 22nd July, 1946. During 1969 she was converted to a dredge and in 1980 was laid up on the Brisbane River due to lack of work.



HMAS BERYL II. Built 1914 by Cochrane & Sons Ltd, Selby, Yorkshire, England, for Cam & Sons Pty Ltd, Sydney. Displacement 248 tons gross; length 121½ feet; beam 22½ feet; draught 12-1/6 feet; speed 9 knots; armament 1 x 12 pdr Q.F. HA/LA, 1 x Oerlikon 20mm A/A, machine guns; complement 2 officers and 16 ratings. **BERYL II** was requisitioned on 7th September, 1939, and commissioned on 9th October, 1939. Converted to boom gate vessel, December, 1943. Paid Off 13th December, 1945, and returned to owners 24th May, 1946.



The wooden single screw steamer, alias auxiliary minesweeper, **HMAS PATERSON**, lies alongside her berth with an uncompleted AMS (corvette) in the background.



Starboard broadside view **HMAS MARY CAM**. Built originally as the trawler **JOHN FISSER** and later renamed **JOULE**, **MARY CAM** was one of eight vessels requisitioned from Cam & Sons Pty Ltd of Sydney during the Second World War. Crewed by twenty officers and men she operated between May, 1942, and April, 1946, from Adelaide and Fremantle (as Boom Defence vessel and again as minesweeper).



HMAS WARRAWEE was requisitioned from Coast Steamships on 12th May, 1941, and commissioned at Melbourne on 24th September, 1941. The vessel served as a unit of Minesweeping Group 63, based at Port Adelaide. She was armed with one 12 pdr, two Oerlikons and machine guns and two depth charge chutes. **WARRAWEE** paid off on 24th September, 1945.



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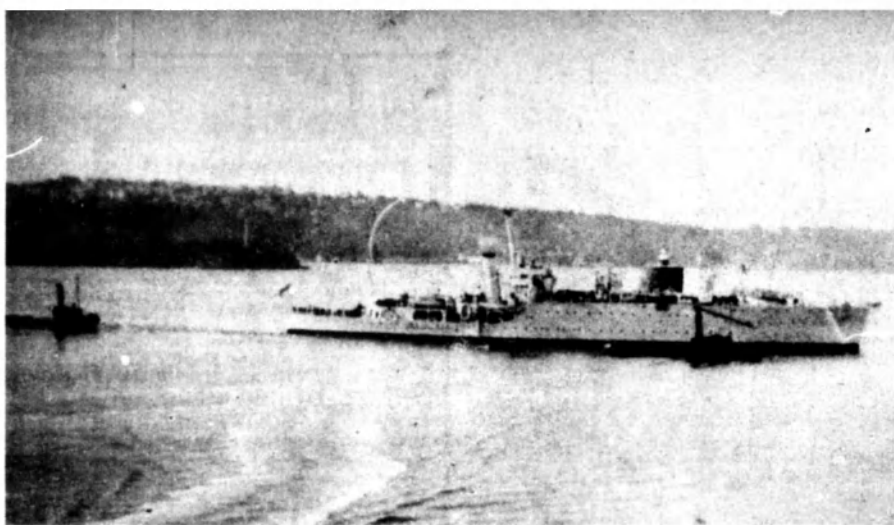
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With pendant flying ALBATROSS sails from Sydney Harbour on 11th July, 1938. (Photo — J. Sanderson)

The departure of HMAS Albatross in 1938

by David Diment

THE seaplane carrier HMAS Albatross was ordered by the Australian Government in 1924. She was laid down at Cockatoo Island in April 1926, launched in February, 1928 and completed in December at a cost of \$1.2 million.

The ordering of a seaplane carrier would perhaps seem to be a retrograde step in view of the Royal Navy's continuing refinement of the "true" flush-decked aircraft carrier idea — starting with *Furious*, through *Argus* and *Eagle* to *Hermes* — the first purpose designed carrier.

However, despite the fact that *Albatross* was a one-off design it must be remembered that the designs of aircraft carriers were still in the formative stage.

The design of *Albatross* was dictated by money and manpower factor and, in the event, proved to be of considerable value if not in the seaplane carrier role. At the operations level, *Albatross* gave invaluable service as a seaplane carrier firstly and later, after 1942, as a repair ship in

the South Atlantic and at Normandy on D-Day.

Despite the fact that *Albatross* was shelled and torpedoed she survived to have a post-war career as an emigrant ship — A good reference for Australian design and construction.

Albatross made a speed of 22.5 knots in trials but lack of speed was considered her greatest handicap as a useful warship. After only four years of service, *Albatross* was paid off into reserve in April, 1933 because of the economic restraints of the Depression.

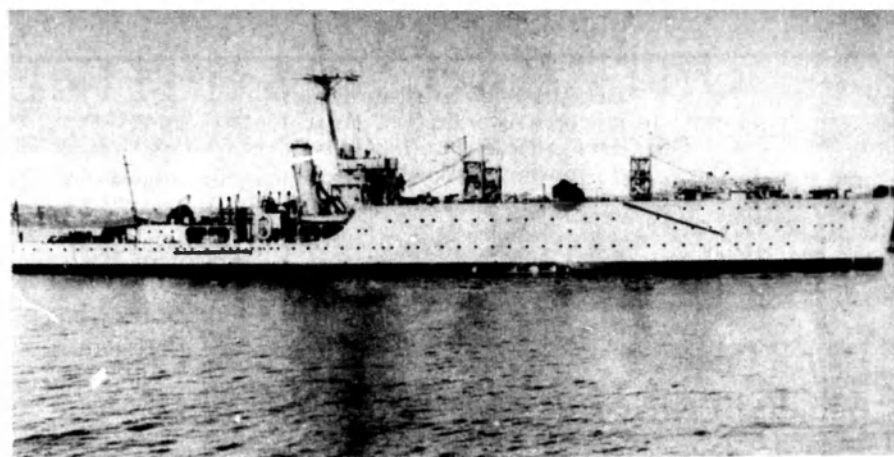
She stayed in 'C' class reserve until July, 1938 when, flying a 400 foot paying-off pendant, *Albatross* sailed out of Sydney Harbour.

Albatross was off to England in part-payment for the cruiser *Hobart*. Shortly

after 2 o'clock on the 11th of July, 1938 she pulled away from Garden Island with the crews of the *Sydney*, *Canberra*, *Yarra* and *Swan* giving a cheering farewell to the departing vessel.

The crew of *HMAS Penguin* (ex-*Platypus*) — the base ship at Garden Island formed in line on the northern corner of Garden Island to cheer while the band from *HMAS Sydney* played.

Albatross circled Fort Denison and saluted the farewelling ships. Seaplanes from the RAAF accompanied the seaplane carrier down harbour, scudding along the water. The *Albatross* carried two Royal Navy ratings who had deserted from *HMS Dorsetshire* while their ship was visiting Sydney earlier in the year. These two were dropped at Singapore en route to England.



HMAS ALBATROSS. (Photo — M. MacDonald)

The crew of *Albatross* brought back *HMAS Hobart* (ex-*HMS Apollo*) to Australia in late 1938. During the worst years of the Depression, in an effort to keep her in service, *Albatross* had to make do with 350 men. *Hobart*, on the way back to Australia, also presumably, had to "make

do" with 200 men less than her normal complement of 350 men.

Although only in the Royal Australian Navy for a few years, *Albatross* should be given great credit for actually starting the idea of a naval air arm in Australia. This pioneering role is commemorated in the

Fleet Air Arm shore establishment HMAS Albatross at Nowra.

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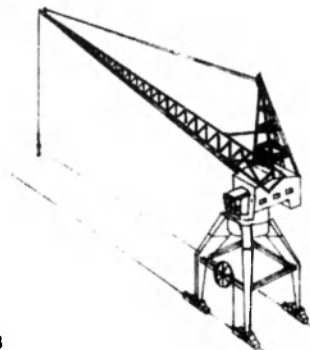
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THE NAVY

May, June, July, 1980

UNITED & UNDAUNTED

by: ROSS GILLET

The exploits of the Royal Australian Navy's Clearance Diving Teams are well known.

The branch celebrated its silver anniversary in 1976, and to mark the event a history of the service was produced by the Naval Historical Society of Australia. Since the end of World War II, the clearance divers have operated from eight diving tenders.

As well as these boats, the branch has used a torpedo recovery vessel No. 254, (now No. 802), a survey motor boat and a work boat. The latter, bearing the pendant No. AWB 09, was fitted to carry divers from 1964 until she was wrecked after sinking in a storm at Hunter Bay in May, 1974. Divers have also operated from other fleet units, including the Oberon class submarines, but for the main have employed the following craft as their primary base of operations.



The diving tender OTTER, late 1950's. (Photo — R. Hart)

OTTER AND SEAL

Both of these diving tenders were constructed as fishing trawlers during World War II. They each displaced 45 tons gross. OTTER was purchased from Mr L. Wolf of Ulladulla, New South Wales, and entered service with the RAN in 1942. She was later attached to HMAS RUSHCUTTER from 1948 to 1968, after which she returned to the fishing trade. SEAL was also attached to RUSHCUTTER and was in service from 1948 to 1968 when she too was sold at auction.

PORPOISE

The only all concrete vessel to serve in the Royal Australian Navy was PORPOISE. Originally built as an ammunition lighter, she was modified during the mid 50s for use as a diving barge, and was anchored off Clarke Island in Sydney Harbour.

She was acquired by the clearance divers in 1954, and with a training classroom added, entered service on 24th March, 1955. Four days later the first 18 candidates for Clearance Diver 3rd Class were despatched to PORPOISE.

Following these duties PORPOISE was taken to HMAS WATERHEN as a stores lighter and subsequently Athol Bight, where she remains to the present day.

TORTOISE AND TURTLE

Designed as harbour and island service boats, TORTOISE and TURTLE were built during 1945 by Slazengers (Australia) Pty Ltd, on the Cooks River, Marrickville, New South Wales.

Following World War II, both vessels were in service as ammunition carriers with the Royal Australian Air Force. After transferring to naval control in 1964, the boats were based at RUSHCUTTER and HMAS PENGUIN. TORTOISE and TURTLE displaced 54 tons each and measured 56 feet long by 16 feet across the beam. Top speed was eight knots and radius of service, 1200 miles. Between eight and 10 men comprised the normal crew. As cargo boats they could carry 2 1/4 tons.

TORTOISE was sold for \$10,000 on 26th April, 1974, for use as a salvage boat, while TURTLE, sold on the same day,



PORPOISE, 1974. The large ship behind the tender is the aircraft carrier SYDNEY. PORPOISE remains laid up in Athol Bight, in 1980. (Photo — J. Mortimer)

May, June, July, 1980

THE NAVY

Page Twenty-Five

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TORTOISE, 3rd November, 1976, after her sale to a private venture. At this time she was moored in the Georges River, south of Sydney. (Photo — R. Gillett)

fetched \$14,160. The latter was intended to be used as a cargo vessel, but was consequently converted to a milk carrier to operate in the Gulf of Carpentaria.

PORPOISE AND SEAL

Purchased from the Royal Navy, where they were employed as the inshore minesweepers NEASHAM and WINTRINGHAM, PORPOISE and SEAL were deck cargo onboard the ENGLISH STAR on 29th July, 1968, while SEAL arrived in March, 1967, onboard the GLADSTONE STAR. SEAL underwent conversion to the diving tender role and entered service in 1968, her prime purpose being training in the Port Stephens and Pittwater regions. PORPOISE was not altered immediately and was laid up until 1972. She was then converted at the Balmain works of Storey and Keers, being handed over on 13th June, 1973.

A third boat, POPHAM was also acquired, but she was neither renamed nor altered to the diving tender configuration.

PORPOISE and SEAL are currently based in Sydney at the small ship's base, HMAS WATERHEN, and also at HMAS PENGUIN. In addition, they are operated by the naval reserves



SEAL. (Photo — B. J. Browne)



The ex GPV 962 and diving tender WALRUS undergoes a refit, 1959. (Photo — RAN)

and regularly undertake cruises along the coast, including to Broken Bay and Port Stephens.

Both boats were built by J. Sarmuel White and Company, PORPOISE being launched on 14th March, 1956, and SEAL on 24th May, 1955. Each tender displaces 159 tons full load and measures length 106 feet, beam 22 feet and draught 5 1/4 feet. 14 divers can be carried, as well as a seven man crew. Top speed is 14 knots with a range of 2000 miles at nine knots.

WALRUS

Formerly the General Purpose Vessel (GPV) No. 962, WALRUS was brought fourth from reserve at Geelong, Victoria, and used as a diving tender attached to RUSHCUTTER between the years 1948 and 1969. She displaced 77 tons and was capable of a maximum speed of 10 knots. Her principle dimensions were, length 75 feet, beam 18 feet and draught 6 feet. During her career as a diving tender, WALRUS operated between Port Stephens and Jervis Bay, as well as cruises further north along the coast, including one to Brisbane. WALRUS was disposed of by sale in 1971.

TRV 254 (Renumbered 802)

Built at the Williamstown Dockyard, Torpedo Recovery Vessel No. 254 was launched on 20th May, 1970. She began service from Garden Island in September, and for part of her career was operated as a diving tender. TRV 802 displaces 90 tons standard and is manned by about 10 men. She is 88 feet long, with a beam of 20-5/6 feet. Top speed is 13 knots. TRV 802 is no longer used as a diving tender and now operates with her sister (No. 803) on Sydney Harbour.

Of the diving tenders mentioned, only PORPOISE and SEAL are now in service. No replacement boats have been ordered, but it is possible that one or two of the Attack class patrol boats may be altered to diving tenders when the new Fremantle class patrol craft become available. The present pair are limited in their role, having been converted, not built, for the purpose. They suffer from age, (about 23 years each), and are fitted with an open bridge. Neither PORPOISE nor SEAL carry any armament.

Diving teams working from PENGUIN have also used a white-hulled Survey Motor Boat, a spare craft for HMAS MORESBY. The boat is usually confined to harbour operations, but if need be is able to operate alone for several days.

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VICTORIA League Members Visit HMAS CERBERUS

On Friday, 1st February, the Navy League was honoured when, at the invitation of the Commanding Officer of HMAS CERBERUS, (Capt H. J. P. Adams, RAN), the Federal President of the League (Cdr F. G. Evans, MBE, VRD, RANR) reviewed the Graduation Parade of Recruits.

Also, at the invitation of Capt. Adams, 21 members of the Victorian Division witnessed the parade and afterwards were the guests of the establishment.

All were warmly welcomed by the Captain and given an illustrated briefing on the functions carried out at CERBERUS. Following an excellent luncheon in the Wardroom, members were then taken by bus on a guided tour of the Depot where, at the various schools, an officer showed the party around.

TASMANIA

On 28th June the Launceston Branch will be holding a crav night at the Anzac Hostel. T.S. TAMAR will also hold an Open Day on 18th May, staging events such as relays, tug-of-war, etc. followed by afternoon tea.

WESTERN AUSTRALIA

The WA 150th birthday emblem swans which were worn on either side of DIAMANTINA's funnel during 1979 have been returned to the west. Although it now seems certain that "TINA" will rest in Queensland maritime museum, Western Australia will retain several mementos, as the frigate spent all her active peacetime career based in the region.

The WA Executive of the Navy League wrote to DIAMANTINA's last skipper, LCDR. Bob Burns, RAN, GM, and asked if the swans could be returned to the west for preservation. This request was granted and one of the swans will be mounted in a naval display being organised jointly by the Naval Association and the Navy League in the new Fremantle Maritime Museum situated in Cliff Street. The second swan has been handed over to HMAS STIRLING awaiting a decision on its final resting place. Plans are already underway to mount a propeller from HMAS DIAMANTINA outside the administration block at STIRLING.

DIAMANTINA arrived in Western Australian in 1959 and departed in October, 1979, for the last time. She was affectionately known as the "Grey Ghost of the west coast". Her original black swans are now proudly worn by the patrol boat HMAS ACUTE which is STIRLING based. This diminutive little warrior is known as the "Mini Grey Ghost of the west coast".

Cadets WESTERN AUSTRALIA

It was a proud moment for the Naval Reserve Cadets of T.S. VANCOUVER when they marched through the town of Albany on Saturday, 15th March. T.S. VANCOUVER was exercising the right granted to them last year when they were given the freedom of the town. This is only the second time this honour has been extended to a reserve cadet unit.

It was a day of festivities in Albany and was climaxed by a parade and garden party. The T.S. VANCOUVER premises are leased from the Navy League and they have received a large amount of money in sponsorship over the past five years.

SOUTH AUSTRALIA

Last month the division had a very successful function at "The Patch" restaurant in Adelaide, when about 70 members and friends attended for Sunday lunch.

On Sunday, 4th May, it is planned to hold a gathering at "Invercald", the home of Hamish Findlay, at Macclesfield in the Adelaide Hills. A BBQ lunch will be provided and a good roll up is expected.

The next function after May will be in the form of a dinner at Stoneyfell Winery on Friday, 22nd August, 1980, and the division trusts all members and friends will keep this night free.

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AN INVITATION

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To the majority of The Navy's readers — the non-members — we in the Navy League extend an invitation to join us in actively promoting the wellbeing of our country. You will be joining a sizeable group of citizens, a mix of young and not-so-young people of high qualified professional and imaginative "amateurs", all keen to contribute in one way or another to the maritime strength of Australia — essential to the survival of our country in these turbulent times.

Don't just read about the activities of the Navy League and be a spectator of events — join us and contribute your knowledge, experience or simply enthusiasm, and be a "part" yourself.

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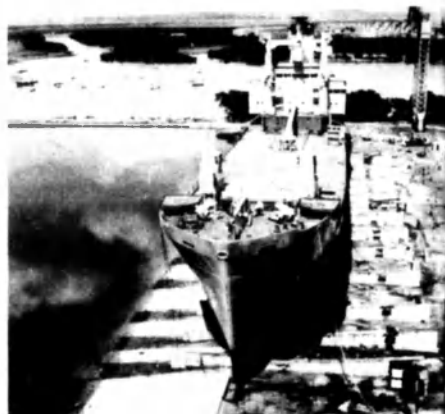
TOBRUK
1ST MARCH, 1980



TOBRUK is christened by Lady Cowen as the ceremonial bottle of champagne breaks on the bow of the RAN's new amphibious warfare ship. (Photo — Navy Public Relations)



The moment of impact as TOBRUK touches water for the first time. (Photo — R. Gillett)



TOBRUK slides across the slipway — an eight second journey. (Photo — Navy Public Relations)



The resultant tidal wave created by the launching spreads across the man-made waterway as TOBRUK heels to port. (Photo — Navy Public Relations)



Another view of the ship, taken at approximately the same time as the previous photograph. (Photo — R. Gillett)



A stern view of the new ship. Note the vehicle ramp. (Photo — Navy Public Relations)



Safely afloat and contained by steel cables attached to the shore, TOBRUK presents an impressive sight. (Photo — Navy Public Relations)

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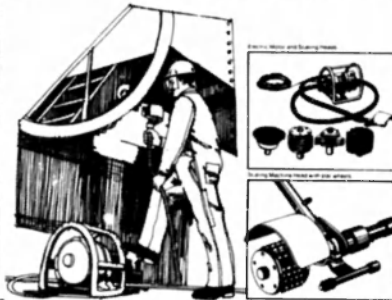
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K XII — the true story By MAI STEPHENS

K XII was one of three Dutch submarines built during 1924 for service in the Netherlands East Indies. After the outbreak of the Pacific War, in 1941, she and other vessels, made for Australia and safety.



K XII aground at Fairlight in Sydney Harbour. (Photo — M. Stephens)

In recent months reports of the discovery of the third Japanese midget submarine in Sydney Harbour led to reports in the press that the submarine found was not the midget, but in fact the K XII, which was still lying below the harbour waters.

Other reports suggested the submarine to be K IX. In the event, the Japanese midget submarine sighting proved to be an April Fools Day promotion, but to set the record straight, the following is the true story of K XII.

The other Dutch submarine, K IX commissioned into the RAN and after the war was wrecked off Seal Rocks on the New South Wales coast in June, 1946, whilst being towed to the Netherlands East Indies.

The post-war story of the Dutch submarine K XII began in 1945, when the boat was sold to private interests, calling themselves "The Sub Syndicate".

Following the sale K XII was moored in Lavender Bay, alongside Luna Park, from 1st September, where she served in the dual role of providing DC power to the amusement centre and was also open for public inspection as a Park attraction. The following year negotiations were held with the Port Jackson and Manly Steamship Co Ltd for the K XII to be moored at the promenade, Manly, and exhibited to the general public.

Mooring dolphins were installed at Manly in a manner so as to allow the submarine to berth head-on to the promenade, and after some minor repairs were effected to the submarine she was moved to Manly in October, 1946.

However, the lack of any protection from heavy weather that this position offered was to bring the K XII to an untimely end. On the weekend of 4/5th June, 1949, during a gale, the submarine broke loose from its moorings and damaged the wharf.

It was decided, that in order to prevent further damage to the wharf and the

vessel itself, the submarine would be taken to Neutral Bay to quieter waters.

The Waratah Company's tug WARANG took K XII in tow at 1.30 pm on 5th June, with four employees from the ferry company aboard the submarine. However, when battling into the heavy seas at the entrance to North Harbour, the tow-rope snapped. A second rope was attached, but this parted almost immediately and the K XII drifted fast towards the rocks at Fairlight.

"One man was washed overboard and three others were trapped on a submarine which was driven aground at Fairlight Beach, Manly, in the heavy swell yesterday." This the "Sydney Morning Herald" reported on Monday 6th June, 1949.

An attempt to refloat the boat was made by the Waratah Tug and Salvage Co on 10th June, 1949, however, this proved fruitless. The Syndicate enquired of a number of professional divers and tender-ere called in the press for either purchase or removal. Diver Helling's contracted for the removal, but after five unsuccessful attempts was forced to withdraw, owing to financial embarrassment.

An offer to purchase was received from Melbourne, however, this fell through when the purchaser failed to raise the necessary finance. Following further advertisements in the press the Syndicate was approached by a Mr A. Stephens, who subsequently agreed to purchase K XII and release the Syndicate from the responsibility of removing her from Fairlight Beach.



Another view of the former Dutch submarine at Fairlight. The exposed position of the vessel to the open sea is apparent. (Photo — M. Stephens)



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K XII in Berrys Bay. (Photo — M. Stephens)

The task was then set to by Mr Stephens and the other members of his small syndicate. A flying fox was erected from the shore using the elevated barrel of the submarine's 3.5 inch gun. In the accommodation area forward of the conning tower the floor was taken up and the heavy batteries below were lifted out and landed ashore. The vessel was hard aground on the rocks amidships and a number of electric motors were removed in an endeavour to lighten the vessel prior to refloating.

Hand operated "Trehwella" winches were set up by anchoring them to 100mm steel pins embedded in the rock situated on the south-eastern shore from the K XII. These winches were rigged to similarly anchored heavy pulley systems (large scale "block and tackle") which in turn were connected to heavy hauling wires. Using this tackle K XII was inched forward little by little over several weekends and not without a number of tackle breakages.

All efforts were directed towards floating the vessel off on the Christmas/New Year high tides of 1950/1951 and at 0600 hours on 7th January, 1951, following the pumping of air into her ballast tanks, K XII floated free of the reef and assumed a lesser degree of list than she

had whilst grounded. The tug BORAY then took her in tow up harbour, below the Sydney Harbour Bridge, to Kerosene Bay, at the foot of Shirley Road.

At Kerosene Bay demolition work proceeded, with all non-ferrous components being removed from inside and sections of the superstructure cut away, leaving the hull like a large open canoe. Following stripping it was then necessary to beach the hull to cut it into sections. Therefore she was towed into the Parramatta River, just downstream from the Ryde road bridge at the foot of Osborne Avenue.

Here disaster struck when vandals managed to remove wooden plugs driven into openings in the hull where sea cocks and pipes etc had been removed. K XII sank with approximately 10 metres of the bow showing out of the water at low tide.

Attempts were made to lift the stern and swing the vessel broadside on to the beach, but these were unsuccessful, due, it is thought, to the terrific suction from the silt on the bed of the river.

The hull then had to be cut into segments and rolled inshore using the same tackle as was employed at Fairlight.

The keel section was immersed in the silt and could only be cut by explosives.

To pass wire ropes around the hull, holes were jettied underneath in the silt by a diver using a compressed air jet. After being winched ashore the hull pieces and the engines were cut into approximately five ton portions for road transport. Large lead ingots were found bolted length-wise along the keel and the sale of these helped in some way to reduce the deficit incurred as a result of the sinking at Ryde.

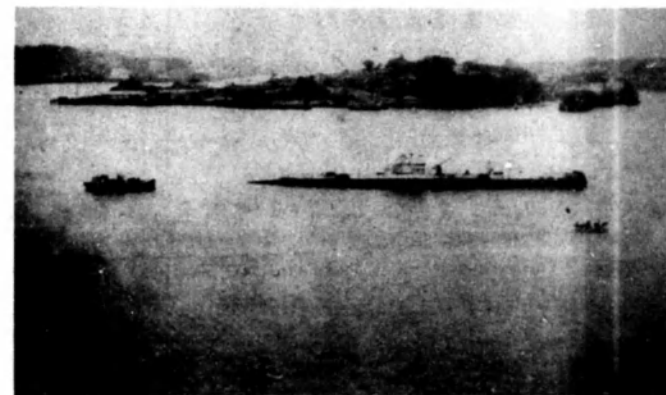
Demolition was completed in late 1961. It is understood that during World War II K XII sank at least three Japanese vessels and it was somewhat ironical that the major portion of her hull ended its days in a Japanese blast furnace after being shipped from Sydney as scrap metal.

Conclusion:

K IX — Wrecked 8th June, 1946 off Seal Rocks.

K XII — Broken up in Sydney 1949 to 1961.

Third Japanese Midget — ??



The submarine is towed past Goat Island en-route to Ryde on the Parramatta River. (Photo — M. Stephens)

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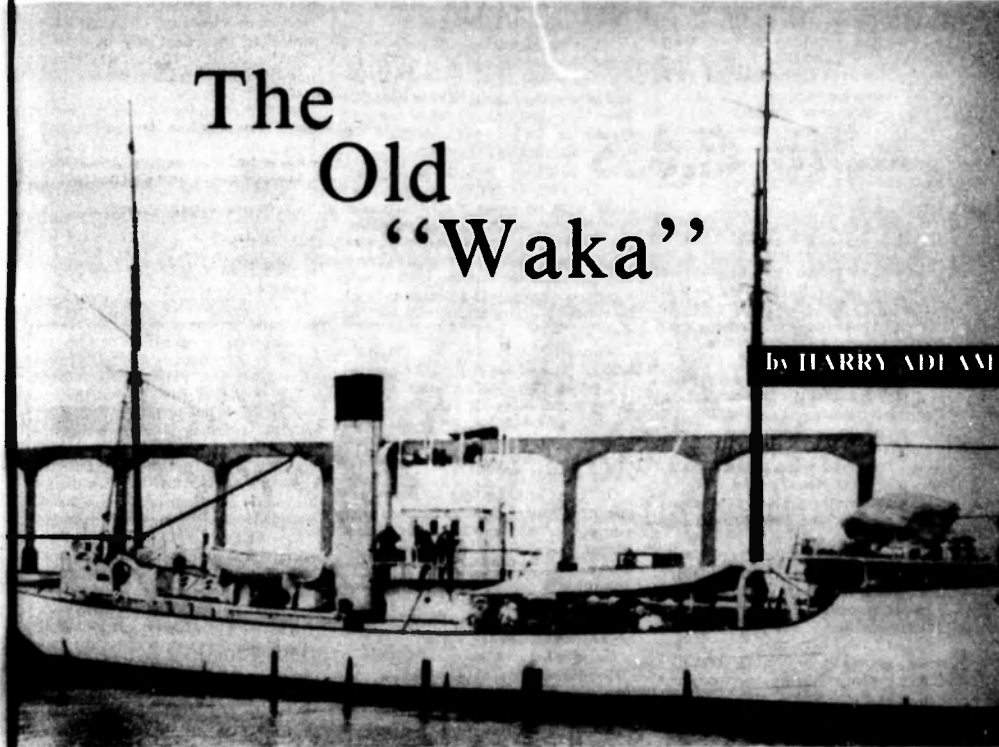
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The Old "Waka"

by HARRY ADLAM

WAKAKURA. (Photo — Royal New Zealand Navy)

In February, 1927 HM Trawler "WAKAKURA" arrived in Auckland to begin a long and useful career as a sea-going training ship for the New Zealand Division of the Royal Naval Volunteer Reserve. She was a small ship, but quite adequate for the duties required of her, and was only 10 years old.

Her delivery voyage was eventful to say the least. Machinery faults and sickness had taken their toll, and it was to take eight months to complete the voyage from the United Kingdom to New Zealand.

Her career was one to be proud of and it is interesting to note that she had at least six different owners at various times.

The vessel began life as HM Trawler "TR 1", a "Castle" class trawler built by the Port Arthur Shipbuilding Company in Canada, being a sister ship to the trawlers "GOOLGWA" and "DURRAWEEEN" commissioned by the RAN in WW2. The Canadian "Castle" type were very attractive ships, of conventional steam trawler appearance.

"WAKAKURA's" dimensions were an overall length of 134 feet, a beam of 23

feet six inches, a draught of 12 feet 9 inches, carried on a displacement of 275 tons. Her single screw was driven by a triple expansion engine of 480 ihp which gave her a speed of 10 knots. Her main armament was one 12 pounder 12 cwt low angle gun.

Commissioned in the Royal Navy on 17-10-1917, she served until paid off in August, 1919 and placed on the sale list. In 1920 she was purchased by a Captain Munro, who seems to have developed a business as a ship broker. She would have dropped completely out of sight had not the New Zealand Government taken a hand.

The New Zealand Division of the Royal Navy had been formed in 1921 and as an RNVR Division had been formed it was

advisable to acquire a training ship for them. After viewing some of the ships available it was decided that "TR 1" would be quite suitable. Given the new name of "WAKAKURA" the ship was commissioned on 9th April, 1926.

Re-armed with a four inch gun and ready for service the ship was taken over by a small runner crew to make the delivery voyage, for which she was under the command of Lieutenant R. A. MacDonald, RN, the torpedo officer of HMS "DUNEDIN", who also doubled up as the squadron torpedo officer. The New Zealand Division was a very small unit, and the wearing of "two hats" was quite common.

All was not beer and skittles on the way

out, but even so eight months was a very slow trip indeed. After an enforced stop over of one month in Port of Spain, Trinidad, "WAKAKURA" finally came through the Panama Canal on the last leg of her voyage home.

Her troubles were still not over, for in November, 1926 she reported herself in difficulties off Honolulu. The USS "PITTSBURG" was sent to her assistance, thereby commencing an association between New Zealand and the US Navy that was to become a full partnership during the Pacific campaign of WW2.

On arrival in Auckland the ship was given a much needed refit, and then sent on her new duties. In following the practice of sailors the world over, the ship was given a nick name, and from then on was usually referred to very affectionately as the old "Waka".

Carrying a small permanent complement, the little trawler steamed about the Dominion training the reserves from the various provinces, and many amusing incidents have been recorded during this period. We must remember that at this time the Royal New Zealand Navy had not been formed, and about fifty per cent of the crews of the New Zealand ships were Royal Navy on loan.

The RNVR men probably contributed the largest group of locally enlisted men in the division, and we can sympathise with them for the cramped quarters in their old training trawler. But like all true "rockies" the Kiwi's took it all in their stride and grew to love the old "Waka".

As regards the permanent complement, it appears that numbers were cut down to a bare minimum. The sole communications rating was a telegraphist, who looked after visuals as well. On one occasion when "WAKAKURA" was about to enter the harbour at Bluff the port signalman started to pound out a message by morse lamp at a furious speed.

He was an ex-naval signalman and probably wanted to show off. The telegraphist was called to the bridge, but he couldn't make heads or tails out of the rapid succession of dots and dashes. He

gave it up as a bad job, and the old "Waka" glided in to her berth.

When she came alongside she was met by an angry deputation of port officials, who demanded to know why "Waka" had ignored their signal NOT to enter harbour. They had ordered her to heave to outside as the bar was considered too shallow for the ship to pass over.

The skipper got over this in the usual naval manner. He ran the telegraphist in. Naval officers always seem to consider themselves as experts in visual signalling, but in this case the experts fell by the board. The skipper had a change of heart, and overcame the trouble by a simple exercise of sending all the permanent crew to visual signalling instructions "in the dogs".

When WW2 broke out "WAKAKURA" headed for Auckland to be put into full harness. She was given all sorts of important, if boring, jobs. One was to stream paravanes for merchant ships, quite an exacting task. P. V.'s must be well adjusted to ensure that they will run at the correct depth.

On one occasion the Gunner had assembled a batch of paravanes and after a session of trial and adjustments considered that the P.V.'s were ready for issue. He decided that all that was required now was a coat of paint, which could be done on the way back to harbour. He turned over the painting to an RNVR leading seaman, and then retired to his cabin for a well earned rest.

On re-appearing on deck to take a final look at his toys he almost lifted his safety valve. He was confronted with the sight of a pile of parts with paint flying in all directions. The RNVR laddie had taken them all to pieces so that he could paint every part of them. Very commendable, but this entailed carrying out the complete series again after the paint dried.

It is thought that the poor old Gunner coined that familiar phrase "I could just scream" at this time.

Carrying the pendant number T 00, HMS "WAKAKURA" served for the full period of the second world war. In Sep-

tember, 1941 the Royal New Zealand Navy came into being. "WAKAKURA" now bore the proud title of HMNZS "WAKAKURA", but to her crew she was still the old "Waka". She received of course another owner.

With the coming of peace, and the rapid demobilisation of New Zealand's forces, the Naval Board took stock of what ships they possessed and what personnel would be available to man them.

With the exception of "PHILOMEL" and "WAKAKURA" all the ships were of recent construction, either being built in the United Kingdom or New Zealand during the course of the war.

It was then decided to dispose of both the static training ship and the reserves training ship. In one stroke of a pen two very well loved ships were to be sent to the scrap heap. For "PHILOMEL" this was to be the end of the line, but the "old Waka" was to fare better.

In the immediate post-war years a new coastal shipping line was formed under the name of the Tasman Steamship Company. "WAKAKURA" was on the sale list and the new company decided that the old trawler would be a good buy. In 1947 "WAKAKURA" began her peaceful operations as the Tasman Company's one and only ship. It is pleasing to note that her name was retained by her new owners.

As a coastal freighter "WAKAKURA" carried on until the 1950s but by this time the old ship was too small for the trade. Larger ships were acquired, and the old "WAKAKURA" paid off. This time there was to be no reprieve. She went to her sixth and final owner, the ship breakers. After 40 years of faithful service the old "Waka" was finished.

So ended the story of a fine ship. Built for one world war, she was to serve in that one and the next. She had been built in Canada for Great Britain, and had trained New Zealand Seamen. She had carried out her duties in time of war, and in peacetime she had ended her career following those peaceful pursuits, and help to restore full peace conditions to the Dominion she served so well.

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