THE Navy

FEBRUARY-MARCH-APRIL, 1973

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THE NAVY

The magazine of the Navy League of Australia

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PLUS SUNDRY STORIES AND PHOTOGRAPHS

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POWER AT THE CENTRE IN TRANSFORMED DEFENCE STRUCTURE

(As plans for merging the Australian defence departments into the one Department of Defence appear to be nearing fruition, it was considered that readers may care to hear the United Kingdom story of defence rationalisation-unification, upon which it is rumoured that Australia's defence will be modelled.)

It is just ten years since Britain's then Defence Minister, Peter Thorneycroft, rose in the House of Commons to announce plans for the most radical reshaping of the country's defence administration this century.

Written exclusively for The Navy by Henry Stanhope, Defence Correspondent The Times, London

Mr Peter Thorneycroft. Born in 1909, he was educated at Eton and the Royal Military Academy at Woolwich. He was appointed Minister for Defence in July, 1962.

Three independent Service Ministries were to disappear, their Ministers retained but downgraded. Planning, intelligence and operational functions were to be unified in one building — historic names like the War Office and the Admiralty erased.

Readers of **The Times** newspaper were assured that the new, all embracing Ministry of Defence would be "on the pattern of the Pentagon". The existing Air Ministry building which, with its myriad windows, resembles a thick slab of currant cake, was to house the new monolith.

An attempt to start calling the place THE QUADRAGON never really caught on — which was perhaps a good thing.

SERVICE CO-OPERATION

Looking back, these changes now seem much less revolutionary. More surprising perhaps is the time it took Britain to appreciate the need for them.

Factors contributing to slow evolution rather than sudden metamorphosis included traditional Service reluctance to contemplate the winds of change until they were blowing so fiercely they could no longer be resisted. On the other hand, the plans did owe almost everything to the far-sightedness of the then Chief of the Defence Staff, Lord Mountbatten and the two generals, Lord Ismay and Sir Ian Jacob whose report, emerging in the February of 1963, formed the basis of the Government's decisions.

It is equally true that the restructure could never have been carried out without Service co-operation. It is this fact of life that has characterised the slow, but relatively painless, co-ordination of Defence resources which has followed in the wake of the Thorneycroft proposals.

If you wanted to exemplify the British feeling for pragmatism and compromise, you could do no better than point to the gradual processes which have been allowed to take charge of defence organisation.

Admiral of the Fleet, the Earl Mountbatten of Burma. In 1955, Lord Mountbatten became First Sea Lord and Chief of the Naval Staff: four years later he became Chief of the Defence Staff and was engaged on the welding together of the former Admiralty, War Office and Air Ministry into the Ministry of Defence.

Slowly but surely, the centre has grown in strength at the expense of the three Service Wings, but without serious diminution in Service loyalty or morale.

ENTER MR HEALEY

None supposed the Thorneycroft reforms would be the end of the story. If any doubts on this did exist at the time, they must have been swiftly resolved by the general election in 1964 which returned the first Labour Government for 13 years, and saw Mr Denis Healey, clever, energetic and an apostle of United States Defence Secretary Robert McNamara, installed in Thorneycroft's place at the Defence Ministry.

The Rt Hon Denis Healey, MBE, MP. He joined the Army in the Second World War and became a Major in the Royal Engineers, serving in North Africa and Italy. In October, 1964, Mr Healey was appointed Secretary of State for Defence, a post he held while Labour was in office until the general election in June, 1970.

But even Healey was a prisoner of the possible. This was made clear two years later with the completion of a departmental study which has become known as the Geraghty Report, after the deputy under-secretary who produced it. Geraghty who, with a committee, looked afresh at the problems, produced a report which was meant to give impetus to the rationalising process which was thought to have lost some momentum, though the desire for further change was still very strong.

The report was a lucid, well presented document which, however, suffered one overwhelming fault, it went too far.

It proposed the complete functionalisation of the Defence hierarchy, stripping the individual Service Ministers of their Service responsibilities and replacing these with special functional jobs — like administration or equipment or personnel. The Services were at once alarmed by what looked like a frontal attack upon their independent status.

GROWING CENTRALISM

Defence Minister Healey, not quite sure what to do with this contentious document, did what any other minister would have done — he set up a committee. The Committee, which included representatives of the three Services, quietly forgot all the more radical proposals contained in the Geraghty Report. But it did make one step forward in the interests of co-ordination by proposing a new post, that of Chief Adviser Personnel and Logistics (CAPL), a four-star officer who would be responsible for personnel and logistics across the board. The job exists today and is one of the most powerful offices in the Ministry.

The CAPL post was announced by the government in the white paper of 1967. In the following year the Services lost their own second permanent Under-Secretaries in the Civil Service. Instead of the Permanent Under Secretary (PUS) controlling three second PUSs, he now had only two under him, one for administration, the other for equipment.

At the same time the Service Ministers were downgraded yet again to the rank of Parliamentary Under Secretary, below two new posts, the Ministers of State for Administration and for Equipment, who stood between them and the Defence Secretary himself.

These two developments were significant because one now had a unified Civil Service in the centre, operating on functional lines, led by a single Defence Secretary and two Ministers of State. The Services retained their individuality and their parliamentary representation through their own Under-Secretaries. But these were becoming increasingly concerned only with domestic service matters.

RATIONALISATION

In 1968, the Services lost further ground with the build up of the authority and scope of the Central Planning Staff. The post of Deputy Chief of Staff in each of the three Services was established which meant that the Service Boards each lost one of their members. While the Chiefs of Staff retained their own briefing staffs, these were shorn of most of their power. This, once again, had passed to the centre.

And so it went on. A further major step taken by Healey was the establishment of a committee referred to as the Headquarters Organisation Committee, which included not only civil servants and senior officers, but also two outsiders. It began its deliberations at a time when Healey was concerned about the size of the defence structure and it sat for two years examining a wide range of options for Rationalisation.

Three areas studied were of particular importance. One was the position of the single Service under-secretaries. The Committee finally recommended that these should disappear altogether. Two junior ministers of similar rank, but with functional, across the board responsibilities should take their place.

The second area to be considered was the future of the Service Boards. The Committee decided that these should remain. It thought that as the policy decisions would be made at the centre anyway, there was a strong argument for retaining a committee to sit behind the Chief of Staff of each of the three services.

CHIEF OF DEFENCE STAFF

Finally, there was the position of the Chief of the Defence Staff (CDS). Much thought had been given to this down the years, and the importance and status of the post had varied from man to man. Field Marshal Sir Richard Hull, who succeeded Mountbatten, was a shrewd officer who had deliberately tried to impose his own stamp on the post rather than accept the pattern of power bequeathed by his eminent predecessor. Mountbatten liked to decide everything himself without paying too much attention to the Chiefs of Staff under him — a penchant which was helped by his own patrician background and the awe which it sometimes instilled.

POWER AT THE CENTRE

Hull by contrast resolved to be rather more the chairman of a committee of equals.

Field Marshal Sir Richard Hull, photographed as Chief of Britain's Defence Staff. Commissioned in the 21st Lancers in 1928, Field Marshal Hull first made his name during the North African campaigns of the last war when his bold tactics and outstanding leadership won him the DSO. At the age of 37 he was promoted to command an armoured division in Italy and later he commanded a division in Germany. Since the war he has held a series of increasingly important military appointments in Britain, Middle East, and the Far East.

Now the Headquarters Organisation Committee decided to give more power to the CDS because it was felt that this was the way to fit this theoretically powerful figure into the growing functional system at the centre.

For example when Marshal of the Royal Air Force Sir Charles Elworthy became CDS, he cut across the advice of the Chief of the Air Staff on at least one important occasion — involving the future of aircraft carriers — emphasising both his power and his independence from his old single service background.

It is also worth remarking that Admiral of the Fleet Sir Peter Hill-Norton, the current CDS, is probably the strongest tenant since Mountbatten. His probable successor, General Sir Michael Carver, though a very different type of man, is also expected to be a vigorous and decisive CDS who will emphasise the Tri-Service nature of the job.

Admiral of the Fleet Sir Peter Hill-Norton. He succeeded Marshal of the Royal Air Force Sir Charles Elworthy as Chief of the Defence Staff on 8 April, 1971.

ENTER LORD CARRINGTON

Not all the organisation committee's recommendations were to be adopted. This was the result of another general election — this time in 1970 when the Conservatives won.

Lord Carrington, a former First Lord of the Admiralty, moved into Denis Healey's chair with one very clear objective: to regain the confidence of the Services after this had been forfeited not so much by the centralising process in the Ministry as by the cuts in strength which had so drastically thinned the ranks.

Carrington swiftly decided that what the Services most needed was not continuing change but a period of stability during which they could get used to the changes of the past and consolidate their existing positions.

Accordingly, he announced that the individual Service Under-Secretaries would not disappear as the Committee had proposed. They would be retained if only because this would avoid further upheavals. In any case he had come into the Ministry with an open mind — like Healey six years before — and wanted to review the situation himself instead of merely inheriting the plans and decisions of his predecessor.

MORE RATIONAL PROCUREMENT

There has however been one other big change since the present Government came to power — the creation of the Procurement Executive which has united the separate Navy, Army and Air Force Research and Development Establishments under one department at the Ministry. It was not accomplished without opposition from a number of quarters, but the result should ensure a more rational approach to procurement problems across the board.

The Rt Hon Lord Carrington, the present Secretary of State for Defence, to which position he was appointed when Mr Heath formed his Cabinet in June, 1970. He was born on 6 June, 1919, and educated at Eton and the Royal Military College, Sandhurst. From October, 1954, until the autumn of 1956, he was Parliamentary Secretary, Ministry of Defence. In 1959 he was appointed First Lord of the Admiralty, a post he held until October, 1963.

POWER AT THE CENTRE

The list of cancellations which characterised British defence procurement for the last decade should in theory now belong to the past. Error, if not entirely ruled out, should be much less likely.

There have been another set of changes over the years which should be mentioned. The Services have each taken over one Tri-Service function as a kind of side specialty. The Navy for example looks after the wholesale victualling for the armed forces. The Army looks after transport and the RAF accommodation stores. This does not mean that RAF officers on an Army base supervise the married quarters. It involves the central administration however, and are an example of official preoccupation with the idea of a functionalised ministry.

WHERE NOW?

So where do we go from here? To that question the Services would reply with almost one voice "nowhere". But then the Services however tolerant of change once it has been introduced, always plead that enough is enough. There are certainly several directions in which one could envisage future movement towards still greater integration.

One involves a Tri-Service promotion list for all officers above the rank of, say, major-general. If nothing else this would help to reinforce the principle that the first loyalty of officers is ultimately to the national well being and not to their own particular Service. There are also a number of jobs at the top which could be integrated with financial savings which the services might learn to appreciate. With the growing pressures on resources, savings on overheads must be considered by Services who are obliged to spend their money carefully.

On the other hand, there is no intention at present of removing the service ministers, still less to replace the three Services with a single structure on the lines of the Canadian model.

Service morale is an important consideration. No advance in administration is a true advance if the Services are implacably opposed to it. Gentle persuasion is the only way to move forward.

HMS ARK ROYAL.

The Canadians, with admittedly much smaller forces, rushed all their fences at once, and are still picking themselves up. In fact, opponents of change in Britain have been known to cite the Canadian example as part of an argument for doing nothing at all.

It is also arguable that it is more efficient to retain the divisions between the three Services than to do away with them. After all the Navy, Army and Air Force are each combating different elements — water, land and air. Each demands specialised knowledge. A naval gunner and a Naval signalman have far more in common with each other than the gunner has with a Land Artillery soldier. Similarly, it is no bad thing to retain a Parliamentary Under-Secretary who is specialised in dealing with the specific problems of his one Service.

GOOD RELATIONS

Relations between the Services are in general, good. In addition to the co-ordination over victualling, transport and accommodation, the Navy looks after the RAF's helicopter spares at executive level, while the

RAF in turn looks after the Navy's fixed wing spares.

But relations still tend to sour when Inter-Service discussion touches on certain sacred cows. For instance, the Royal Navy is passionately wedded to the concept of the Through-Deck Cruiser because this will retain its big-ship image which will otherwise fade out with the last of the aircraft carriers, ARK ROYAL. The RAF on the other hand is opposed to the concept of maritime Hawker HARRIERS and, similarly, is not very good at joining in national analysis of the problems.

The issue of who will actually fly the HARRIERS from the Through-Deck Cruisers, assuming that HARRIERS will fly from them at all, is still a potential source of friction between the light blue and dark blue uniforms.

All three Services rushed to the ramparts several years ago on learning of a proposal to scrap the independent Service Cadet Colleges, replacing them with Tri-Service institutions. Cadres of senior officers marched grim faced into the meeting at the ministry at which the proposal was discussed — and later, dropped

The multi-service vertical take-off and landing HARRIER jump jet. To date, the RAF have ordered 90 HARRIERS and the United States Marine Corps 60.

FIRM FOUNDATIONS

They remain, therefore, very much separate Services, and any attempt to effect a shotgun wedding between them — especially if it involved donning the same uniform — would be strongly resisted. Traditions die hard. But the important decisions affecting Britain's defence are now made through the centre and a redistribution of power has been accomplished with relatively little fuss. After the period of patient, tactful change the Services, by and large, are happy with the present position.

The building process has been slow, even hesistant. But the resulting edifice is steady and its foundations firm.

OUR COVER

HMCS GATINEAU (DDE 236) a revised Restigouche Class, Anti-submarine type of Destroyer Escort. Canadian vessels of this class have been converted to carry variable depth sonar and ASROC missiles.

CONTRIBUTIONS INVITED

The editor invites persons to submit articles, photographs and drawings (black ink) for inclusion in the magazine, but regrets that no payment can be made for contributions submitted. Contributions should be addressed The Editor The Navy Box C122 Clarence Street Post Office Sydney, N.S.W., 2000, Australia.

The Editor, does not hold himself responsible for manuscripts though every effort will be made to return those with which a stamped and addressed envelope is enclosed.

BOOK REVIEWS

CHINESE STRATEGIC THINKING UNDER MAO TSE-TUNG

(Canberra Papers on Strategy and Defence No 13)
Published by Australian National University Press
Author:
W. A. C. ADIE
26 pages — Price: $1.50

Review by:
Lt Cmdr B. R. Nield RANR (Retd)

The Chinese Communist government has, it is generally agreed, taken many of its policies from international communist theory and practice, some of its policies, however, are distinctively Chinese. Chairman Mao is proud of his knowledge of Chinese classical literature and of his ability to write Chinese poetry in the traditional style. In his military thinking, also, he follows doctrines laid down in the Chinese military classics.

Mr W. A. C. Adie, who is a Senior Research Fellow in International Relations at the Australian National University, gives a concise, well-organised introduction to Mao's military thinking.

He makes and implies some criticisms. Thus he states (page 5): "The so-called thought of Mao is more an attitude of mind or a spirit than a formal doctrine. As such, it cannot really be taught — you can be converted to it or absorb it by a sort of induction". On the other hand, he sets out in tables some of the systematic thinking that is found in Mao's writings. He also shows how Mao points the way to certain main objectives, such as "disintegration of the enemy forces" (see pages 14 and 15).

Mao's declared methods of warfare have limited application, and would, perhaps, not be successful against a powerful invading force like the Japanese army between 1931 and 1945. Nevertheless this military teaching cannot be brushed aside as mere communist propaganda.

As Mr F. F. Lin, a former Chinese Nationalist army officer writes in **A Military History of Modern China, 1924-1949**, "The Chinese Communist Mao Tse-Tung is a man whose genius in strategy is not the product of any military school."

SLOOPS AND BRIGS

(An account of the smallest vessels of the Royal Navy during the great wars 1793-1815)
184 pages including tables
Price: $8.10
AND

THE FRIGATES

(An account of the lesser warships of the great French Wars 1793-1815)
177 pages including 16 plates
Price: $6.70
Both books published by Adlard Coles Ltd, London: our copies supplied by Hicks Smith & Sons Pty Ltd, Sydney
Author:
JAMES HENDERSON, CBE
Drawings by:
ERNEST E. YELF

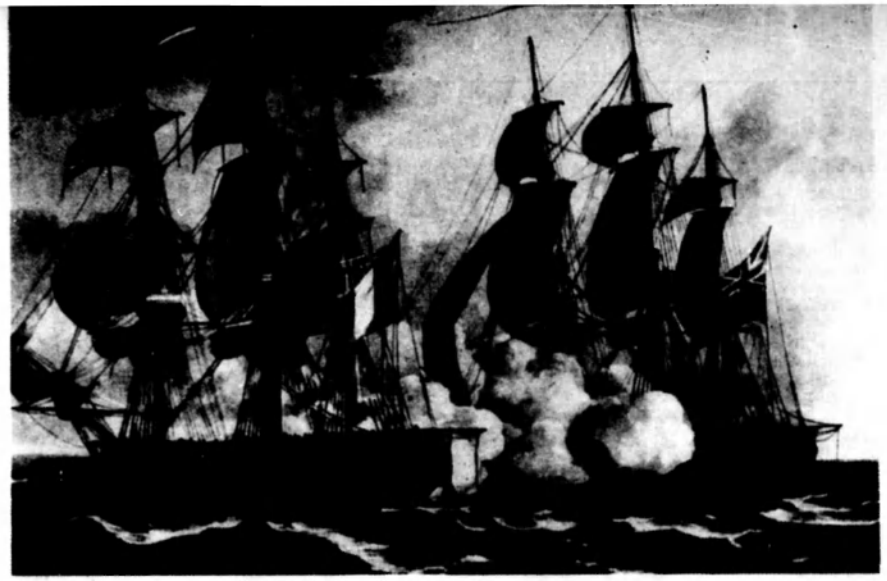
Reviewed by GALATEA

"I do not say the French cannot come, I only say they cannot come by sea". The superbly confident sentiments expressed in this statement by the great Admiral of the Fleet, Earl St Vincent, were engendered and continually augmented by the men and ships of the largest, most powerful, longest lived, strategically influential weapon of war and peace the world has ever known — the Royal Navy.

Whilst the awesome main battle-fleets of Great Britain, France, Spain and the Netherlands pummelled each other to flinders in massively formal head-on slugging matches, it was the little ships of the great navies that clashed most frequently in oftimes vicious and bloody little encounters which, on many occasions, produced casualty figures out of all usual proportion to the number of personnel involved in the action. In my opinion, the two volumes under review here contain the best information extant on the activities and influence of these pugnacious little ships and their courageous commanders and crews.

It was my original intention to review only "Sloops and Brigs", however upon reading this volume, I encountered so many references to "The Frigates" for supplementary information that I decided to read that book as well; a choice of action that is singularly free of regret, as the two works obviously complement each other.

In both books the exquisite care of the lifelong afficionado student is apparent in the wealth of fascinating material presented in an extremely easy-to-read format. The first part of "Sloops and Brigs" contains excellent half-tone line drawings of the principal craft under discussion. "The Frigates" does not have this feature as only one type of vessel is discussed; the differences applying mainly to the size of the frigate and consequent variations in armament and other miscellania. However, in order that readers be made familiar with the general sail and rigging details, a sketch plan is incorporated inside the front and back covers of "The Frigates".



Flagard and Immortalite; reproduced from THE FRIGATES.

Excellent reproductions of marine paintings and etchings are evenly spaced throughout each book together with concise notes on these works at the end of each volume.

Considerable space is devoted to the working and living conditions of the crews of the early 19th Century Royal Navy and the system of ranking used on the Lower Deck. The truly incredible promotional system for the officers must be read fully to be believed. "Interest" (now called "influence"), was not only necessary, it was absolutely essential in order to obtain rapid promotion. For example, if Nelson's uncle had not been Comptroller of the Navy, he would not have been made Post-Captain at the remarkable age of beardless twenty. **(A somewhat pecuniary attitude prevailed as regards promotions in the army. It is reliably stated that the commission obtained by Lord Cardigan, of Balaclava infamy, cost him the staggering sum of 40,000 pounds).** Above the rank of Post-Captain, promotion was by seniority only, almost regardless of professional competence. The occasional resulting chaos can be imagined.

Even though flogging was the standard corporal punishment, popular fiction has raised this already barbaric method of maintaining discipline to the swishing heights of perpetual quarterdeck blood-lust. Only the ship's commander could order this punishment and, in these books, the reader learns that inept commanders, able to maintain discipline only through overt and sadistic use of the lash were, thankfully, rare.

The few mutinies were due, principally, to this cause, and one should bear in mind that during the wars of the period, no ENEMY ship came in through mutiny. That there was no flogging in the French Navy was true enough; too late did the few mutinous British crews discover that the French equivalent to fifty lashes was seven years in the galleys, which usually meant hard labour on road construction, all the time with a 24-pound round shot shackled to the ankle of the luckless matelot! Mutineers were despised by both sides, and received scant consideration.

The content of these books is, in the main, devoted to the exploits of the LITTLE SHIPS. Their Second World War equivalent would undoubtedly be the FLOWER class corvettes and BLACK SWAN class frigates and, like their successors, the sloops, brigs and frigates of the Buonapartist era were fated to be involved in more than their fair share of bloody action; often as a result of acting as escort to merchant convoys beset by privateers or "Chasse-Marees", or through meeting enemy men-of-war whilst on single ship patrol. Almost invariably they gave as much, if not more, than they received even though the ship-to-ship ratio was often two or sometimes three to one against them. The damage these little vessels received was sometimes severe enough to sink them, but the officers and men behaved with great gallantry and many convoys were able to find safety through their heroic efforts.

Some of the Royal Navy's greatest Captains such as Pellew and Lord Cochrane made their reputations as frigate commanders.

This was still the age of chivalry at sea. It was against the etiquette of war for a line-of-battleship to fire on a frigate during a fleet action, unless the frigate asked for it by firing first. HMS EURYALUS thus remained unscathed at Trafalgar, even though she was acting as signal repeater vessel first for Nelson and, later,

BOOK REVIEWS

Collingwood and actually towed off tha dismasted HMS ROYAL SOVEREIGN!

Accounts of clashes between the very large American frigates and the British equivalents abound in the appropriate volume. The Americans built excellent vessels which were entirely manned by volunteers and were, as a consequence, the most formidable of opponents. Encounters between the two protagonists were notable for being very hard-fought actions between professional equals and the casualty lists were invariably heavy.

The only point with which I take issue occurs in this section. Mr Henderson states that possibly the last formal written challenge between warships occurred during May 1813, when the Captain of the British SHANNON challenged his opposite number aboard the USS CHESAPEAKE to come out of Boston Harbour and join battle. (CHESAPEAKE made for the open sea eventually and was defeated). I believe the last formal written challenge was issued by Commander John Winslow of the barquentine-rigged steam sloop USS KEARSAGE to Captain Raphael Semmes of the Confederate Steam Ship ALABAMA on 14 June, 1864, whilst the last-named vessel was refuelling and being overhauled in the neutral French port of Cherbourg. Semmes came out and, after a valiant fight, was sunk with his ship.

I enjoyed both books immensely. They will rank among the outstanding works of Naval history and will appeal as much to the discerning general reader as to the historian; not only for the painstaking research on which they are based, but also for their brilliant evocation of the exploits of the most daring men and their ships in the high noon of the Royal Navy. I cannot choose between them.

Buonaparte, in his frustration, once stated that (if he was) given command of the Channel for only twenty-four hours, England would be his. The small ships of the Royal Navy and the vigilance of their crews would not allow him even this margin.

NONE BUT THE VALIANT

(Stories of War at Sea)
Author: Graeme Cook

Published by Rupert Hart-Davis, London. Our copy supplied by Hicks Smith & Sons Pty Ltd, Sydney.
151 pages including 27 photographs.
Price: $5.40

Review by:
Lt Cmdr B. R. Nield, RANR (Retd)

We all like to read about naval history, and we all know that there has been plenty of this history in the twentieth century.

Unfortunately, the naval history writing of this period has been concerned very much with the technical and professional aspects of modern warfare. This voluminous literature is addressed mainly to readers who are experts, enthusiasts or determined investigators. There is, therefore, a need for books that provide concise narratives of naval action and naval experiences.

In this short book, Graeme Cook has provided a series of excellent brief accounts of naval fighting between 1914 and 1945.

He tells the stories of, for example, the sinking of the ROYAL OAK, the survival of the tanker SAN DEMETRIO, and von Luckner as captain of the Seeadler. When I had finished this book, I wished that Graeme Cook had added some more stories, like that of the German raider WOLF in the First World War, or that of the Australian coast-watchers in the Solomon Islands in 1942. But that shows that the appetite is stimulated and that there should be more books like this.

This book is recommended as a first book on twentieth-century naval history.

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Charting the Seas of the World

by Rear Admiral Steve" Ritchie

The International Hydrographic Bureau came into being in 1921 as a result of an international hydrographic conference held in London in 1919.

Even before World War I, Prince Albert I of Monaco and Ingenieur General Hydrographe M. J. A Renaud had raised the possibility of forming an international hydrographic organisation at a maritime conference in St Petersburg.

At the close of the war, Renaud, who as the French Hydrographer had worked closely with his British wartime counterpart Rear Admiral Sir John Parry, proposed that a hydrographic conference should be called in London.

there, and together with his world bathymetric chart of the oceans on which his staff collected all soundings then being obtained in the deep oceans, the Prince was attracting men concerned with the science of the sea to Monaco.

General Bathymetric Chart

Since 1921, a conference has been held in Monaco every five years at which delegates representing member states discuss standardisation topics, administration of the Bureau and set a course for the next five years.

east side of the port, where it continues to operate today, enjoying the personal interest of Prince Rainier.

In 1929, the Bureau took over from the Monegasque Government the maintenance of the General Bathymetric Chart of the Oceans. This world chart in 18 sheets is now in its fourth edition, being printed and published for the Bureau by the Institt Geographique National, Paris.

A number of member states have taken over the responsibility for collecting all available deep sea soundings in areas assigned to them, plotting them in large scale sheets which are subsequently used for compiling the smaller scale world chart.

The author, who until he retired in 1971, was the Hydrographer of the [illegible], was recently elected president of the Directing Committee of the International Hydrographic Bureau based in Monaco.

Standardisation Of Symbols

Twenty five governments sent representatives and the fortnight's discussions covered many aspects of hydrography, particularly the desirability of standardising chart symbols and styles.

The most concrete result was the decision to set up a committee of three delegates to study the means whereby a permanent international hydrographic bureau might be set up to foster the standardisation and free exchange of hydrographic data between nations.

The committee consisted of Renaud of France, Parry of the United Kingdom and Captain E. Simpson, the United States of America Hydrographer. They worked hard and by 1921, the Bureau was set up and accommodated in Monte Carlo.

Monaco was an excellent place for such a bureau to be established, for in 1910, Prince Albert had built his famous Oceangraphic Museum

Prince Albert I died in 1922, since then the Monegasque Government has generously supported the Bureau. In 1929, Prince Louis II opened a new building on the north-

Rear Admiral George S. Ritchie. In 1972 he was elected President of the Directing Committee of the International Hydrographic Bureau, based in Monaco.

International Convention

Until 1967, the International Hydrographic Bureau had no official inter-governmental standing, but during the conference of that year, a committee of legal experts drew up a convention and associated regulations which, since ratified by the great majority of the 43 member states, has resulted in the formation of an International Hydrographic Organisation (IHO) of which the Bureau is the administrative and functional centre.

During the last five years, there has been a dramatic development in international maritime cartography resulting from an increasing number of nations formerly using fathoms and feet to indicate sea depths changing to metres.

This means that the great majority of the world's charting nations now employ identical measurements, the metre and decimetre for depths and the internationally adopted nautical mile of 1,852 metres for distance at sea.

This giant step forward in standardisation has led to a situation whereby many smaller scale charts of the oceans may be compiled from a number of surveys from different sources by a single member state which is then willing to provide other members of the IHO with reproduction material for the reprinting of this international chart in their own hydrographic offices.

World Wide Series

Two small scale worldwide series of such charts are already being compiled, while a series of somewhat larger scale international charts of the North Sea has now been worked out by the six member states who belong to the North Sea Hydrographic Commission, one of three regional commissions formed within the framework of the IHO.

The International Hydrographic Conference held in April 1971, appointed a new directing committee consisting of myself as President, with Rear Admiral Tison, formerly head of the US Coast and Geodetic Survey, and Commodore Kapoor, the Indian Hydrographer, as the other two members.

The main task of the Bureau, as servants of the 43 member states, has always seemed to me to be that of oiling the wheels of international co-operation in all matters concerning charts, sailing directions and other publications produced by hydrographers for the safety of mariners, which includes standardisation and free exchange of hydrographic data among nations.

The Bureau is maintained from subscriptions by member states, the amount being regulated by the tonnage of shipping under the flag of each individual nation. Those rates are broken down into four or five classes, but even the 'top five' nations do not contribute large sums of money when compared with many other international activities.

Changing Pattern Of Shipping

It is therefore the task of the Bureau to do the best it can on a limited budget. So the new committee is unlikely to launch out on any grandiose schemes, but will expect rather to continue the work of its predecessors in fostering the growth of international chart schemes and reaching agreement on new symbolisation which the changing pattern of shipping at sea, such as separation routing and deepdraught navigation make necessary.

I believe it is important that communication with member states be further improved, for much of the work of the Bureau entails reaching international decisions by postal voting, when a high proportion of returned votes is necessary if the organisation's courses of action are to be truly representative of its members.

When one looks back over the 50 years, and ten conferences, it is impressive to see how far along the road the member states have come towards complete international chart standardisation, while the friendly co-operation which has developed among the heads of national charting agencies shows a fine example to the world.

My committee will be happy therefore if in four years' time, the conference of 1977 finds that we have been able to maintain the steady speed of advance in meeting the changing navigational needs of the world's seamen.

CHANGE OF ADDRESS

Important notice to Subscribers to "The Navy" and Fellows of the Navy League of Australia.

It would be helpful to the Editor, Federal Secretary and Post Office if you would kindly complete the form provided below prior to moving from the postal address registered with the Navy League, thereby ensuring that "The Navy" reaches you on time.

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A MARITIME STRATEGY FOR AUSTRALIA?

by OBJECTIVE

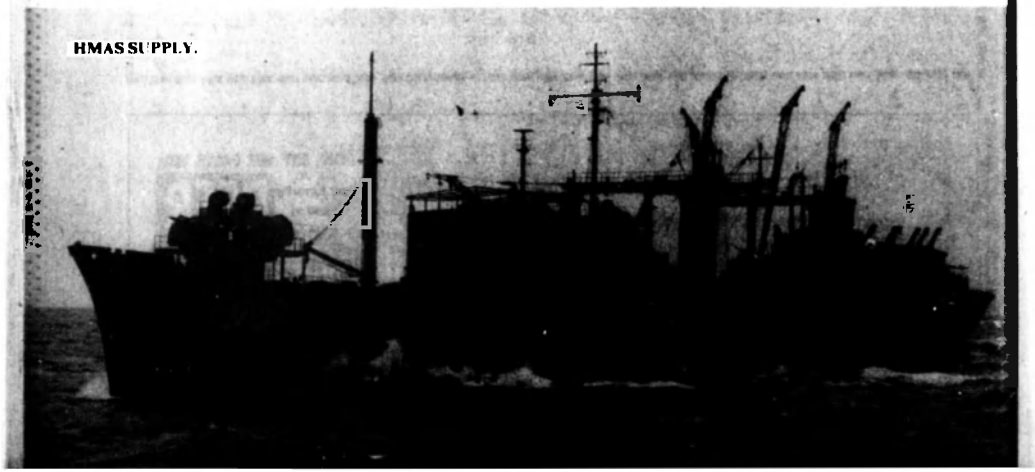
Much has been written on the subject of Maritime Strategy. Doubtless much more will be written. But what are the advantages of a Maritime Strategy and Maritime Weapons to Australia?

Flexibility is a leading advantage. Our island continent is enormous related to the population. We are far from many of our neighbours in terms of nautical miles. Our defence resources are very limited when compared to the area which must be patrolled or defended. On top of this, our Government should have the opportunity of sending assistance to our allies if political commitments make this necessary.

Maritime Forces, ships and maritime aircraft, can be used to achieve any of these objectives. Our carrier task force can be used in support of our land forces here at home, for patrolling the sea approaches to Australia, or as a material and leading contribution in aid of allies in difficulty (without the potential political embarrassment of shore based forces). Our submarines can be used in their anti-submarine role in home waters, in their attack role against marauding surface forces, or again in their attack role as an aid to allies. The flexibility imparted by a Maritime Strategy enables the optimum employment of tightly stretched defence resources.

The Mobility of Maritime Forces allows significant strength to be moved from the Tasman Sea to the Indian Ocean, or from Sydney to Singapore, in a matter of days. Our carrier task force will be able to operate, with the support of HMA Ships SUPPLY and (we hope) PROTECTOR, independently off Singapore, Suva or Auckland, or from the new naval support facility at Cockburn Sound, Western Australia. This new facility will enable our submarines to move rapidly from their Sydney base to operate for periods of up to one year in the Indian Ocean (submarines from Fremantle ranged up to South East Asia in World War II). The two potential roles (anti-submarine and attack) of the OBERON Class submarines will derive added advantage from the ability to operate from Sydney or Cockburn Sound.

Mobility, in terms of the ability to move rapidly Army units to any part of Australia, is another advantage of Maritime Forces. However, it must be said that HMAS SYDNEY, in spite of her high carrying capacity in terms of numbers, does not have the type of heavy lift capacity that would enable her to land a fully integrated force on a shore where there are no modern port heavy unloading facilities. The new LCHs (HMAS BALIKPAPAN and her seven sisters) are fine vessels for their size, but do not have the range necessary to take full advantage of HMAS SYDNEY. If reported ideas of frequent Army training exercises in Singapore or Malaysia materialise, SYDNEY or her successor(s) will play an essential role.



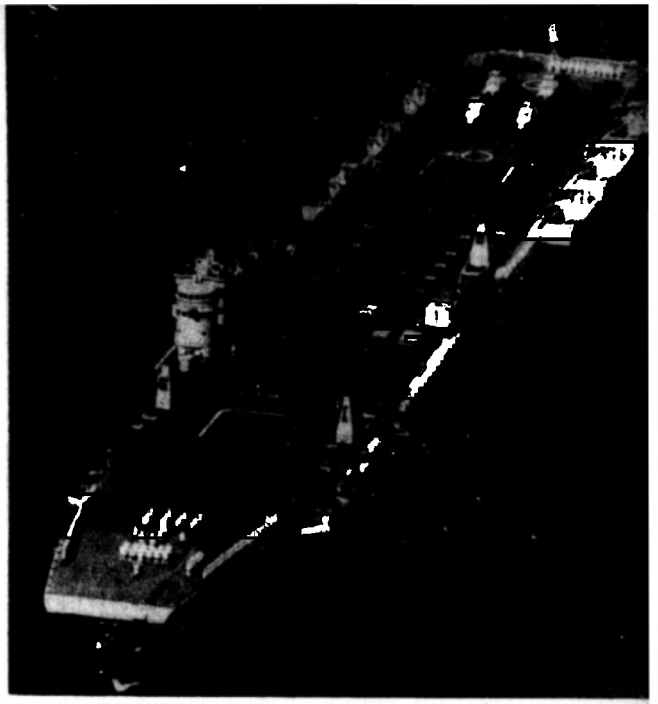
HMAS SUPPLY.

A Maritime Strategy is a necessity to an island continent that depends upon seaborne trade for a major part of her economic welfare. This is not to say that our neighbours are liable to cripple tomorrow our seaborne trade and economy by maritime attack. Their current political leaders are not so inclined. However, a number of our neighbours have the maritime ability to seriously hinder our seaborne trade. Political leadership of developing nations can change very drastically, and in much shorter times than it takes to build additional ships and aircraft, not to speak of training technically oriented crews.

In terms of contribution to our international neighbourhood, Maritime Forces could play a major part. Maritime Forces optimise Australia's advantages (highly trained technically oriented personnel manning sophisticated ships and aircraft) and minimise Australia's disadvantages (a shortage of numbers in infantrymen). Maritime Forces enable the Government to send aid to neighbours (or remote parts of Australia) in the event of natural disasters — how effective and impressive it would have been to send HMAS SYDNEY to what was then East Pakistan at the time of the floods. Maritime Forces offer the opportunity to train allies' personnel in a field where Australia has exceptional skills.

Their politico-diplomatic flexibility, military mobility, geographic necessity, and area participatory potential combine to make Maritime Forces (both ships and aircraft) offer Australia the greatest defence potential when we must get the maximum value for money.

The Editor invites readers to write brief comment and discussion on this subject for possible publication in future editions.



HMAS SYDNEY en route to South Vietnam with an Army contingent.

Re-Organisation of the Australian Defence Group of Departments

Text of a statement made by the Deputy Prime Minister and Minister for Defence, THE HONOURABLE L. H. BARNARD, MP.

Today (19 December, 1972), I have assumed charge of the Department of Defence and of the four other Departments in the Defence Group — Navy, Army, Air and Supply.

My colleague, the Minister for Repatriation (Senator Bishop), has been assigned by the Prime Minister to be Minister Assisting the Minister for Defence in respect of the Defence Forces.

I welcome this appointment. The Government has decided that because of the heavy burden of defence policy which will fall on the Defence Minister, a second Minister, acting under the policy and higher management direction of the Minister for Defence, should be appointed to whom the three Services may look for political guidance and who will answer questions in Parliament relating to their particular Service interests. Senator Bishop will participate, along with me as Minister for Defence, in discussions when the interests of Servicemen are involved in matters coming before the Government. The Minister Assisting will exercise on my behalf many of those functions which, under existing legislation, are conferred on the Minister for the Navy, the Army, Air and Supply.

Broadly, his functions will relate to those day-to-day responsibilities of personnel management, and of training and of administration of the Navy, Army and Air Force which do not involve matters of defence policy, and those activities of the Department of Supply which do not involve defence policy directly, and which in the past have been the function of individual Ministers.

The reorganisation of the Defence Group of Departments will take place in stages. In the first stage, the Department of Defence, acting on behalf of its Minister, will be given greater authority in its direction of the execution of defence policy and approved defence objectives by each of the three Service Boards and by the defence production, procurement and scientific areas of the Department of Supply. Direction of the total defence programme towards national objectives and policies requires that the Department of Defence be given more effective means of control of spending in individual departments who will be required to satisfy the Department of Defence that policy is being effectively carried out.

These moves towards integrated defence management will be preliminary to the second stage of reorganisation in which there will be more direct lines of control over the activities of the Services and of defence production, procurement and defence science.

The Government intends, at the second stage and before the end of 1973, to merge into the Department of Defence the three Service Departments, and to reorganise the place in the defence system of the procurement and production activities and the Australian Defence Scientific Service now in Supply. Legislative amendments will be introduced, after the plans for organisational change have been prepared by the Secretary of the Department of Defence, in consultation with other responsible authorities, and after the Government has made a decision on them.

To ensure that the right direction and necessary momentum are sustained in the preparation of the detailed reorganisation, certain principles are to be observed.

First, there is ultimately to be a single Department of Defence comprehending the staff now in the Defence and Service Departments. The disposition of the various functions in the Department of Supply will be a matter for decision after further study. Appropriate arrangements will be made to make full use of officers whose positions will be affected by the changes when they occur.

Second, the reorganisation will not change the separate identity of the Navy, Army and Air Force. Moreover, in the interests of efficiency within each Service, a substantial degree of delegation of financial and other authority for administration, whether to Service or civilian officers, will continue.

Third, the change in the second stage will bring under a central functional control, some aspects of supply, personnel and other policies which have hitherto been managed by individual Services in three separate organisations, while the Department of Defence has attempted to ensure a common and effective defence policy. In the interests of Australian defence industry, and in order to modernise personnel employment practice in the Services, and to permit controlled direction of defence resources to national objectives, and to reduce duplication, it is necessary to introduce more central direction of supply and personnel establishment and expediture policy.

Fourth, there is to be more effective central military control of operations and related military activities.

Fifth, the reorganisation is to improve the presentation to Parliament of the nature and cost of the various defence functions carried out in the three Services and Supply.

When the Departments are merged, the functions of Service Boards will be modified to accord with the redistribution of responsibility, within the new single Department of Defence, between the central management and the single Service management, and in order to ensure more efficient linkage between the two, and to strengthen central control of resources allocated to defence activities and of military operations.

In the meantime, the Secretaries of the Service and Supply Departments will continue to exercise their statutory functions, but under the general policy guidance of the Secretary of the Department of Defence, who will be the principal adviser on policy, resources and organisation to the Minister for Defence, Navy, Army, Air and Supply. The Chairman of the Chiefs of Staff Committee will be the principal military adviser to the Minister for Defence, and in addition to his present functions, he is to be consulted by the Military Members of Service Boards on major matters relating to Service organisation, training, and operational developments, so that he may exercise greater influence in the development of the Services towards integrated national defence objectives.

To assist the Secretary of the Department of Defence in the reorganisation, an experienced Public Servant at First Division level will be temporarily assigned to the Department of Defence.

There will be other innovations. The Government will establish standing machinery for assessing the pay and conditions of the Armed Forces and it will come into effect after the Woodward Committee completes its work. An Ombudsman for members of the Armed Services will be appointed after his mandate has been drafted and his relationship with the military disciplinary and command system has been clearly laid down. The Civil Defence Directorate has been transferred to the Department of Defence. There will later be created a national disaster organisation in association with it to cope, in co-operation with other civil authorities in Australia, with the effects of natural disasters.

The appointments reflect the Government's intention to give an important priority to maintaining efficient fighting forces controlled by modern administration under a senior Defence Minister. The Government intends to break down the separation of Service and defence procurement administrations from each other and from the Department of Defence, in which respect a number of countries have moved far ahead of Australia.

"The Civilian Arm of the Navy"

The principal objective of the Navy League of Australia is to stress the vital importance of Sea Power to the Commonwealth of Nations and the important role played by the Royal Australian Navy.

The League, in conjunction with the Commonwealth Naval Board, administers the Australian Sea Cadet Corps, by providing finance and technical sea training for boys who intend 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 Service.

We invite you to swell our ranks and so keep up to date with Maritime Affairs to help to build an ever-increasing weight of informed public opinion. The Navy League will then become widely known and exercise an important influence in the life of the Australian Nation.

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".

DIVISIONS

New South Wales — Box 1719, GPO, Sydney, 2001.

Victoria — Room 6, 2nd Floor, 528 Collins Street, Melbourne, 3000.

Queensland — 39 Pinecroft Street, Camp Hill, Queensland, 4152.

Tasmania — 3 Winmarleigh Street, Taroona, 7006.

South Australia — Box 1529M, GPO, Adelaide, 5001.

Western Australia — 182 Coode Street, Como, 6152.

Australian Capital Territory — 60 Limestone Avenue, Ainslie, 2602.

Northern Territory — C/- Mrs V. M. Slide, 12 Allen Street, Fannie Bay, 5790.

THE NAVY LEAGUE OF AUSTRALIA

Application for Membership

To: The Secretary,
The Navy League of Australia,
(.....Division).

Sir,

I am desirous of becoming a Member of the Navy League of Australia with whose objects I am in sympathy.

Name (Mr) (Mrs) (Miss) (Rank) .....

Please Print Clearly.

Street..... Suburb.....

State..... Postcode.....

Signature..... Date.....

Enclosed is a remittance for $4.20 being my first annual subscription.

AFTER COMPLETION, THIS FORM SHOULD BE DISPATCHED TO YOUR DIVISIONAL SECRETARY — NOTE LIST OF ADDRESSES ABOVE

Canada's new National Defence Headquarters Building.

CANADA'S NATIONAL DEFENCE HEADQUARTERS

Shortly after 5 December, the move to the New National Defence Headquarters building began for some 4,000 members of the department.

Officials who are planning the occupation of the new building and the move are quick to explain that there was no mass exodus on 5 December. That being the target date for DND to take over the structure from the Department of Public Works. At first the move was a trickle of essential services and, as these become established, the move will swell to a peak early in 1973.

No Break in Services

The dominating factor for the planners was to make the move without any break in essential services. This meant that some support services, such as security and communications, were duplicated in the old and the new headquarters building until no longer required in the Cartier Square complex. In most cases, staffs moved into the new structure in a patterned programme related to their functions.

The restructuring of the headquarters during the past year has involved a lot of additional work for those who are planning the move. The original plan was based on the old headquarters organization. But as the new structure of the headquarters took shape, it became apparent that the restructuring would involve a lot of costly reshuffling in the new building. So the plans were changed, and the new headquarters building reflects the revised organization structure of NDHQ.

Revised Guidelines

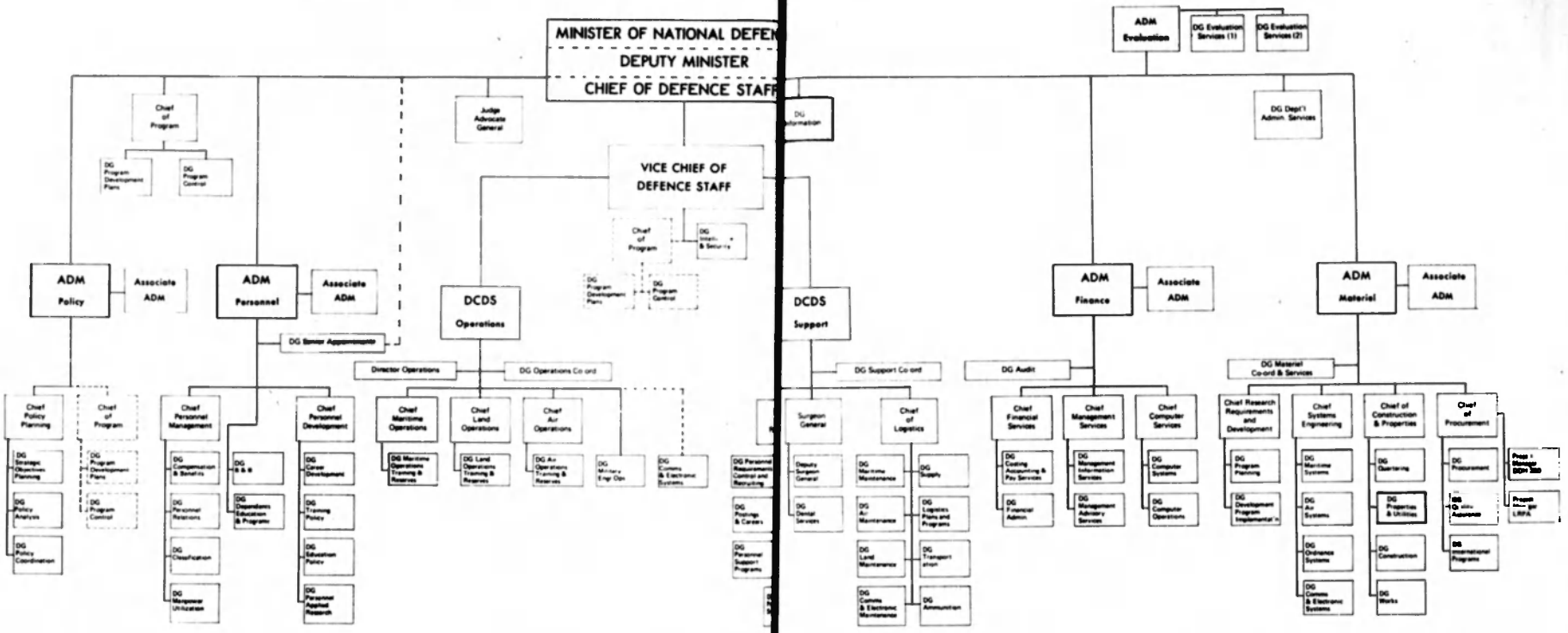
Another factor which changed the planning in the new building was a set of revised guidelines put out by Treasury Board for the use of space in government buildings. Under the new rules, more space is allowed per person, and this allowed the DND organizers to loosen up the rather tight plan they had originally proposed, even though they did not go for the maximum space allowable under the new regulations. For reasons of economy, they are anxious to house as many of the headquarters staff as possible in the new building, while leaving themselves a slight margin for flexibility.

Some organizations which do not necessarily have to be located with the main headquarters staffs will remain where they are or be housed in other accommodations.

For instance, most of the logistics organization will be accommodated at Rockcliffe, the computer operations and services will remain in the new computer building at Tunney's Pasture and Quality Assurance and Quality Engineering Test Establishment is likely to remain in Hull.

The details of the occupancy are still being worked out to reflect the new structure of NDHQ.

RESTRUCTURED NATIONAL NCE HEADQUARTERS



Restructured Canadian Nation efence Headquarters Approved

A revised organizational structure for national defence headquarters, down to director-general level, has been approved by the Minister of National Defence and the Treasury Board (see chart).

Under the new organization the major elements will be known as groups, and will come under two deputy chiefs of staff and five assistant deputy Ministers. All will hold the rank of lieutenant-general or its civilian equivalent.

There is no change in the position of vice-chief of the defence staff, to whom the two deputy chiefs report.

Immediately under groups come branches, headed by branch chiefs in the rank of major-general or civilian equivalent. Branches are further broken down into divisions, under directors-general in the rank of brigadier-general or colonel, or their civilian equivalents. In turn, divisions are broken down into directorates, and then in sections.

Significant milestones in the restructuring process include the final adjustments to the new organization and promulgation of the implementation plan by mid-September, and actual implementation of the restructuring in late September or early October.

In the 12 months following implementation, adjustments to the organization, and resolution of detailed establishments, will be carried out through normal staff action.

The restructuring comes about as a result of recommendations by a six-member, military-civilian management review group, set up by the Defence Minister in June, 1971.

In announcing the restructuring, Defence Minister Edgar Benson said that "lines of authority in the department have not been sufficiently clear, and areas of responsibility have been somewhat blurred." The new headquarters changes are designed so that its management can more effectively direct the activities of the department.

Planning and implementation of the restructuring is being carried out by a temporary staff agency, the Restructuring Control Group, under Colonel R. E. Ashton. It was set up by Deputy Defence Minister Sylvain Cloutier and the Chief of the Defence Staff, General F. R. Sharp.

TIGHT BINDING

Periscope on Australia

by Grommet

Safety Award to Helicopter Squadron

The RAN's frontline Wessex helicopter squadron, HS817, has won the McNicoll Trophy for 1972 for the Fleet Air Arm's best flying safety record.

The trophy, presented to the Navy in 1968 by the Grumman Aircraft Engineering Company, is named after Vice-Admiral Sir Alan McNicoll, a former Chief of Naval Staff.

* * *

Kara Kara sunk in Exercises

Kara Kara, a former vehicular ferry and later an RAN boom defence vessel, was sunk off the East Australia Coast on 31 January, as part of an exercise involving ships and aircraft of the RAN.

The ship was towed to the naval exercise area about 30 miles off Jervis Bay and after sustaining hits from high explosives fired by HMA Ships PERTH, YARRA and TEAL and rockets from Navy Skyhawks, Kara Kara sank in over 3,000 fathoms at 5.18 pm.

* * *

Navy Wings for Surgeon

The Navy can now lay claim to having its own "flying doctor" — in the fullest sense of the title.

Lieutenant Martin Samuel, a serving medical officer, graduated as a Fleet Air Arm pilot last January, giving him official title to skills in both medicine and flying. He is the first medical practitioner in the RAN to graduate as a pilot.

* * *

Landing Craft Commission

The RAN received its first landing craft since World War II when HMAS BRUNEI was commissioned at a ceremony at Maryborough, Queensland on 5 January.

Built by Walkers Limited, BRUNEI successfully completed sea trials shortly before Christmas.

She is the first of eight Landing Craft Heavy (LCH) to be commissioned into the First Australian Landing Craft Squadron which will be based at HMAS MORETON on the Brisbane River.

Between March and December, 1973, six more LCHs will be commissioned — LABUAN, TARAKAN, WEWAK, SALAMAUA, BUNA and BETANO. The prototype of the squadron, BALIKPAPAN, underwent joint RAN/Army evaluation trials during 1972. She is currently manned by the Army but will be handed over to the Navy in mid-1974.

The eight sea-going craft will each be manned by two officers and 11 sailors and used principally to provide seaborne support for the Australian Army.

The 146ft. 310 ton craft, about the size of the present RAN mine-countermeasures ships, will be capable of carrying up to three Centurion tanks.

* * *

Destroyer project review ordered

The Minister for Defence, Mr Barnard, has ordered a review of the plans to build three light destroyers in Australia for the Navy.

The project was announced by the previous Government in August last year.

Mr Bernard said he wanted the findings from the review by the end of April.

The Government had not decided against the project, but it was important to test thoroughly the evidence and the realism of the time and cost estimates on which previous decisions were made.

This is seen as indicative of the Government's concern at the continuing escalation of costs for the destroyers, now estimated at $355 million.

* * *

RAN Designs own Life Jacket

A new design of life jacket that gives the RAN a lead in the field of non-inflatable life jackets in Australia, is now being delivered to the Navy.

A contract for the supply of 4,000 of the Navy-designed jackets has been let to a Melbourne manufacturer.

The Navy designed its own jacket after testing 27 brands of inherently buoyant jackets which failed to meet latest RAN safety requirements.

(Inherently buoyant means that the jacket will float without being filled with air.)

One Navy requirement was that the jacket be able to right an unconscious man on to his back and

Navy pilot, Surgeon Lieutenant Martin Samuel is congratulated on his graduation as a pilot by Air Marshal C. F. Read, RAAF, Chief of the Air Staff.

keep his mouth and nose clear of the water.

International standards state that the mouth must clear the water by 12 centimetres.

The RAN jacket exceeds this standard and is self-righting within seven seconds of entry into the water.

A major cause of death among wearers of life jackets is drowning when the head falls forward into the water as a result of fatigue.

The RAN jacket, with higher than normal buoyancy and with most of its buoyancy at the front, floats the wearer on his back at an angle of 20 to 30 degrees to the horizontal.

The back of his head rests well out of the water on a buoyant collar that also helps prevent waves striking the face.

The jacket has a net positive buoyancy of 26lb (about 12kg) compared with 20lb (9.1kg) for most of the jackets of its type in common use in Australia.

Construction is of rip-resistant polyester sail cloth filled with PVC/Nitrile rubber buoyancy pads. Water-logging cannot occur and the jacket will float indefinitely.

Two nylon loops attached to the front of the jacket can be attached to a line from a helicopter so that the wearer can be lifted from the sea.

The front of the jacket is orange for ease of sighting and its back blue, a colour less attractive to sharks than bright colours.

A light activated by sea water is built into the front of the jacket. When a cord is pulled, sea water is let into the light's battery to form an electrolyte.

A whistle carried in a pocket in the jacket can be used to attract attention.

The jacket, weighing 3½lb (1.6kg) is so designed that it can be worn by men on duty at sea without hindering them and in the tropics without excessive discomfort.

The design was undertaken by Navy safety experts in conjunction with the RAN Air Station at Nowra, NSW.

The jacket is known as the SANAR, the word formed when the initials of the air station are reversed.

All RAN vessels will be equipped with the new jacket.

• • •

Fast Combat Support Ship for RAN Delayed

The Navy has delayed going ahead with construction of its fast combat support ship, HMAS **Protector**, because of an increase in the estimated cost from $42 million to more than $50 million.

A spokesman for the Department of Defence said that the Navy had completed an extensive review of the project.

The Navy had made a number of recommendations which would have to be considered by the department and the Minister, Mr Barnard.

Because of the sharp cost increase, the Defence Department would have to go back to Cabinet for further approval.

The increases in the original estimate mainly came from higher wages and dearer materials.

Previous delays in a final decision on construction have caused concern among the workforce of Cockatoo Dockyard in Sydney, which had been expected to do the building. Construction of HMAS **Protector** had been expected to begin at an Australian dockyard in May, 1972, according to the Department of Defence's annual report.

The decision to acquire a fast combat support ship for the Navy was first announced in August, 1969.

Such a ship would enable other Navy ships to operate for sustained periods away from base facilities.

The support ship is designed to replenish ships of all sizes in the fleet with a wide variety of stores, fuel and ammunition while they are at sea.

The combat support ship will also be able to carry a range of several thousand stores, including spares and general naval hardware not normally carried aboard fighting ships.

The design of HMAS **Protector** allows for the inclusion of two helicopters to transfer stores.

The design for the combat support ship is for a vessel of about 20,000 tons, with a length of 540 feet.

• • •

Naval Essay Prize

The Captain's Secretary at the RAN College, Jervis Bay, Lieutenant R. J. Leitch, has won the $1,500 open section prize of the 1972 PETER MITCHELL ESSAY COMPETITION.

The subject upon which competitors had to write was "The Impact of Japan's Evolving Defence Policy on Nations Bordering the Pacific Ocean".

The competition as always, was open to all members of British Commonwealth Navies of the rank of Commander and below.

Lieutenant Commander W. S. G. Bateman, RAN, won the second prize of $500 in the officers' section; two

third prizes each of $250 were awarded to Lieutenant Commander K. R. Menon of the Indian Navy and Commander R. A. Grosskurth of the Canadian Armed Forces.

First prize of $1,000 in the sailors' section was awarded to Air Mechanic A. H. Shaw of the Royal Navy; no second prize was awarded but third prize of $250 went to Radio Mechanic P. Nathan of the Royal Malaysian Navy.

Judging is performed by a panel of officers from the RN and RAN appointed by the Australian Naval Board.

The competition was made possible by a bequest from the estate of the late Peter Mitchell who was a grazier at Bringenbrong, New South Wales.

• • •

Raport soon on Navy carriers

A comprehensive defence study which will decide the fate of aircraft-carriers in Australia's future defence forces is expected to be completed by the middle of the year.

A spokesman for the Minister for Defence, Mr Barnard, said the study, covering the inter-relationship of naval and air power and maritime reconnaissance, was due to be presented to the minister between June and September.

The study, begun about three years ago, will make recommendations on whether Australia should continue using aircraft-carriers or not.

The carrier HMAS **Melbourne**, the Navy's flagship, is due to be paid off in 1980. Because of the long time needed to obtain a warship of this size, it is necessary to make a decision well in advance of the **Melbourne's** replacement.

The Department of Supply is already studying a helicopter landing platform which is used by the American marines for transport and logistic support in amphibious operations. The ship can also be used in anti-submarine warfare.

The defence study will cover all types of aircraft capable of being operated from destroyers and the latest through-deck cruisers.

HMAS MELBOURNE, flagship of the Royal Australian Navy will have reached the end of her useful life by 1980.

AN UNDERWATER CENTRE FOR ALL

by Commander A. Lovell Smith RN (Ret)

The new International Underwater Centre specialises particularly in diver training and providing facilities for underwater research. It can also send undersea inspection teams to any part of the world. Commander A. Lovell Smith, the writer of this article, is director of the Centre and also managing director of Aruda Marine Consultants Ltd and Underwater Security Ltd. He is a consultant to many leading firms which deal in submersibles, oceanics and so on, and to Lloyd's Underwriters.

Underwater centres which provide facilities for research, professional diver training and use of hyperbaric chambers are nothing new. But there are relatively few of them — and practically all are "closed" centres in that they are operated either by governments for naval training and research or by commercial interests for their own use.

In March 1972, however, there was an important new development. An International Underwater Centre for the use of all manufacturing and service companies, universities, academic and research establishments, governments and private individuals, was opened at Stoney Stanton, Leicestershire, in the heart of England.

The site covers 30 acres (12 hectares) of fine country of which 12 acres (5 hectares) is clear, fresh water with depths of up to 43 yards (39 metres). The centre is ideally situated, with good road and rail services and easy site access.

The flooded area was originally a granite quarry so the sides are near vertical, giving many suitable sites from which equipment can be lowered into the water, by crane or derrick on concrete hard standing. The equipment can then be left in a controlled environment for the scheduled test programme.

Amateur Divers Too

The Underwater Centre, the first of its kind in Europe, caters for the training of professional divers, underwater research and development and underwater inspection and survey. Another function is to provide recreational and amateur diving facilities for Britain's Sub Aqua Club.

More than 5,000 British Sub Aqua Club divers visit the centre for diving each year and numbers are increasing rapidly. The club is the largest amateur diving club in the world with 506 branches in Britain and overseas.

It has 1,500 members of all nationalities and its membership is growing every year. It effectively trains amateur divers through various grades within the separate clubs and is proud of its safety record.

Rare Opportunity

Diving offers one of the greatest mental and physical disciplines known to man and a rare opportunity for both amateurs and professionals to achieve a personal fulfilment.

This fulfilment starts with the ability to overcome the natural mental and psychological pressures inherent in diving. Through careful and controlled instruction the diver develops the confidence to progress steadily and equally to know and to respect his limitations.

By definition a diver is a volunteer, physically fit with a mentally stable approach to life. Apart from diving as a recreation and sport, professional diving demands that the ability to dive is not an end in itself.

Initially the diver is trained to endure physical hardship, discomfort and at all times he must have considerable courage — but his profession demands further that he should take the various skills and techniques that are commonplace on the surface and use them effectively under water.

Proficiency Certificates

Diving is safe if the training is thorough and this training is given at the Centre. It is intensive and medical examinations are required.

Certificates of proficiency are awarded on successful completion of the courses. The professional courses are varied — the basic diving course taking eight weeks. Specialist courses in underwater welding, cutting, photography, explosives and non-destructive testing are run at the same time.

These are the skills that are needed to support the rapid increase in offshore oil and gas exploration and production — particularly around the coasts of Britain, North Africa, the Middle East, Australia and South East Asia. Courses from Arab countries and European countries are being programmed.

It is hoped that developing countries will produce their own professional and specialist divers to service their own off-shore development programmes.

The diver is only one part of what is now referred to as underwater technology: the ability to provide flexible and mobile diving services as a means and not as an end. The main function is to provide skilled operators to undertake progressively more skilled work.

UNDERWATER SERVICE

Man's ability to operate under extreme pressures is constantly being demonstrated, but with severe limitations that need to be overcome and fully understood.

Research

Provision of underwater equipment requires an operational research phase. In Britain the International Underwater Centre provides an open facility for countries to carry our such a programme.

Underwater workbenches and test beds at varying depths down to 43 yards (39 metres) in perfect conditions are available. The research programmes carried out at a depth can be seen on underwater closed circuit television. Other facilities include workshops, offices, communications systems, diving equipment and boats.

The centre is manned 24 hours a day. The resident staff includes site engineers, diving superintendents and qualified professional divers.

This year's trials will include underwater cleaning and painting of ships, underwater television trials, underwater coring and drilling trials and welding trials.

On Standby

Inspection and survey teams of qualified consultants, engineers and photographers — all trained divers — are based at the centre. Besides their work of training divers and supporting the research and development programmes which come to the Centre, they are on standby to provide an immediate worldwide inspection service.

A general view of the International Underwater Centre, the first of its kind in Europe, at Stoney Stanton, Leicestershire, England.

Inspection services already carried out have ranged from the examination of a 100,000 tons supertanker sunk in 210 feet (64 metres) of water in the South China Seas to hull examination of merchant ships in port.

The Centre offers designers, engineers and consultants the facilities to test equipment in an operational setting without prematurely risking it at sea. For diving companies it provides the skilled men of higher calibre needed to support advanced underwater technology.

Enormous Expansion

This decade will see an enormous expansion in underwater hardware. But diving companies cannot afford to risk divers' lives, operators cannot risk their expensive off-shore equipment and ships and insurance underwriters can no longer insure expensive underwater equipment from the feel of the risk. National Classification Societies will need to

accept the responsibility of laying down classification and survey standards.

The International Underwater Centre will provide a common forum for interaction, co-operation and understanding between owners, operators, underwriters, classification societies and manufacturers from all countries in advancing diving and underwater technology.

The Human Element

There is no doubt about what comes first in the long chain that brings an underwater project to completion. The success of an undersea project rests in the absolute ability to live in it, or control it, operate it and recover it, with maximum safety at all times.

Other aspects of operational control procedures and adequacy of materials are conditioned by the human element.

Inadequate equipment and the failure of the human element can produce speedy international reaction particularly when it gives rise to problems of pollution in the sea. The staff of the new Underwater Centre are fully aware of the importance of this new factor in underwater affairs.

(Note: Metric equivalents are approximate.)

Two experts from Aruda Marine Consultants about to undertake an underwater closed circuit television inspection.

Nautical Notes from all Compass Points

By "Sonar"

CANADA
Order of Military Merit

First awards of Canada's new Order of Military Merit, created in 1972, went to 29 officers and 63 men of the regular and reserve components of the Canadian Armed Forces.

The 92 recipients included all ranks, from private to lieutenant general, with five appointments as Commander, 21 as Officers and 66 Members.

In his capacity as Chancellor of the Order, the Governor General, with the approval of the Sovereign, makes appointments in the three degrees of membership.

The Order of Military Merit was established on 1 July, 1972, to provide a means of recognising conspicuous merit and exceptional service by regular and reserve members of the Forces. The new Order forms part of the enlarged system of Canadian honours which includes the Order of Canada and a series of three decorations to recognise acts of bravery. The Chief of the Defence Staff is, ex officio, the Principal Commander of the Order.

The badge of the Order is an enamelled, straight-end 'patee' cross, with four arms narrow at the centre and expanding toward the ends. The ribbon is blue, edged in gold. The insignia of the grade of Commander is worn suspended from a ribbon around the neck. Officer and Member badges are worn on the left breast.

Nominations for the award of the Order may be initiated at any level and come ultimately before an Advisory Committee which assesses the nominations and recommends the degree of membership to be awarded in individual cases.

* * *

FRANCE
Magic Missiles

Matra, the French missile manufacturer, has received orders from the French Air Force and the Fleet Air Arm for 550 Magic air-to-air missiles, which will become operational by 1974. These missiles will replace Sidewinders, now the main air-to-air weapon. The air force wanted the new weapon particularly for its F1 fighters.

* * *

Hull No 1214

A 4,600 hp ocean-going tug for the French Navy is to be built by the Ateliers et Chantiers de La Rochelle Pallice.

She is to be 167ft in overall length and have a depth of 19ft. It is expected that her radius will extend to 10,000 nautical miles at 15 knots.

Delivery is scheduled for 9 February, 1974.

* * *

IRAN
First BH 7 Mk 5 Hovercraft

The first of four 50 ton BH 7 Mk 5 hovercraft destined for service with the Imperial Iranian Navy is now beginning to take shape.

Built by the British Hovercraft Corporation, the 60-knot BH 7 Mk 5 differs mainly in external appearance from earlier variants of this craft type in that it features wide side-decks. These can be used either for the installation of medium range surface/surface missile systems or for carrying bulky external loads.

As a logistic support craft using the side-decks and large central cabin, loads of up to 16 tons, including vehicles, can be carried.

As a combat craft, missiles such as Exocet can be fitted, the central cabin being used as an operations centre.

The value of the Imperial Iranian Navy contract exceeds five million pounds and, in value, it is the largest export contract ever to be received for hovercraft. The Imperial Iranian Navy already has two BH 7 Mk 4 craft and eight SR N6 craft in service making it the largest hovercraft operator in the world.

NAUTICAL NOTES

KOREA
Patrol Ship Multi-Mission Craft

Six of Avco Lycoming's TF35 gas turbine engines will power each of three new "multi-mission" patrol ships that look similar to this earlier diesel and gas turbine-powered patrol ship built by the Tacoma Boatbuilding Company, Tacoma, Washington. The new Patrol Ship Multi-Mission (PSMM) craft are being built by Tacoma for the Republic of Korea, under the US Foreign Military Sales Act. The older craft (see photograph) were built for the US Navy and are not as fast with the power plants currently being utilized.

* * *

PAKISTAN
Withdrawal from SEATO

The Government of Pakistan has announced its decision to withdraw from the South-East Asia Treaty Organization. Pakistan submitted its notice of denunciation of the Treaty of Manila (1954) to the Republic of the Philippines on 8 November. (The Treaty requires that the notice of denunciation be deposited with the Philippine Government).

In a letter addressed to Philippine Secretary of State Carlos P. Romulo, the Pakistan Foreign Ministry stated that Pakistan's decision was arrived at after careful consideration of the various questions relating to Pakistan's continued membership of the Organization. Following the events of 1971, the relevance of the South-East Asia Treaty Organization to Pakistan has diminished considerably.

However, Pakistan expressed its keen desire that although multilateral co-operation under SEATO would have ceased, the bilateral ties between Pakistan and the Philippines would continue to be further strengthened in the future.

* * *

UNITED KINGDOM
SLAM

New UK weapon, named SLAM (submarine launched air missile), is claimed to give submarine commanders a defence initiative against ASW helicopters and light surface craft. It is based on the Short Blowpipe man-portable, quick-reaction battlefield missile and has been developed by Vickers' Shipbuilding Group as a private venture — initially for the Oberon class of submarine, but with simple adaptation to most other submarines or small surface vessels. The launcher carries six Blowpipe missiles in a watertight housing. This is retracted while the submarine is dived, but is raised above water level, from a modified bridge fin, when the target is located by attack periscope. The operator then uses a TV screen and thum button controller to guide the missiles on target.

* * *

Entry sought for atomic subs

The British Government is seeking a general agreement with countries in South-East Asia for right of entry of its nuclear powered submarines to their ports.

The British Defence Secretary, Lord Carrington, said in Canberra on 5 February, that such an agreement would be "quite important" as the UK and US got more of the submarines.

Lord Carrington said the Royal Navy was planning a visit to the area later this year, probably in September, for the nuclear powered submarine Dreadnought.

Already the proposed visit has placed the new Australian Labor Government in a difficult position as the previous Government refused the US Defence Departent and Navy entry for its nuclear ships and submarines.

This followed the failure to solve the problem of liability in case of accident, particularly radiation leakage.

Lord Carrington stated that he had raised with the Prime Minister, Mr Whitlam, and the Minister for Defence, Mr Barnard, the question of the entry to Australia of the British submarines.

But he was advised the Australian Government had not yet looked at the problem in detail.

"We do have arrangements with other countries where these nuclear powered ships go," he said.

The Dreadnought would be exercising north of Australia.

"What we are trying to do is to enter into a general agreement, not just with Australia but with other countries, as to the facilities which can be enjoyed by these nuclear-powered vessels." Lord Carrington said.

NAUTICAL NOTES

USA

Advanced Surface Effect Ship

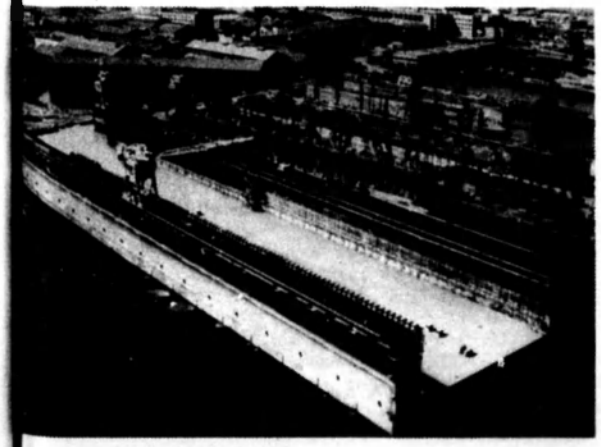
The US Navy has awarded separate competitive nine-month design contracts to four contenders for the advanced Surface Effect Ship (SES) programme. Each will undertake preliminary design and hardware planning for a 2000 ton ocean going SES, capable of speeds above 60kt. The awards went to Aerojet General ($US2,600,000); Bell Aerospace ($3,000,000); Lockheed Missiles and Space Co — whose Shipbuilding and Construction Co, Seattle, is teamed with Hughes Aircraft, Hovermarine Corp and naval architects M. Rosenblatt & Son — ($2,300,000); and Litton Industries — teamed with Rohr Industries and various marine specialist firms — ($2,700,000). The competition is the most ambitious yet for an air cushion vessel, and the aim is for delivery of an operational SES in late 1976. A Litton release says it is expected that the design phase will be followed by the issue by the USN of one or more contracts for the development and construction of prototype ships for final evaluation.

• • •

Largest Floating Drydock

Dwarfing three other drydocks at the Bethlehem Steel Corporation's San Francisco shipyard, is the largest floating drydock in the United States. The huge facility is 900 feet long and has a clear width between wingwalls of 150 feet. With a lifting capacity of 65,000 tons, it is capable of handling ships as large as 230,000 deadweight tons. The dock will readily service the giant tankers that will transport oil from the North Slope of Alaska to West Coast ports. The all-steel drydock was built in quarter sections and then welded together to form the completed unit.

An artist's impression of the new Fast Patrol Boats ordered by Venezuela.



VENEZUELA

Fast Patrol Boats

Until a short time ago there was a "hole" in the Vosper Thornycroft range of fast patrol boat types. To fill this gap, which existed between the 110ft series, which includes the boats built in a variety of configurations for Peru and Singapore, and the 142ft **Tenacity**, now in service with the Royal Navy, Vosper Thornycroft produced a design for a 37m (121ft) FPB — a size felt to be the minimum economic vehicle capable of carrying modern gun and missile armament with its associated radar and fire control equipment.

The wisdom of the move was borne out recently when the Venezuelan Navy placed an order for six craft of this size. It is believed that these craft do not differ greatly from the standard design, as indicated by the accompanying artist's impression, although three are to be designated missile boats and three gunboats.

It is understood that the SSM selected is the Franco-Italian Otomat and that the gun is the Oto Melara Compact. The fire control system will be the NA10 mod 1 by ELSAG (Elettronica San Giorgio) with associated radar by Selenia.

The propulsion plant will consist of a twin shaft, fixed-propeller installation driven by MTU turbocharged and after-cooled diesel engines, type MD 16V 538 TB 90, having continuous/maximum outputs of 3,000/3,600bhp at 1,790/1,900rpm, through MTU type KSS4122 reverse/reduction gearboxes.

MATRA — technically advanced weapon or solutions for the Navy and Fleet Air Arm?

Matra & the Fleet Air Arm Since 1956

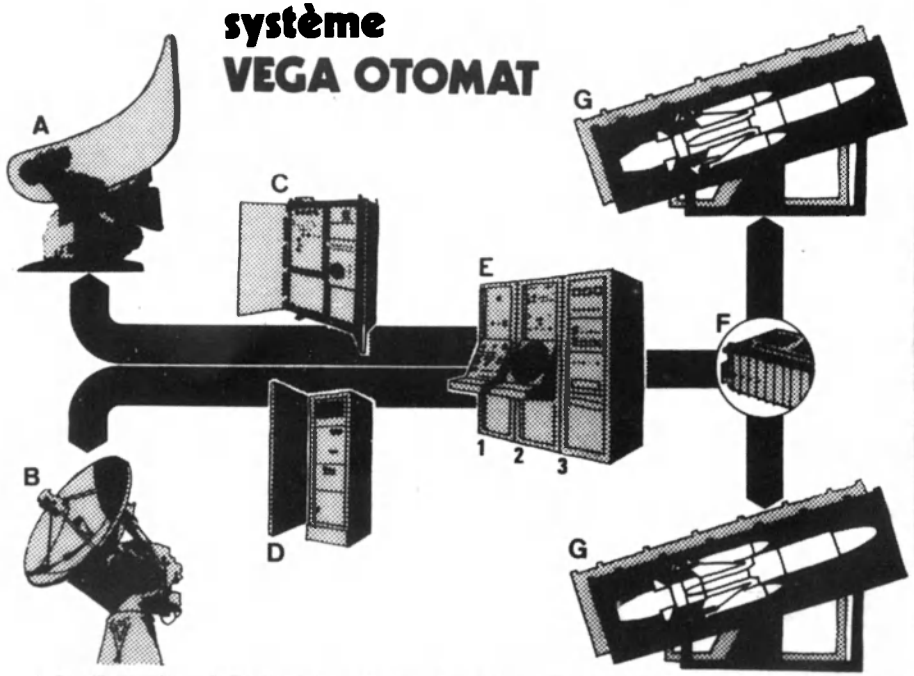
Since 1956, S. A. Engins Matra, a French Company, has not ceased, both in conventional armament as in missiles, to make an active contribution to the equipment of vectors carried by the Fleet Air Arm.

Designed for 3 types of mission dive attack, sea-skimming attack, anti-submarine warfare, the Matra aeronautical armaments — rocket-launchers (37mm, 68mm and shortly 100mm), buoy-launchers, drag-chute bombs, marker-launcher ... adapted to the performances and missions of aircraft, equip the **Corsair, Aquilon, Alizee, Etendard** and **Atlantic** of the Fleet Air Arm.

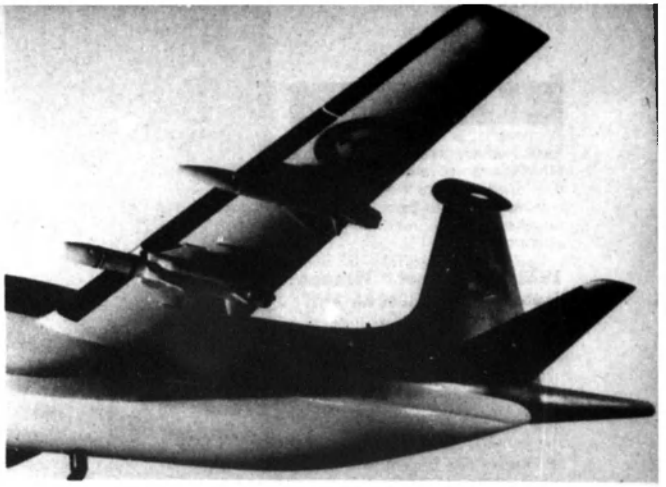
The appearance of Matra 511 air-air missiles in 1960 and the Matra 530 in 1963 allowed the Air Arm to first equip the **Aquilon**, on-board night fighter, then the interceptor F8E (FN) **Crusader**, with the new generation missiles able to attack targets, not only from the rear (Matra 511), but from all sides, including the front (Matra 530). Since 1971, the MARTEL anti-radar missile gives a new effectiveness to aircraft of the **Jaguar** and **Atlantic** type. Today, by the development in close co-operation with the Air Force and the Fleet Air Arm of the 550 MAGIC, Matra will give on-board fighters, from 1974 (**Crusader** and successor to the **Etendard**), unequalled performances for interception and aerial combat.

1967, A Turning Point for Matra — Missiles for the Navy

In 1967, the French Defence Ministry asked Matra to place its industrial experience at the disposal of the French Navy to apply it to the latest self-guided version of the surface-air missile MASURCA. Without changing the technical concept of the missile, developed by the Ruelle Arsenal, Matra ensures with this establishment a co-prime contractorship to complete its development, then its series production in 1971. For three years, Matra was entrusted with the studies of the MANDRAGORE missile which were unfortunately halted in 1969 due to the lack of finance.



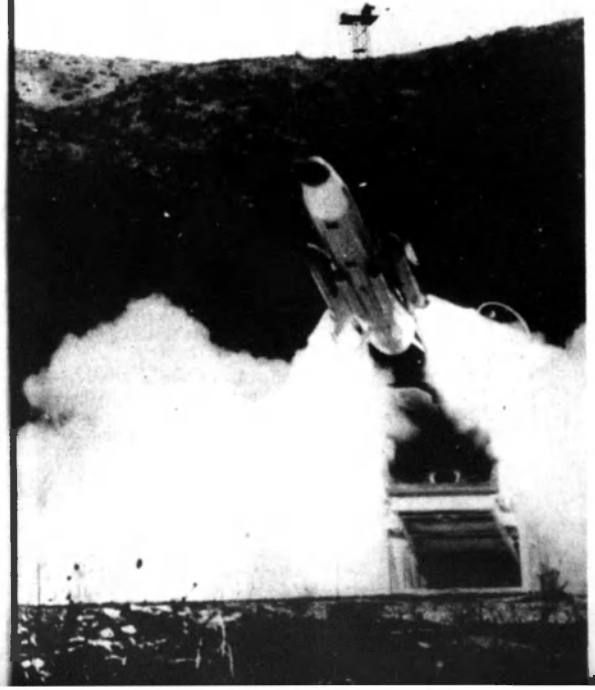
A. Surveillance radar — B. Tracking radar — C. Transmitter receiver — D. Transmitter Receiver and Servo System — E. (1) OTOMAT and weapon console (2) Surveillance and Target Designation Console (3) Fire Control Console — F. Launch Sequencer — G. 4 OTOMAT Containers.



A super weapons system for the Fleet Air Arm.

Adaptation of the OTOMAT to the aerial platform, besides facilitated by the relationship to MARTEL and its anti-radar version, has given rise to detailed studies, in particular for the ATLANTIC and the maritime fighter aircraft. This new offensive capacity (MARTEL-OTOMAT) will revolutionise maritime patrol and anti-surface fighting.

First complete firing of the OTOMAT — the guided missile made IMPACT at its end of trajectory.



1970, a New Stage in Naval Tactics

OTOMAT made its first appearance at the 1970 Naval Exhibition. A missile utilisable from many types of platform, a very long range missile (up to 80km with a possible extension to 200km) and with a large military war-head (210kg). OTOMAT has retained the attention of almost all the naval staff of the whole world. Its development progressed steadily and after one year (February 1971-February 1972), had passed from the first wind-tunnel tests of the propelled mockup and the first complete guided firing of the missile with target impact.

The system study has progressed in a realistic and satisfactory fashion. The interface with the Thomson-CSF-Vega firing operation has been entirely defined.

The mobile system, based on land, had been developed speedily at the request of several potential customers. Adaption to the platform: helicopters or aircraft, besides

facilitated by the relationship to MARTEL in its anti-radar version developed by Matra, has given rise to detailed studies in particular for the Atlantic and the maritime fighter aircraft.

1972, a Super Weapons System for the Fleet Air Arm

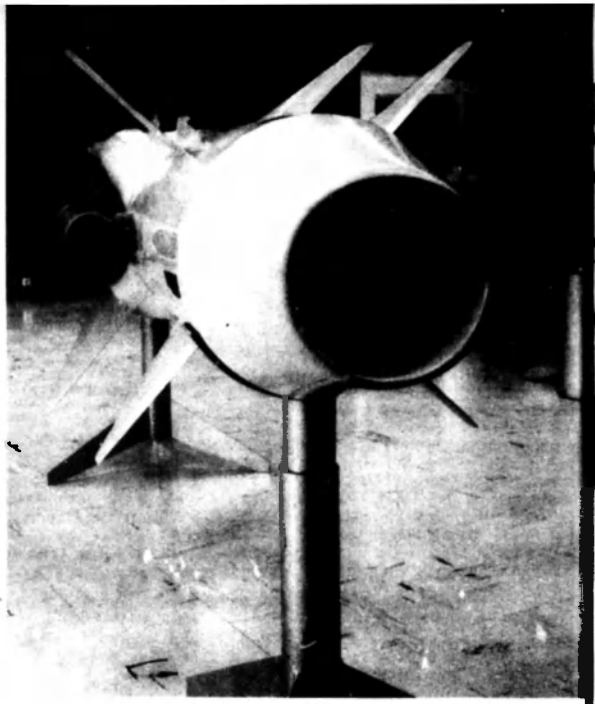
Thus OTOMAT presents itself as a system capable of radically changing armaments and tactics. In particular, it brings to the Atlantic an offensive capacity which will revolutionise maritime patrol and anti-surface fighting.

Many observers feel that OTOMAT, an entirely new system with a long future ahead of it, since it is the generation which currently takes the lead, deserves to be consecrated by a choice. Its direct competitor, HARPOON, will moreover be operational only four years after it.

Taking Stock after the First Complete and Entirely Successful Firing

A first complete firing of the Matra and Oto Melara anti-ship missile OTOMAT was carried out on the 28th February, 1972, from the Salto di Quira firing range in Sardinia. This firing was entirely successful.

The guided missile made **IMPACT** at its end of trajectory on a ship located several score kilometers away.



An air-to-sea version of the OTOMAT missile.

The French and Italian Companies Matra and Oto, Melara have succeeded, in record time, in developing the OTOMAT, an anti-ship and coast-to-ship missile of a range unequalled in the Western World.

This all-weather system may be launched from all types of platforms: naval (ship or fast patrol boats), aerial (helicopters or aircraft), and land-bases (fixed or mobile).

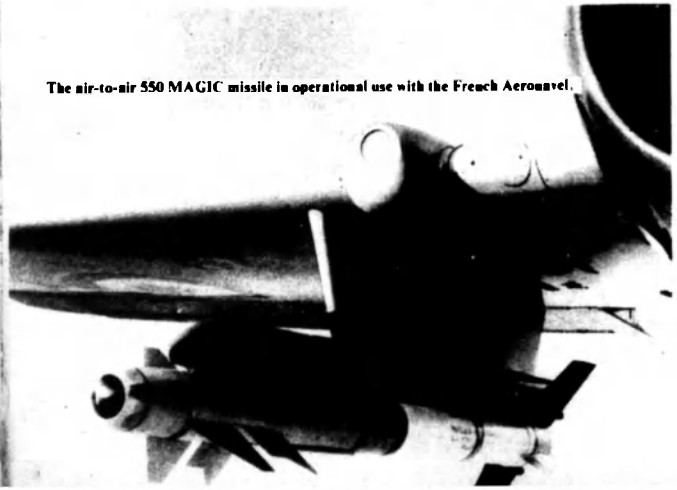
An Advanced Design and a New Efficacity

The present range is from 60 to 80km, but the fuel tank allows a much greater autonomy; the OTOMAT has in fact been designed to reach targets located well beyond a ship's radar horizon.

After having left its launch ramp, the missile follows a skim-level trajectory during a pre-guidance phase, towards the position shown by the surveillance and target acquisition radar, and by the fire control unit.

The homing head takes over the missile guidance at the end of the launch phase. The missile then flies along a special pre-programmed trajectory, assuring a target impact.

The air-to-air 550 MAGIC missile in operational use with the French Aeronavel.



Transporting the OTOMAT missile.

MATRA

The guidance is optimised to achieve a bulls-eye and in consequence warhead detonation does not require a proximity fuse.

Through its very short reaction time and its great gyrodeflection capabilities (ie, the mother ship can be in any position relative to the target at instant of missile launch), the OTOMAT introduces a new dimension in naval tactics.

Development

The various system equipments are defined; their development is practically completed. The flight tests of the various steered models and guided missiles have provided a confirmation of:

—The validity of the technical solutions chosen both for the missile and for the systems: launch container, computer, firing sequence unit.

The development programme will continue with various missile firings under conditions stipulated in the technical clauses governing the use of the OTOMAT system, during 1972 and early 1973. The development programme will be immediately followed by a phase of launches from ships carried out by the Italian Navy in 1973.

The OTOMAT will arm the fast patrol boats of the Italian Navy, currently under construction. A large number of other Navy Service Chiefs have evinced a great interest in the system.

The OTOMAT system continues to arouse considerable interest from all Navies, Fleet Air Arms and Coastal Defence Forces the world over.

General Organisation

The Design Leadership functions are assured by a mixed Matra/Oto Melara committee. The development and production activities are split up between the two Companies; Matra has made its vast missile experience available for the synthesis.

Description

The OTOMAT missile features a cruciform wing and four aerodynamic fins in the same plane as the wings.

It is fitted with four air intakes feeding the Turbomeca turbojet during the cruise flight, and with two lateral solid propellant boosters for firings from ships or helicopters.

OTOMAT is equipped with an active, all-weather Thomson-CSF homing head. An inertial platform assures the missile's initial navigation phase, ie, skimming over the waves thanks to a precision radio altimeter. The warhead is a semi-piercing charge weighing more than 200kg. The incendiary effect of the remaining fuel must be added to the destructive power of the warhead.

V — AERODYNAMIC AND WEIGHT CHARACTERISTICS

Total missile length	4.82m
Front diameter	0.40m
Rear diameter	0.46m
Span	1.19m
Weight: naval, helicopter and land-based version, about	700kg
aircraft version	less than 550kg
(with this last version, the boosters are suppressed)	

The missile is delivered in a container serving for the launch. Its ramps are fixed. The weight of the missile container assembly does not exceed 1250kg. The OTOMAT missile can adapt itself to any type of surveillance radar and fire control system.

SEA CADET CORPS NEWS

NEW SOUTH WALES Quarterly Report of Proceedings

This report covers the period 1 October to 31 December, 1972, and covers Continuous Training, Weekend Training and other activities carried out by the Naval Reserve Cadets in New South Wales.

Continuous Training was carried out at Snapper Island from 22 November to 1 December, for 35 personnel from Scots College. In addition, Continuous Training was carried out for 173 personnel from 13 to 23 December in HMA Ships **Albatross, Duchess, Melbourne, Torrens, Waterhen** and **Watson**; from 14 December to 23 December for 44 personnel in HMAS **Nirimba** and from 16 December to 23 December for 26 personnel in HMAS **Creswell**.

Weekend Training took place in the following HMA Ships and Establishments:—

Ship/Establishment	Dates	No of Personnel
HMAS **Duchess**	28-30 October	23
HMAS **Torrens**	24-26 November	23

The Deputy Senior Officer represented the Senior Officer at the Annual Passing-Out Parade of Cadets from Sydney Grammar School on Friday, 13 October.

The Senior Officer was the Official Guest at the Combined Ball of TS WARREGO and TS PARRAMATTA held on Saturday, 14 October.

The new Unit building for TS CONDAMINE at Manly Vale was officially opened by the Senior Officer on Saturday, 21 October.

Cadets from all Metropolitan Units took part in the Annual Seafarer's Service conducted in St Andrews Cathedral on Sunday, 22 October, the Senior Officer being represented by the Deputy Senior Officer.

A Mess Dinner was held on Saturday, 2 December, to farewell those officers retiring on reaching the age limit. The officers are Lt Cdr D. Lindsay (TS ALBATROSS), Lieut A. Reeve and Lieut A. Stevenson (TS SIRIUS). These officers will retire on 31 December.

In view of the Naval Board decision to phase out the rank of Chief Petty Officer Instructor, two CPO Instructors have elected to retire and promotional Boards have been conducted in HMAS **Watson** to determine the suitability for promotion of all other CPO Instructors. Recommendations have been made for the promotion of five CPO Instructors to Sub-Lieutenant from 1 January, 1973.

The strength of the New South Wales Division is at present:

Staff Officers	4
Honorary Chaplains	2
Officers	32
Instructors	29
Cadets	390

L. MACKAY-CRUISE, Commander, RANR, Senior Officer.

TASMANIA

NEW LIFE AHEAD

Eight months ago the **Reginald M** was a candidate for the scrap heap.

Now with 57 enthusiastic West Coast sea cadets swarming over her old planks, the 87ft ex-explosives tender is assured of a long life.

Now named TS **Macquarie**, the ketch was officially blessed last December as the flagship of the State's newest sea cadet unit.

The cadets and their instructors have been working on the boat between drills every weekend for seven months since it was bought from the Mt Lyell Co.

AT FIVE KNOTS

With the assistance of carpenters Cliff Lovell and Ralph Langdon, the unit has repainted part of the hull, the boom, and the steering gear.

Rusting pumps and anchors are also being refurbished and rotting rigging has been replaced under the guidance of sailing master, Mr M. Minchin, of Zeehan.

The ketch has a complete set of sails and its 85hp engine pushes it along at a steady five knots.

The large hold, which once transported explosives from ships in Macquarie Harbour to the Regatta Pt wharf at Strahan, is being converted to sleeping quarters for the cadets.

Mr R. C. Boyd, the unit's commanding officer, said the hull was in good order, although the vessel had not been slipped.

SHAKEDOWNS

Despite prophesies of doom, the TS **Macquarie** has performed well in a series of shakedown cruises on Macquarie Harbour.

The cadets spent a weekend aboard after Christmas — their first overnight stay on their flagship.

Two Sabots are being used to teach the cadets the fundamentals of sailing before the vessel takes its first cruise under sail.

They are also being instructed in first-aid, swimming and sailing theory, and each has been issued with a life jacket.

Several instructors also lend their runabouts and dinghies during the weekends to round off the training programme.

The cadets are drawn from Queenstown, Strahan, and Zeehan, and after a trial period the unit will receive Naval Board recognition.

SOUTH AUSTRALIA

The Training Ship **Adelaide** has won the Navy League of Australia Trophy for the most efficient Sea Cadet Unit in Australia.

The trophy is awarded annually to the Sea Cadet Unit judged most efficient by the Royal Australian Navy.

TS **Adelaide**, situated at HMAS **Encounter**, Birkenhead, is commanded by Lieutenant Commander M. Koch, who has under him five officers, four instructors and 75 cadets.

The trophy is in the form of a shield embossed in silver and gold and was first awarded in 1959.

Report Presented by the President to the

ANNUAL GENERAL MEETING

of the Navy League of Australia (Victorian Division)

29 NOVEMBER, 1972

Ladies and Gentlemen.

This report will be a fairly short one, but I would hope that you will shortly receive a second report which I have made, wearing my "hat" as Federal President of the League. This will refer to matters which concern all members of the League, irrespective of the State in which they reside, and I don't think you would wish me to waste your time by referring to them twice.

The year under review has been a busy one for a number of members, in the main those who form the various committees — the Ladies' Committee, the Younger Set, the Sea Cadet administration, and the two "study groups" formed in this Division to take a particular interest in Naval Defence matters, namely the DDL project and Armed Services integration.

I regret that too few members are directly involved in these activities, but on the other hand membership of the Division has increased, mostly by word of mouth, so one must assume that you approve of what we are doing and it is encouraging to think that we can fall back upon your support.

Although we have more members, unfortunately we have much less money. Membership fees have not in the past been a major factor in our income, this being derived from the annual ball, one or two other functions and donations. Increased costs have had a drastic effect on ball proceeds and income from this source has decreased from approximately $1900 in 1968, to about $800 this year. There is a point beyond which it becomes difficult to increase admission charges and it is not much consolation to think that other organisations largely dependent upon this kind of function for revenue, are having the same problems: The future of our annual ball is questionable.

Donations have to some extent been effected by premature publicity given to an increase in Naval assistance to the Sea Cadet Corps. Our main requirements for cash — administration and building works — at this time are the same as ever; in fact, they are greater than before as Portland requires a completely new building which we cannot finance.

I would be grateful if every member would not only take note of our financial situation as depicted in the balance sheet presented with this report, but actively pursue ways of increasing our income.

In concluding this report, I express appreciation to our Secretary, Miss Shorrocks, who has been caught-up in the financial draught; to Mrs Trevor Hatfield and the Ladies' Committee who are making great efforts to stop it, and to Mr Andrew Roberts and the Younger Set who, apart from their financial assistance, are making the name of the Navy League well known in visiting Australian and foreign naval ships.

F. G. EVANS,
President.

JOIN THE AUSTRALIAN SEA CADET CORPS

If you are between the ages of 13 and 18 years

The Australian Sea Cadet Corps is a voluntary organisation administered by the Commonwealth Naval Board and The Navy League of Australia.

The aim of the Australian Sea Cadet Corps is to provide for the spiritual, social and educational welfare of boys and to develop in them character, a sense of patriotism, self-reliance, citizenship and discipline.

Uniforms are supplied free of charge.

Cadets are required to produce a certificate from their doctor to confirm they are capable of carrying out the normal duties and activities of the Cadet Corps. If injured while on duty, Cadets are considered for payment of compensation.

Parades are held on Saturday afternoons 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 Sea Cadets in Naval Establishments, 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.

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

Senior Officers, Australian Sea Cadet Corps

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NORTHERN TERRITORY: Mrs V. M. Slide, 12 Allen Street, Fannie Bay, 5790.

TO: The Senior Officer,
Australian Sea Cadet Corps.

I am interested in joining the Australian Sea Cadet Corps and would be pleased to receive further information.

NAME.....

STREET.....SUBURB.....

STATE OR TERRITORY.....POSTCODE.....

PHONE No.....AGE.....

(Please Print Clearly)

Please address your envelope to the Senior Officer in your State or Territory — see list of addresses above.

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THE Navy

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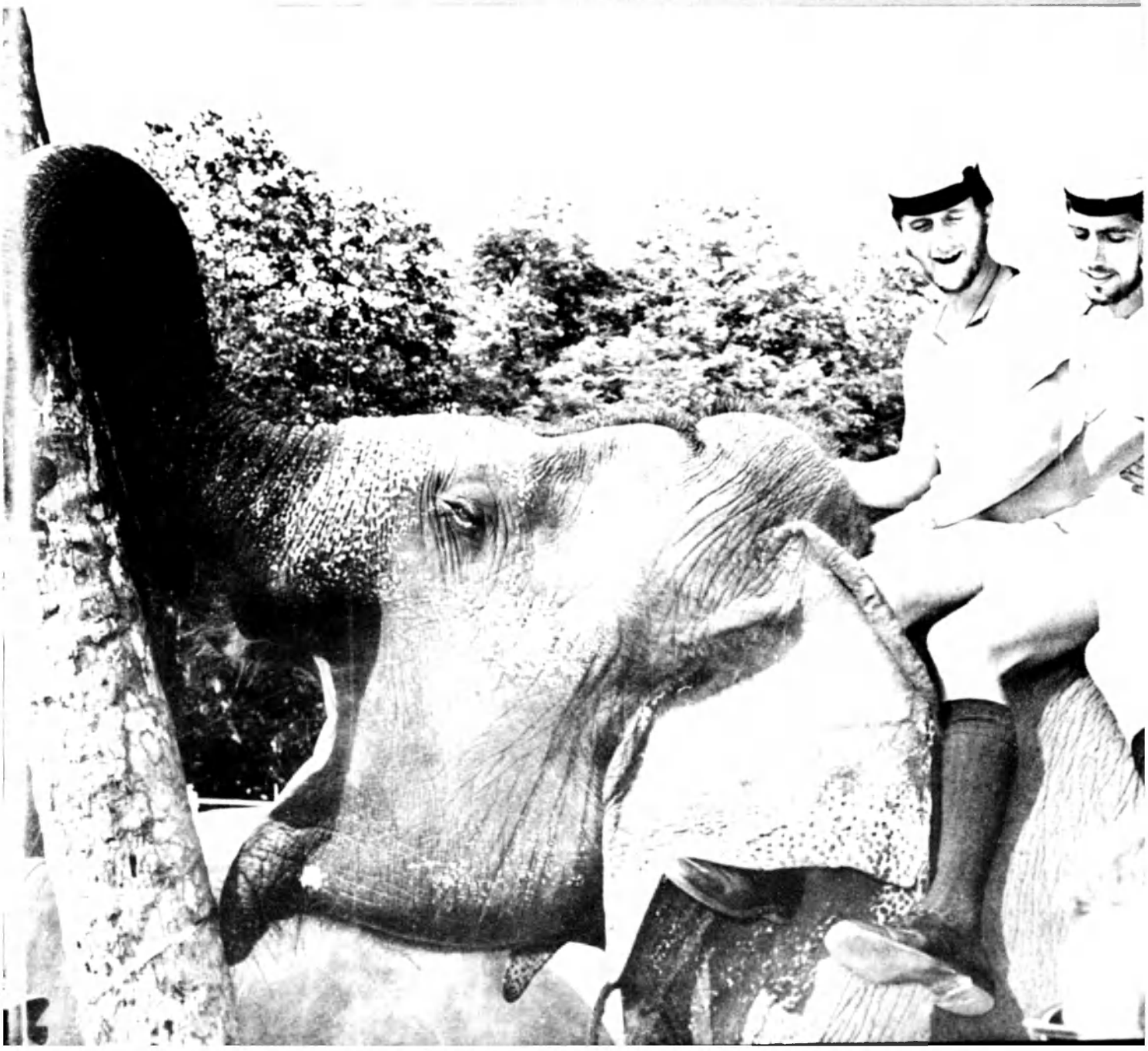

THE NAVY

The magazine of the Navy League of Australia
Registered for posting as a periodical — Category A

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PLUS SUNDRY STORIES AND PHOTOGRAPHS

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Australia's Maritime Airpower

HMAS MELBOURNE, flagship of the Royal Australian Navy since 1956.

The current deliberations of the Maritime Air Study Group, and the necessary decision regarding a replacement for HMAS MELBOURNE, have recently attracted widespread comment in the media. The subject can be expected to attract further comment when the Government's strategic review is completed. What maritime airpower we have now, the reasons for needing to replace HMAS MELBOURNE, and possible replacements, are all matters of great significance to Australia.

At present, Australia's maritime airpower is comprised of the support aircraft carrier MELBOURNE, her alternative aircraft complements, other naval aircraft, and the RAAF's long range maritime patrol aircraft.

HMAS MELBOURNE herself was completed in 1955, having been launched ten years earlier. Warships need replacement for two reasons — either because their hulls and machinery are worn out, or because their weapons become obsolete. The former reason is dominant in necessitating the withdrawal of MELBOURNE.

The Fleet Air Arm is comprised of Skyhawk A4G front line tactical strike fighter aircraft, Tracker S2E piston engined anti-submarine aircraft, and Wessex 31B anti-submarine helicopters. Ten Sea King multi-role helicopters have been ordered as the first stage of a replacement programme for the Wessex. The front line Trackers, Skyhawk's and Wessex provide MELBOURNE with two complete complements of aircraft, giving the RAN the flexibility to operate MELBOURNE in the anti-submarine role (with up to 10 Wessex, 6 Trackers, and 4 Skyhawks), or in the support anti-shipping roles with Skyhawks predominating in the aircraft complement. Those aircraft not operating from MELBOURNE can and do

operate from RAN and RAAF shore bases.

Other helicopters operate in auxiliary roles from HMA Ships MORESBY (hydrographic ship), SYDNEY (troop transport) and STALWART (escort maintenance ship), as the need arises. It is intended that the projected PROTECTOR (fast combat support ship) and COOK (oceanographic ship) carry helicopters.

The RAAF operates 10 Orion P3B LRMP aircraft from Edinburgh, South Australia, and 12 Neptune SP2H from a base in New South Wales. The former have to be staged through a base in Western Australia to operate over the Indian Ocean, and the type of aircraft with which to replace the latter is now being considered. In peace time, all these aircraft are operated by the RAAF's operational command, being made available upon request for exercises with naval units. The logic of basing LRMP aircraft in South Australia, instead of in Western Australia, is difficult for the observer to comprehend.

The Hawker-Siddeley Harrier V/STOL Fighter is currently conducting a flying programme equipped with Martel air-to-surface missiles. During the flights, the Harrier has carried the twin Martels through a wide flight envelope and included vertical and short take-offs and landings.

Artist's drawing of the US Navy's LHA, a general purpose amphibious assault ship. Litton Ship Systems, a division of Litton Industries, is designing and building five of these ships for the US Navy. They are being constructed using modular fabrication techniques at Litton's ship production facility in Pascagoula.

The LHA will transport and land US Marine Corps troops and their supporting equipment by air with helicopters and by sea using landing craft and amphibious vehicles it carries in the bottom of the ship and discharges through a huge tail gate in the stern. Armed with both guns and missiles, the LHA can protect itself against attacks from the air, sea, or shore. This highly automated and versatile vessel can also serve as a hospital, supply warehouse and communications centre during military operations or for civilian rescue missions in the event of natural disaster.

The USS TARAWA (LHA-1) and her four sister ships resemble aircraft carriers in appearance with a helicopter flight deck 820 feet long and 106 feet wide. Fully loaded, the ships will displace 39,900 tons and travel at speeds in excess of 20 knots.

The RAN and the RAAF both play a part in providing Australia's maritime air capability, an approach to organisation inherited from Britain. The earlier stages of training aircrew for both services are closely integrated, and the Joint Anti-Submarine School at Nowra caters for the instruction of personnel of both services.

It is important to recognise that neither MELBOURNE nor her possible successors are strategic strike weapons systems. That function will be filled, so far as Australia is concerned, by the RAAF's F111 aircraft. MELBOURNE's successors would have a support and sea control function, the necessity for which is seen and implemented by India, Argentina and Brazil, as well as the United States, Great Britain (in her North Atlantic/European context), the Soviet Union and France.

Australia's own warship design capability may be fully occupied with either the DDL, or modifying an alternative vessel if such is selected, not to speak of successors to the ATTACK class of patrol boats, during the period in which it would be necessary to design MELBOURNE's successor. Therefore, should the new ship be built here or overseas,

she may well have to be built to an overseas design.

At present, it seems three such designs merit consideration. These are:—

Type LHA; Source: USA; Displacement: 39,900 full ld; Speed: 22-24; Missiles: Short range. SCS; USA; 14,000 full ld; 25; Nil; CHA; UK; 20,000 standard; 30; Surface to air, surface to surface.

The LHA (TARAWA Class) are designed basically as amphibious assault ships, incorporating an LSD (landing ship dock) facility. Apart from being too slow, they share with the Sea Control Ship (SCS) the feature of being highly specialised vessels in the manner that a very large navy finds advantageous. Their potential flexibility between the air support and amphibious roles appears attractive, although perhaps it should be tempered with the thought that they could be "jacks of all trades but masters of none". As construction of the first vessel has already started, the design would be proven by the time a type decision is made by Australia. There would be no question of selecting a type "off the drawing board".

The SCS (Sea Control Ship) is still in the design stage, with funding for the first vessel planned to start in 1974. They are smaller than MELBOURNE (it is reported the new vessels will have a full load displacement of 14,000 tons, overall length of 650 feet and be equipped with only one shaft), and slower than the new generation of merchant ships that the RAN could be required to escort. The USN's preference for specialised ships manifests itself again, it being assumed that major missile defence would be provided by escorts.

The CHA (INVINCIBLE Class, known widely as the Through Deck Cruiser) is more expensive than the Sea Control Ship, as would be expected of a multi-role ship, but markedly cheaper than the LHA. The first vessel, HMS Invincible has been ordered, and practical experience of construction would be available in time to be incorporated in MELBOURNE'S successor.

Vertical or Short Take Off aircraft (VTOL/STOL) of the HARRIER type are being considered for all three types. Whilst some observers, particularly in the US Navy, consider these aircraft of limited capability, this is in the strike carrier context. Both the US Marines, and the RAF, find the HARRIER an excellent aircraft in the ground support role. The British are modifying the type for Maritime Work, and the US Navy is adopting a similar approach. It is reasonable to conclude that they will offer a viable maritime tactical aircraft by 1980, when MELBOURNE'S replacement is due.

It must be recognised that, in considering the types of vessels as successors to MELBOURNE, the outside observer is limited by the absence of much vital information, such as radius of action, cost basis, electronic ability and compatibility, and variations in aircraft type complement. Highly technical decisions on type selection must be left to the only body capable of such decisions — the Defence Group of Departments. Suffice it to say that there are at least two overseas types of ship that, with a viable aircraft, could provide a satisfactory basic design for a successor to HMAS MELBOURNE.

HMS TENACITY COMMISSIONED

HMS TENACITY: a recent view taken on sea trials.

HMS TENACITY was recently commissioned in Portsmouth following a refit by her builders, Vosper Thornycroft Limited.

TENACITY was designed and built in 1969 by the South Coast warship specialists as a private venture to demonstrate the company's latest thinking on the larger type of missile-armed patrol boat which has attracted the interest of a number of navies in recent years.

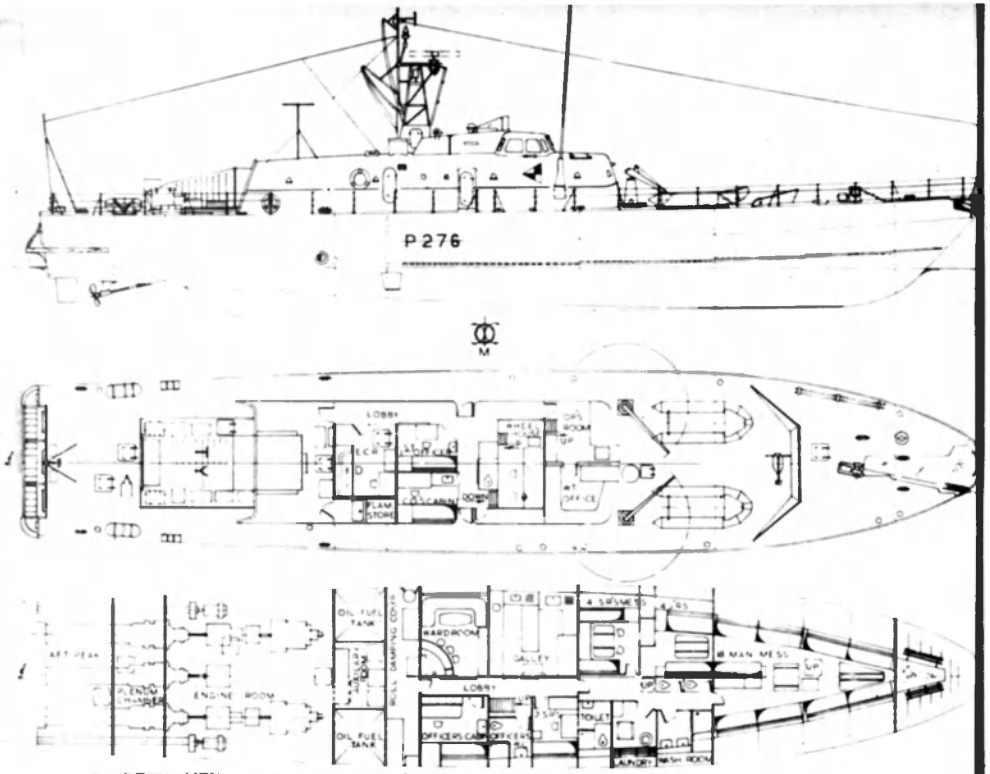
As well as being a company demonstration vessel, TENACITY spent some months operating as a fast patrol boat of the Royal Navy, under charter from Vosper Thornycroft, and the officers concerned commented very favourably on her performance.

It was in January 1972 that it was announced that the Ministry of Defence was to buy TENACITY from Vosper Thornycroft, and that she was to be modified to meet the Service's requirements, in particular for fishery protection duties. This work has now been completed at the builders' shipyard at Portchester.

As used for demonstration purposes TENACITY was fitted with a dummy gun on the foredeck and dummy Seakiller guided missiles aft. The operations room housed a number of console mock-ups representative of the suggested fire control equipment, and dummy fire control radar scanners were fitted to the mast. The crew space forward was left bare. The changes brought about in the course of the recent refit include the removal of all the dummy equipment, the completion of the accommodation to a high standard, while providing for the increased complement of 28-32 necessary for fishery protection duties. A full outfit of navigation and communications equipment to RN requirements has been fitted. Provision has been made for an armament of two light machine guns on the bridge sides and small arms.

The main accommodation changes in the superstructure are that the operations room has been divided by a fore-and-aft centreline bulkhead to provide a separate W/T

HMS TENACITY: operations room with chart table, radar display, log, echo sounder and other navigational equipment.



HMS TENACITY: general arrangement drawing.

office, and a cabin for the First Lieutenant has been worked in next to the Commander Officer's cabin. An officers' toilet has been added on this deck. The machinery control room and wheelhouse are substantially unchanged, while the deck locker in the superstructure, starboard side aft, has become diving and flammable stores.

The deck forward has been recessed to allow the 200lb Meon bower anchor to be self-stowing, and the windlass has been re-aligned to suit this arrangement. Two medium Gemini inflatable boats are now stowed forward of the superstructure, each with its own davit arranged to hinge down for sea stowage. Aft the main changes are the incorporation of stowages for life-rafts, the jettisonable fuel tanks for the Geminis' outboard motors, and the Spate portable general purpose pump. New masts support the communications and radar aerials and scanners.

On the lower deck, where the bulk of the accommodation is situated, forward of the machinery spaces, there is now a cabin for two officers, and a well-fitted wardroom with pipe cot for a fifth officer when necessary. The galley has been enlarged to include the space formerly allocated to galley stores, and equipped to a high standard. Deep freeze and cool storage cabinets have been incorporated. The former radio room has become a mess for two senior ratings, and a laundry with Nyborg washing and drying machines arranged in a store room.

The forward messdeck has been fully fitted out to a high standard for a complement of 18 junior ratings, and the space released by removing the magazine used for an additional mess for four junior ratings and two more heads compartments.

Throughout the accommodation the emphasis is on a high standard of finish with light weight. Most surfaces are of melamine laminate, and minor bulkheads are of sandwich construction with melamine laminate faces. Bins of aluminium alloy are provided for stowage under bunks. Joinery is mainly of mahogany, with panels of light plywood.

The CODOG main propulsion machinery with three Rolls-Royce Proteus gas turbines remains as before, except that provision has been made for local starting in the engine room of the two Paxman cruising diesel engines. A mechanical drive from the main gearboxes has been introduced for the lubricating oil pumps, to off-load the electrical drive when the engines are running. The Rover gas turbine generators have been supplemented by a Foden diesel alternator set rated at 84kW, which can be started by hand in an emergency. An electrical and electronic workshop has been incorporated in the stabiliser machinery compartment immediately forward of the auxiliary machinery space.

HMS TENACITY: communications equipment in the W/T office.

HMS TENACITY: a recent view taken on sea trials.

CONTRIBUTIONS INVITED

The editor invites persons to submit articles, photographs and drawings (black ink) for inclusion in the magazine but regrets that no payment can be made for contributions submitted. Contributions should be addressed The Editor, "The Navy" Box C178, Clarence Street Post Office, Sydney, N.S.W., 2000, Australia.

The Editor does not hold himself responsible for manuscripts though every effort will be made to return those with which a stamped and addressed envelope is enclosed.

OUR COVER

Australian sailors from HMA Ships DERWENT and PERTH, riding an elephant when visiting the ancient city of Kandy, 70 miles inland from Colombo, in Sri Lanka's hill country.

BOOK REVIEWS

WARSHIP MONOGRAPHS

Monograph One — Invincible Class
By JOHN A. ROBERTS
Reviewed by: **GALATEA**
Publisher: Conway Maritime Press Limited

Commonwealth Distributors: Patrick Stephens Limited, UK.

Australian Distributors: Technical Book and Magazine Company Pty Ltd, 289-299 Swanston Street, Melbourne, Vic 3000.

51 pages including numerous photographs and drawings.

Retail price: $5.15 plus postage.

(Technical Book and Magazine Company will be supplying subsequent titles in this splendid series for future review in this magazine. They will include — Queen Elizabeth Class, Arethusa Class and the class of cruisers generally referred to as the "Towns".)

The efficacy or otherwise of the battlecruiser concept has been at once the subject of both vilification and praise ever since Lord "Jacky" Fisher's turbine-like brain spawned his ideas for a totally new type of armoured cruiser over seventy years ago with the help of W. H. Gard, the Chief Constructor of Malta Dockyard. However, their ideas were largely ignored by a conservative Admiralty which continued to authorise the construction of conventional armoured and protected cruisers, thereby adding to the Royal Navy's vast collection of multi-classed commerce guardians.

It was not until Fisher became First Sea Lord in October 1904 that he and Gard were able to implement their carefully nurtured plans for new construction; albeit not without considerable opposition, both well-intentioned and ill-informed.

On 10 February, 1906 HMS DREADNOUGHT, the first of Fisher's great steel progeny, was launched at Portsmouth Dockyard after a gestation period of only one hundred days. When fully appreciated, the special features of this extraordinary battleship staggered the naval world and placed fear in the hearts of many.

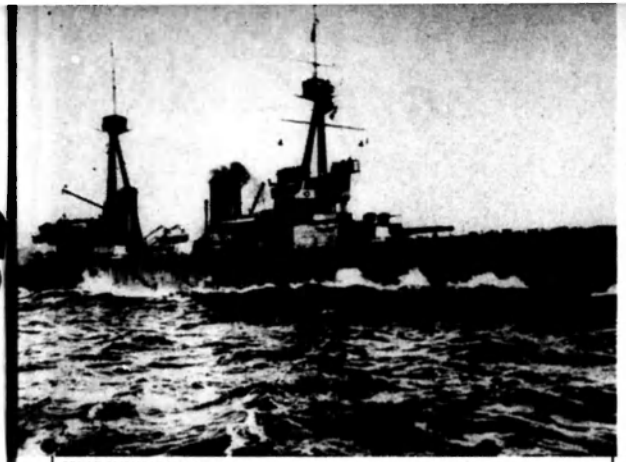
Not content with this achievement, HMS INDOMITABLE, the first of Fisher's dream cruisers, slid into the Clyde from Fairfield's Shipyard on 16 March, 1907. Her two sisters INVINCIBLE and INFLEXIBLE followed her into the water from Armstrong Whitworths and John Brown's yards on 13 April, and 26 June, respectively. INVINCIBLE was completed first on 20 March, 1908, and gave her name to a class of three British vessels which, in many men's eyes, were "the most intimidating, awe-inspiring and magnificently romantic class of warship ever conceived".

John A. Roberts, author of INVINCIBLE CLASS has accorded excellent treatment to this trio. He has more than adequately covered the pre-conceptual ancestry of the class which were originally referred to by the old term "armoured cruisers". However, at the risk of seeming to be a pursuer of pettifogging detail, I was surprised to find no mention of the early (circa 1883) Italian battleships LEPANTO and ITALIA, which sacrificed armour protection for a (then) high maximum 18 knot speed. The 11,800 ton, 20 knot light battleships HM Ships SWIFTSURE and TRIUMPH (completed 1904 for Chile) were other examples of independent minds making of these two ships inadvertent precursers of the battlecruiser. One only has to examine details of their speed, great length and relatively light construction to see how such a comparison is made valid.

The written information is exceptionally complete and in many instances actually exceeds the scope of BRITISH BATTLESHIPS by Oscar Parkes; the work which is usually regarded quite correctly as the final authority on the development and history of British-built line-of-battleships. The reader is given detailed tonnage breakdown figures: information is offered as to the number, type, length and power unit (other than sail or oars) of the ships' boats together with the fact that six small 14-inch torpedoes were provided for use with the 50-foot steam pinnaces. Individual ships' trials performances are also discussed and tabulated; the excellent figures obtained being largely the result of their revolutionary steam turbine machinery; a feature this class shared with HMS DREADNOUGHT.

A complete description is given of the ships' armament. If one was to ignore all other factors, it would be the very heavy main battery of eight 12-inch 45 calibre rifles in four twin turrets which would set the three ships apart from even the largest preceding armoured or protected cruisers.

The book is laced with many good quality line drawings. Of particular interest are those on the page which illustrates the preliminary design history of the class. The most striking features here are the varied and oftimes quite unorthodox proposed main armament layouts. There are several very detailed transverse section diagrams taken at selected key frames along the hull; and spread across pages 32-33 — the finest full broadside scale plan of INVINCIBLE I have ever seen. The many photographs taken at various stages in the ships' careers are of good quality and show originality in their choice. The angles are pleasing and some of the pictures are quite rare.



HMS INVINCIBLE, name ship of the class of British Battle Cruisers, she was sunk at Jutland.

Each ship's individual career has been laid out in the style of chronologically ordered headings. Notes on their war service include the three principal battles in which they were involved; namely Falkland Islands, Dogger Bank and Jutland. Contrary to what many may think, I do not believe the so-called Battle of the Falkland Islands to be an action deserving of fame for INVINCIBLE (Admiral Sturdees' Flagship) and INFLEXIBLE although, I hasten to add, this is not intended as a reflection on the ships themselves.

That Sturdee was a fine seaman remains undisputed; however as a Flag Officer his talent for tactical expertise remains highly questionable. His quarry off the Falkland Islands were principally two, 8.2 inch gunned armoured cruisers, to wit: SMSs SCHARNHORST (Admiral von Spee) and GNEISNAU. The fact that these two fine vessels were the crack gunnery ships of the (German) East Asiatic Squadron was quite incidental.

Sturdee, with sixteen 12-inch guns at his disposal, allowed himself to be tactically outfoxed by the brilliant von Spee who not only managed to survive for over three hours before he and his two largest ships were inevitably hammered to the bottom, but whose gunnery officers actually landed three shells on INFLEXIBLE. These did little harm; however the Flagship INVINCIBLE was hit twenty-two times, including twice below the waterline, and they did real damage. British casualties were extremely light, but their performance was deplorable; each battlecruiser expending over 600 rounds of 12-inch ammunition out of 640 carried.

If, to judge only by his poor shooting, Sturdee had actually exhausted his heavy calibre ammunition prior to inflicting grievious damage upon his foe; it is quite conceivable that von Spee could have escaped. The resultant propaganda advantage to Germany would have been incalculable and not only Sturdee, but his hitherto untried ships would have been discredited.

Purely on a ship-for-ship basis, the "battle" was an unequal contest which Sturdee should have won hands down. To balance the picture, I feel a fair comparison could be made between this action and the Battle of the River Plate fought during the Second World War. In each case, the qualities of the opposing commanders was the key factor in deciding the issue. Likewise, in each instance, there existed a great disparity in gun calibre between the opposing forces. But at the River Plate the side with the lesser fire-power per gun carried the day. At the Falkland Islands, Sturdee won through sheer weight of metal and not by any inherent mental ascendancy over von Spee.

Near the end of the book the author draws certain conclusions which I am sure will, once again after seventy years, provoke more than a modicum of debate. When one bears in mind the various original formulae for battle-cruiser construction, I feel the author is being less than worthy of the remainder of his book when he states that "the terms of the engagement" (between two such similar vessels) "would be something like those for Russian Roulette". This is altogether too basic and does not take into account such variables as gun-barrel wear, the condition of boilers and propelling machinery, the degree of marine growth on the hull, crew morale, and the quality of the commanding officer. Lesser factors than these have caused actions to be either won or irretrievably lost.

I find very little to criticise in this book, whose contents are of overall good quality. It is clearly printed on high grade art paper which, however, is sadly degraded by the absolute flimsiness of the cover. This consists of a heavy grade white card around which is wrapped a normal dust jacket. It seems incredible, but this jacket is actually attached to the inner surfaces of the card cover both at the front and back of the book by what appears to be cellulose tape. I sincerely hope such binding is not standard practice for this book as it dulls the edge of an otherwise very fine effort. I wish it success.

THE FIREFLY FLIES AGAIN

Saved from the scrap heap, Firefly Mark five WB 271. Captain Keith Leppard, RN, Commanding Officer of the Royal Naval Air Station, YEOVILTON is handed first-day covers to mark the Firefly's first flight from Heathrow to Yeovilton 30 years ago. WB 271, brought back to flying condition, repeated the flight during March, 1973.

by
Lt Cdr Michael Apps
Operations Officer, Royal Naval Air Station Yeovilton, Somerset, England

It was in December, 1941, only two weeks after Pearl Harbour, that the first Firefly appeared in the sky over Britain — a fast, two-seat fighter-reconnaissance aircraft powered by a Rolls-Royce Griffon engine and armed with four 20mm cannon.

Built by Fairey Aviation from a design by Mr H. E. Chaplin, the Mark One Firefly was intended for the British Fleet.

At this black moment in World War II it could hardly have been foreseen that the Firefly would be the first British aircraft to fly over Tokyo or that it would go on to 13 years of great service with the Fleet Air Arm.

So successful did it later become that more than 1700 of different Marks were built.

Fireflys took part in strikes against the German battleship TIRPITZ and against the Japanese-held oil refineries in Sumatra. Their usefulness did not end with World War II. They went on to fight in Korea and against the bandits in Malaya.

THE MARK FIVE

The first production Mark One had flown from London's Great Western Airfield (now Heathrow) to the Royal Naval Air Station (RNAS) at Yeovilton in the west of England on 4 March, 1943.

At Yeovilton in 1948, 814 Naval Air Squadron received the Mark Five. In July 1949 it received one particular Mark Five which has since become rather famous — WB 271. She remained with the Squadron until May 1950 and was operated aboard the Light Fleet Carrier HMS VENGEANCE.

Mark Five Fireflys were in action during the Korean War in 810 (HMS THESEUS), 812 (HMS GLORY), 817 (HMAS SYDNEY), 821 (HMS GLORY), 825 (HMS OCEAN) and 827 (HMS TRIUMPH) Squadrons. They were also used in action in Malaya.

By this time WB 271 had been transferred to the Royal Australian Navy at RNAS Sembanang (Singapore). Her Korean service was done with HMAS SYDNEY. For 12 years WB 271 operated from Naval Air Station Nowra, for the last three years on Target-towing duties.

SAVED FROM SCRAPHEAP

Then, in October 1966, 814 Squadron found her again. As Commanding Officer I landed our Wessex helicopters at Bankstown airfield near Sydney, NSW.

They had just completed a combined RN/RAN helicopter flypast over the city from the aircraft carriers HMS VICTORIOUS and HMAS MELBOURNE prior to the Fleet visit on 25 October, 1966.

I noticed that six RAN Firefly Mark Five aircraft were parked on the grass along with an assortment of other old "hulks". These aircraft were the last six to be used in the Royal Australian Navy, were now surplus and had been turned over by the Navy to the Ministry of Supply for disposal. In fact they were up for sale and the closing date for tenders was 20 November, 1966.

Close inspection revealed that one of them, WB 271, was in an exceptional condition and capable of being flown almost there and then.

This factor, coupled with the fact that military aircraft cannot be purchased for civilian use and thus are invariably sold for scrap, gave rise to an idea.

I thought it would be nice to try and save the best of the aircraft, take it back in HMS VICTORIOUS and present it to the Fleet Air Arm Museum. Ours had been the first naval squadron to be equipped with the Firefly Mark Five, closely followed by 816 Squadron of 20th CAG.

This was the first RAN unit which formed up at Eglinton in August 1948 before embarking in HMAS SYDNEY in 1949 for Australia.

BACK HOME

Long negotiations with the Australian authorities finally ended in success and the aircraft was purchased for $A400 and paid for by officers of HMS VICTORIOUS, assisted by a donation from aviators of the Royal Australian Navy based at Nowra.

HMS VICTORIOUS took WB 271 on board and the aircraft was presented to the Fleet Air Arm Museum in 1967, where she remained as a ground exhibit for the next four years.

The fact that the aircraft was in such good condition and that her partner, the Sea Fury had been rebuilt to Flying condition, caused the Commanding Officer of Yeovilton to have the Firefly thoroughly overhauled and brought to a flying state. On 2 October, 1972 all was ready for WB 271 to take to the air on her first official flight. It was, appropriately enough, the 29th anniversary of the formation of the first Firefly squadron.

Perhaps her moment of glory came when she flew from Heathrow Airport to Royal Naval Air Station Yeovilton on 4 March, 1973. This nostalgic flight marked the 30th anniversary of the flight of the very first production Firefly (Z1830) from Fairey Aviation Great Western Airfield to RNAS YEOVILTON.

Piloted by Captain Keith Leppard, RN, Commanding Officer of RNAS YEOVILTON, and with myself as observer, WB 271 carried commemorative stamp covers to mark the occasion. This veteran Firefly has attracted much publicity by both Press and television and we hope it will be seen at air displays around Britain for many years to come.

"The Civilian Arm of the Navy"

The principal objective of the Navy League of Australia is to stress the vital importance of Sea Power to the Commonwealth of Nations and the important role played by the Royal Australian Navy.

The League supports the Naval Reserve Cadets who are administered by the Royal Australian Navy, which Service provides technical sea training for boys who intend 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 Service.

We invite you to swell our ranks and so keep up to date with Maritime Affairs to help to build an ever-increasing weight of informed public opinion. The Navy League will then become widely known and exercise an important influence in the life of the Australian Nation.

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".

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THE NAVY LEAGUE OF AUSTRALIA

Application for Membership

To: The Secretary,
The Navy League of Australia,
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Enclosed is a remittance for $4.20 being my first annual subscription.

AFTER COMPLETION, THIS FORM SHOULD BE DISPATCHED TO YOUR DIVISIONAL SECRETARY — NOTE LIST OF ADDRESSES ABOVE

As the commissioning ceremony (pictured) was performed for the new survey ship HMAS FLINDERS, workmen put finishing touches to the rebuilt Daring class destroyer HMAS VENDETTA (background) which recommissioned into the Navy on 2 May. On the dais for the commissioning of the 750 ton FLINDERS is, from left, Chaplain H. Jamieson, Lieutenant Commander Ian Pullar, commanding officer, and Father K. Ryan.

HMAS Flinders is Commissioned

HMAS FLINDERS, the Navy's new hydrographic survey ship, was commissioned into active service with the RAN on 27 April, 1973 at the Williamstown Naval Dockyard, Victoria.

FLINDERS was launched on 28 July last year by Mrs Ruth Mackay and was the first major ship to be launched in Melbourne for almost five years.

During the ceremony, Lieutenant Commander Ian S. Pullar, RAN read out the ships commissioning warrant. Then the Merchant Marine "Red Duster" was lowered and the White Ensign hoisted.

Sea trials for HMAS FLINDERS commenced on 7 May, and her 30-day shakedown and work up cruise on 29 May, with a local survey of areas in Bass Strait.

Near the end of August, ship and crew will sail for their home port of Cairns. Her first mission will be the re-charting of important sea lanes around Northern Australia and New Guinea.

FLINDERS' keel was laid in February 1971. She is powered by two Paxman Ventura diesels that give her a cruising speed of around thirteen knots and a range of about 5000 nautical miles.

The 161 foot FLINDERS has a displacement of 800 tons and a ship's company of thirty-seven men.

FLINDERS is fitted with electronic "black boxes" to assist with surveys. She is permanently fitted with distance-measuring, deep echo and normal echo sounders, radar and sonar.

She may be fitted with satellite navigating equipment for special duties. This unit will be in component form so it can be switched from FLINDERS to MORESBY, depending on each ship's individual missions.

FLINDERS' precision radar is accurate to within ten yards at a range of from twenty to thirty miles. Another "black box" will be accurate to within a few feet at a distance of up to fifty miles.

She is fitted to work with helicopters although she does not herself carry one.

FLINDERS has one 34 foot aluminium survey boat and two 17 foot aluminium run-abouts for shore party use.

FLINDERS is designed to set up and maintain three shore camps and one tide-reading camp while still being able to carry out normal every-day running of the ship.

She is air conditioned throughout. Not only does this mean more comfort to sailors in hot and humid tropical weather, but electronic gear will give better service and have longer life.

Heavy seas will not bother FLINDERS as much as another light ship, as she is fitted with stabiliser fins — one on each side — to reduce roll.

Newly designed living spaces aboard will make the sailors' long absences from shore easier. Officers and Chief Petty Officers have single berth cabins. Petty Officers will be bunked in double berth cabins and sailors will have two messes that could contain 15 men each.

The vast areas to be surveyed by the RAN Hydrographic Service include some 16,500 miles of coastline and a continental shelf that extends, on the average, about thirty miles.

Charting Australian waters is a large responsibility with the Gulf of Carpentaria alone approximately the same size as the North Sea, and much greater in area than the Baltic Sea.

About one-third of Australia's area of responsibility has been chartered by modern survey methods, while the remaining portions are still based on old surveys.

FLINDERS will play a large part in the coming years' surveying. Her expected output will by far exceed that produced by the now decommissioned PALUMA and in addition her superior sea keeping qualities will enable her to work in more remote and exposed areas.

HMAS FLINDERS — working in association with HMAS MORESBY — will play her part in fulfilling the Royal Australian Navy's responsibility for charting and survey work for more than one-seventh of the earth's total surface.

HMAS FLINDERS, the RAN's new hydrographic survey ship, was commissioned on 27 April, 1973 at the Williamstown Naval Dockyard, Victoria. Our picture shows the Deputy Prime Minister and Minister for Defence, the Honourable Lance Barnard talking with Lieutenant Commander Ian Pullar, RAN, FLINDERS' commanding officer.

CHANGE OF ADDRESS

Important notice to Subscribers to "The Navy" and Fellows of the Navy League of Australia.

It would be helpful to the Editor, Federal Secretary and Post Office if you would kindly complete the form provided below prior to moving from the postal address registered with the Navy League, thereby ensuring that "The Navy" reaches you on time. Fellows of the Navy League should also advise their Divisional Secretary of any change in status or postal address.

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The Royal Naval College, Greenwich.

One Hundred Years On And A Different Naval Breed

The Royal Naval College at Greenwich, a training ground for some of the world's finest naval officers, is 100 years old this year and to celebrate its founding by the Admiralty in 1873, a dinner was held in the Painted Hall of the Christopher Wren buildings on the slopes of the Thames on 1 February.

The Late Officers Mess at the Royal Naval College, Greenwich, in 1881.

by MARGARET COX

But the officers who gathered for this historic event were a different breed of men from the naval officers of the 1870s. Highly trained in naval nuclear strategy — the College has had its own nuclear reactor since 1962 — they are scientists and administrators, experts on North Atlantic Treaty Organisation and similar defence institutions as well as on modern naval strategy.

Senior officers who take the War Course usually have their sights on a high level defence post. But the lieutenant commanders training for a command are very different from the old ships' masters: they learn about world affairs, Britain's foreign and defence policies, the three armed services, leadership, management and human relations. One of the young lieutenants who took this course in 1948 was the Duke of Edinburgh.

Other students train as special duties officers or frigate squadron staff officers and Women's Royal Naval Service ratings have a special course in service matters, naval history, current affairs and the arts.

Seamanship

All this is a far cry from naval training in the 1870s. The Royal Navy's ships then still had a full rig of sails as well as steam propulsion. Seamanship was the great art and strategy meant skill in manoeuvring your vessel with a full rig, guns firing broadsides.

Reluctantly the Admiralty gave ground to progress: in the year the Royal Naval College was founded her Majesty's Ship DEVASTATION joined the fleet. Steam propelled, iron clad and with guns in twin turrets, she was a revolution in capital ship design and the forerunner of the modern battleship. The metamorphosis had arrived and the old ships' officers — "the sons of noblemen and gentlemen" — were a dying breed.

When the Admiralty took over the old seamen's hospital in Greenwich and created the Royal Naval College its officers were trained for the new age of steam and steel. They still learned about navigation and astronomy but they also had to brace themselves to deal with "naval science" — a study of steam and civil and hydraulic engineering, as well as metallurgy and naval architecture.

Today, with the advent of atomic technology, the officers of the Royal Naval College have to be nuclear specialists as well as defence strategists, administrators and politicians.

A different breed of men perhaps, but not necessarily better than those able to sail (and fight) a full-rigged ship 100 years ago.

Nuclear reactor room at the Royal Naval College, Greenwich, southern England.

THE DDL — A Reappraisal

(Reproduced with permission from **Maritime Review**)

Mr Barnard's direction for a fresh look at the DDL Project and three possible alternatives from overseas makes it time, for us all to look again at available information on the four types in question. After all, it is our necks which will need protecting, and our pockets which will be called upon to pay for that protection.

Our November issue looked at several overseas contemporaries of the DDL, and the table below is a fresh look, this time adding the USN s Patrol Frigate and deleting the USS FRANK E. KNOX class and the Canadian DDH (HMCS IROQUOIS) type, these having apparently been eliminated.

	Australia	Britain	Holland	USA
Class	?	SHEFFIELD	DE RUYTER	?
Type	DDL	Type 42 GMD	DDG	Patrol Frigate
Tonnage	4200	3500	4300	3500
Length	420'	392'	430'	420'
Guns	1-5"	1-4.5"	2-4.7"	2-35mm
Missiles	Standard	Sea Dart	Tartar	Standard
Torpedo Tubes	6	0	0	6
Helicopters	2	1	1	1
Speed	30 knots	30 knots	30 knots	25 knots
Range	6000/20k	4000/18k	?	?
Complement	200	280	306	?

With the enormous areas of ocean around our shores, Australian warships need, perhaps more than any others, long cruising endurance, and their bases are few and far between too. With a range of 6000 at 20 knots cruising speed, the DDL especially achieves this, compare the 4000 at 18 knots of the SHEFFIELD for example. We have no figures for the DE RUYTER or the Patrol Frigate but the latter is some 700 tons smaller and it is probable that a smaller fuel capacity, and shorter range, results. The DE RUYTER (it is important here to know that a DE RUYTER cruiser, exists at present and the name will go to the new destroyer when it completes), on a similar tonnage to the DDL, will be crewed by 306 as against 200 men in the DDL. Something has to give, and when you squeeze in all the necessary equipment and personnel, the space left for fuel must suffer and it is unthinkable that space for ammunition of all types be sacrificed.

The four types of ship in question are all powered by gas turbines, and all but one are quoted as being able to make 30 knots, the exception being the Patrol Frigate with 25 knots only, surely an unacceptably low figure in these times when many freighters are able to equal, or even better this rate. The Admiralty laid down a 30-knot minimum for its warships some 25 years ago and there have been no tendencies to reducing the speeds of submarines in that time so that policy does not err on the excessive side, indeed it may well be conservative now.

Let's look at the weapons fitted to the several types. A medium calibre gun, or guns, is fitted to all but the Patrol Frigate which will get a couple of pea shooters only. For our purposes a gun with shore bombardment capability is a must, and many surface targets are hardly worth the use of an expensive missile, besides which, missile-storage capacity is limited and it can get awful lonely out there with nothing to shoot with. So let's say that a gun is a must. In the area of missile launchers, all types seem to be more or less on a par. Standard and Tartar types are fairly similar and it is interesting to note that the Patrol Frigate's Standard mounting will also be able to fire Harpoon anti-ship missiles, no doubt the other ships will have somewhat similar arrangements also. The DDL is to be fitted later with an anti-ship missile system which seems likely to be something like an Exocet system.

Helicopters are a vital area of investigation. These craft are ideal for reconnaissance and anti-submarine work and it is likely that the type chosen for the DDL will have

some anti-ship capability. Only in the DDL is provision made for two of these 'planes, the others have a bare one each — lose one and you're shot, not so DDL which is able to stay in the field, effectively.

In a large country with a small population, best possible use of limited manpower is essential, hence the arrangements made to automate everything possible in DDL and keep the crew down to around 200. If you look at HMS SHEFFIELD you find 280 on the payroll, the Dutch go even further with 306, there are no figures available for the US ship. Crew space is at a premium on a relatively small ship, and habitability is important too in hot climates. And all those extra blokes will want to be paid too.

Which latter point brings up the subject of project cost. Prices of the various types in comparison have not been tabled for the simple reason that here, especially, comparisons are odious.

The cost of the DDL Project looks, at $355 millions, to be pretty high, but it includes many inescapable developmental costs which will not recur if the projected number of ships is increased, and some of these costs will also be offset when other new types of Australian-designed warships appear. Also included in the amount is money for major works at Williamstown Dockyard. Hardly a penny has been spent on Wildock since it was taken over from the Melbourne Harbour Trust in WW2, and the new works are needed so that the Yard can build modern ships of any type at all quickly and economically. It is also seldom realised that the official price of many overseas types do not include many items of equipment supplied by Government Departments, the costs of which appear in other sets of accounts. Whatever type of overseas ship is considered, even British types, extensive, and expensive, alterations and additions would have to be made to fit the ship for our requirements. The Patrol Frigate, still on the drawing board, is said to be in the vicinity of $50 millions per ship, over a run of fifty ships, but cost over-runs seem these days to be an inevitable fact of life, especially so in the US, and that price will almost certainly catch up with the DDL's price. But even more important than the relatively small variations in the likely initial cost of the ships concerned is the cost of running them for 20 to 25 years. Pay for the crews is a very big item here, and will no doubt be increasingly so. With the SHEFFIELD's crew 280, and the DE RUYTER's at 300 or so, as against the DDL's mere 200, an annual wages bill 50% higher will soon wipe out any savings made on the initial cost of the ships.

Another major factor, from a national point of view, is that if we adopt an overseas design we will be limiting the involvement of local industry, and our own Naval Dockyards, to develop the know-how to design and build modern warship types, and it is our maritime defences which are most important. It isn't likely that the Navy would select an inferior design of its own accord so we must assume that DDL meets Naval Staff Requirements best of all the types considered, in the past and again now. If we are to develop our technology in this area we must start now. The comparisons shown here indicate that we have a good team at work already.

HMAS BRUNEI during trials off Queensland

NEW RAN SQUADRON

Landing Craft Heavy

The squadron began life on 5 January this year with the commissioning of the landing craft heavy (LCH) HMAS **Brunei**. Between March and December of this year, a further six LCH will be commissioned, at approximately two month intervals between ships.

The prototype of the new squadron, **Balikpapan**, underwent joint RAN/Army evaluation trials in 1972. After the seven production LCH have been commissioned, **Balikpapan** will become part of the First Australian Landing Craft Squadron in mid-1974. Her crew of Army water transport soldiers will then be replaced by an RAN crew.

The eight sea-going ships are each to be manned by two officers and eleven sailors and will be employed primarily to provide seaborne support for the Army, though one will normally be allocated to Navy for hydrographic survey work.

As the names **Brunei** and **Balikpapan** suggest, the LCH will be named after Second World War amphibious operations in which RAN ships and craft put Australian Army units ashore or did surveys preparatory to the landings. Specifications of the landing craft which are approximately the same size as the RAN's minewarfare ships, are:

Class	Landing craft heavy
Displacement	310 tons
Length	146 feet
Beam	33 feet
Armament	Two 0.5 inch machine guns
Speed	More than nine knots
Ship's company	Two officers, eleven sailors
Builders	Walkers Ltd, Maryborough, Qld.

HMAS BALIKPAPAN prepares to take on equipment during trials.

Navy League Federal Council Meeting

The Federal Council of the Navy League of Australia, comprised of the State and Australian Capital Territory presidents of the League and the Federal Secretary, met in Canberra on 15 and 16 February, 1973.

Discussions on maritime defence matters, including the DDL project and **centralisation** in the Defence and Service departments, occupied the greater part of proceedings on the fifteenth. The Minister for Defence, the Hon Lance Barnard, MP, lunched with the Council on that day, and subsequently the Deputy Chief of the Naval Staff, Rear Admiral W. J. Dovers, addressed the meeting.

The Director of Naval Reserves and Cadets, Captain David Martin, chaired a meeting attended by members of the Council on the following day and discussion centred on Cadet affairs. Property arrangements (unit headquarters etc) and the future relationship of the Navy League and the Naval Reserve Cadets were amongst the important items debated. A number of proposals arising from this meeting are receiving detailed consideration at Navy Office.

The meetings concluded with a luncheon at which the Council was host to the Chairman of the Chiefs of Staff Committee, Admiral Sir Victor Smith; Vice-Admiral Sir Richard Peek, members of the Naval Board; Captain David Martin and his Deputy.

HMAS Salamaua (L131) — taken by Australian 9 Division troops on 4 September 1943 with the USN 7 Amphibious Force putting them ashore. RAN participation was preparatory survey by HMA Ships **Shepparton** and Benalla;

HMAS **Buna** (L132) — named after a battalion group landing by 2/9 Battalion on 13 December 1942 from HMA Ships **Colac, Ballarat** and **Broome**. The ships endeavoured to put 2/9th Battalion ashore on 13 December but the landing was aborted under threat of air attack after only 46 troops had been landed. The troops were put ashore instead at Oro Bay where, having been joined by 2/10 and 2/12 Battalions, they fought their way overland from Oro Bay to Buna by 1 January 1943; and

HMAS **Betano** (L133) — HMAS **Voyager** landed the 2/4 Independent Company at Betano in Timor on 23 September 1942. HMA Ships **Kuru, Castlemaine** and **Armidale** withdrew the Independent Company from Betano between December 1 and 3.

HMAS **Moreton**, on the Brisbane River, is being developed as the base for the squadron.

As in the case of HMAS **Platypus**, Sydney, and the First Australian Submarine Squadron based there, the Commanding Officer of HMAS **Moreton** will also be the LCH Squadron Commander.

The versatile LCH will be able to carry the heaviest equipment in the army's order of battle (up to three Centurion tanks a craft, for example).

Service in the craft will involve RAN officers and sailors in more intimate joint operations than has been possible for many years.

Symbolising the new relationship is the squadron's funnel badge, a combination of the Army's kangaroo and crossed swords badge and the Navy's anchor badge.

The bow-first launch of HMS WILTON at Southampton. Note the heads of the frame 'insurance' fastenings and the wooden sheathing amidships to protect the hull from chafe.

The 153 feet (46m) WILTON is the forerunner of a new type to replace the Royal Navy's ageing minesweeper fleet. Some 900,000 square feet (83,000m²) of glassfibre cloth was used in her construction.

ENTER THE PLASTIC WARSHIP

by

Commander N. E. Whitestone RN (retd).

Now in the final stages of fitting out, with contractor's sea trials due to take place early this year, is a vessel which has been the focus of worldwide interest. It is expected to provide the answers to a number of questions.

In January 1972 Her Majesty's Ship **WILTON** — believed to be the world's largest plastics ship — was launched at Vosper Thornycroft's yard at Southampton. Built entirely of glass reinforced plastics (GRP), this new minehunter is intended to be the experimental forerunner of a new class of Royal Navy mine countermeasures vessels planned to replace Britain's ageing minesweeper fleet.

A minehunter was chosen as the first plastics warship mainly on account of the non-magnetic nature of the new material. But there were other undoubted advantages; the single skin GRP construction eventually chosen has 64% of the tensile strength of mild steel for only one fifth of the weight and GRP is extremely resistent to all forms of corrosion and marine growth and is easy to maintain and repair.

Still in Service

To save design time the **WILTON** has the same dimensions and overall design as the Royal Navy's existing coastal minesweepers which are now almost 20 years old. Nearly 100 of these earlier Ton class vessels were built, all named after British villages ending in ton.

With hulls of double mahogany on aluminium alloy frames, these ships have a full load displacement of 450 tons (453 tonne), an overall length of 153 feet (46m), a beam of 28 feet (8.5m) and a draught of 8.2 feet (2.5m). Twin English Electric Deltic diesel engines produce 3,000hp, give a maximum speed of 16 knots.

Although nearing the end of their useful life, a number of these vessels are still in service with the Royal Navy, the Royal Naval Reserve and some overseas navies.

Since the performance and structural characteristics of these ships are well known, the use of the same design for the GRP vessel makes it easier to assess accurately the performance of the new material and reduces to a minimum the number of variables involved in making comparisons.

Cheaper Maintenance

The **WILTON's** cost of 1.5 to 2 million pounds is some 500,000 pounds more than that of the wood and aluminium vessels. Therefore it cannot be said that GRP is the cheapest material for vessels of this size but the trend is undoubtedly in its favour, as the cost of GRP materials has been stable for some years while the cost of steel has risen rapidly.

HMS WILTON at the fitting-out quay. Ahead of her is a long period of evaluation by the Royal Navy.

In any case, the extra cost will be more than offset by cheaper maintenance. Experience with smaller craft has shown that the cost of upkeep of GRP craft can be as little as one fifth of that for wood or steel. For a vessel the size of the **WILTON**, Vosper Thornycroft estimates that the saving over 15 years could amount to the whole cost of a new hull.

Reduced maintenance also means less time spent in port. This again is in line with the modern trend towards repair by replacement, such as the exchange of an entire new engine for the old, rather than repair during a lengthy refit.

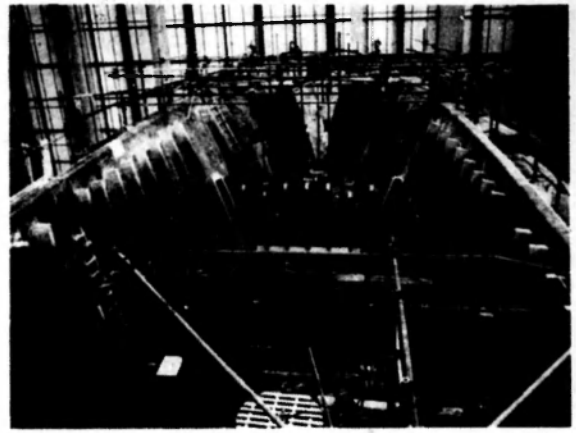
The total weight of glass-fibre used in the **WILTON's** construction was about 130 tons (132 tonne) and involved the use of 900,000 feet² (83,000m²) of "woven roving" glass-fibre cloth, successive layers of which, impregnated with resin, were compacted together to give her hull a single skin 1¼ inches (32mm) thick. This compares with the 3½inch (89mm) wooden hulls of the earlier minesweepers.

Semi-transparent

It was an eerie experience to stand between decks during the later stages of the **WILTON's** construction, for the hull was semi-transparent. The daylight filtered through the greenish-coloured material, turning the seamen's mess deck into a sort of Aladdin's Cave — an illusion that was to disappear with the first coat of paint.

To those who have followed the first steps towards the construction of the first GRP warship, with the earlier emphasis on "sandwich construction", it may come as a surprise that a single skin construction was adopted and a word must be said as to how this came about.

As part of a development programme to determine the best type of construction the Ministry of Defence ordered two structural test specimens to be moulded in GRP at the Vosper Thornycroft yard. These were to be full and 2/3 scale respectively mid-ship sections, each including two structural bulkheads, of ships of the coastal minesweeper type.



Without steel plates, welds or rivets, the hull of HMS WILTON takes a tape in a special Vosper Thornycroft shipyard at Woolston.

One was of sandwich construction, on a system developed jointly by Vosper Thornycroft and Bristol Aeroplane Plastics (later Rolls Royce Composites Ltd), using a "box core" technique or hollow boxes of glassfibre bonded to each other. The other was of single skin solid GRP laminate.

Underwater Explosions

These specimens were thoroughly tested at the Naval Construction Research Establishment at Dunfermline, in Scotland. Although the sandwich type had many attractions and had adequate strength under static loading, it was unable to cope with the shock loadings brought about by underwater explosions. When the section of single skin construction was subjected to explosion tests, apart from minor loosening of some bulkhead stiffeners, little damage ensued.

An unexpected proof of the resistance of glassfibre to impact damage occurred during one explosion test. A steel slab weighing nearly a ton which was representing a corresponding weight of machinery became loose due to the failure of a shockproof mounting and dropped with considerable force into the bilge. The only damage was to the top of two frames, which were easily repaired by laminated glassfibre cloth.

As a result of these tests, the way was now clear for the structural design of the glassfibre hull for the **WILTON**.

Different Skills

The building of such a ship calls for methods of working entirely different from traditional shipbuilding skills. With GRP the basic structural material has to be prepared on the spot instead of being assembled in the form of plating precut elsewhere. Great emphasis has to be placed on quality control and the moulding has to be carried out in controlled, warm and dry conditions.

To cope with the large quantities of material, special handling facilities were needed and careful attention paid to ventilation and fire precautions. As a first step, a special group of buildings had to be erected at Vosper Thornycroft's yard, with an adjoining amenity block which included washing facilities. Fire precautions take account of the highly inflammable nature of the liquid resin and special fire doors are fitted, with detectors in the roof linked directly to the local municipal fire station.

The Royal Institution of Naval Architects has been keeping a close professional eye on the new venture and will shortly be publishing a series of studies on the subject.

(Note: Metric Equivalents are approximate.)

The Navy of . . .

THE FEDERAL GERMAN REPUBLIC
— *A Period of Change*

(Specially written for "The Navy" by the Information and Press Section of the German Defence Ministry.)

Mission and Concept

The Navy as one of the three Services of the Federal Armed Forces contributes to maintaining peace and the security of both the Federal Republic and the North Atlantic Alliance.

The concept of the Navy takes account of the Soviet maritime expansion and their development of modern weapons, especially missiles.

This concept is a co-ordination of the various ideas on the Navy's missions; it sets forth above all in what way and by what means the Navy intends to fulfill its missions. In particular, it indicates the capabilities available to the naval forces for securing peace; the significant contribution of the Navy to crisis management; and the appraisal of the Baltic, the Baltic Approaches and the German North Sea as one single strategic theatre of operations.

The missions of the Navy are:

— to contribute, by its presence, readiness and conduct at sea to the deterrent power of the Alliance and to its strengthening, and to maintaining order at sea;
— to enlist sympathy for the Federal Republic of Germany and to foster her international relations;
— to preserve national rights and safeguard national interests at sea and on the German continental shelf;
— to serve politics as an instrument of flexible crisis management by its presence and conduct at sea;
— to protect, in a defence emergency, the territories of costal NATO countries and the Baltic Approaches by countering attacks directed against the Baltic and the North Sea coasts. It is the Navy's mission to restrict, to the degree necessary for ensuring that protection, the enemy's use of the Baltic, to deny the enemy his lines of communications between naval bases in the Baltic and the Atlantic, and to guarantee, in co-operation with our allies, control of the North Sea.

ROMMEL (D187), one of three modified "Charles F. Adams" class of destroyers equipped with Tartar and Asroc.

These missions are based on NATO defence agreements and have been defined in consultation with the members of the Alliance. The missions take account of the changing balance of naval forces at the northern flank of NATO.

Under the aspect of conditions prevailing in the various areas of NATO's northern flank, the concept justifies the naval forces as required.

1. Units planned for employment in the Baltic have to possess the highest possible survivability. Taking this into account, a great number, and a whole range, of means of naval warfare is required (eg. FPBs, submarines, fighter-bombers).
2. Should the enemy have neutralized friendly forces in the Baltic to a considerable extent, friendly combat-ready means of naval warfare (destroyers, frigates, ASW aircraft) should be available in the North Sea and the Skagerrak in order to deny him the unrestricted use of that area.
3. Balanced forces in the entire North Sea and Baltic areas are a cogent requirement for a credible deterrence. The availability of qualitatively and quantitatively adequate naval and naval air forces for employment in the North Sea contributes considerably to deterring an attack even in the Western Baltic.
4. The size of the naval and naval air forces must be sufficient to counter a limited surprise action and to resist a large-scale attack successfully until the provisions of the Alliance become effective.

Organizational Structure

The organizational structure of the Navy with its two commands subordinate to the Chief of Staff, Navy, will

An HU-16 ALBATROSS, land-based five-crew general purpose amphibian.

be remodelled; the new structure promises both to be more to the purpose of the Navy's missions and to increase the rate of operational naval units available.

The basic structure of the new organizational concept has been approved by the Federal Minister of Defence.

According to the new structure, three commands will be subordinate to the Chief of Staff, Navy:

1. The **Fleet Command** with the Commander German Naval Forces North Sea, the units afloat and the Naval Air Forces; the Auxiliaries Flotilla, the Amphibious Transport Action group and the units and installations of the Naval Support Units.
2. The **General Naval Office** with its three main areas of responsibility: Armament, training and the naval medical services; and the subordinate agencies and installations.
3. The **Naval Service Support Office** (preliminary designation) responsible for systems management, maintenance, and material supply management, transportation. All land-based support units and installations will be assigned to that office.

While the General Naval Office will be responsible for all matters pertaining to the long-term provision of manpower and material, the Naval Service Support Office will be responsible for current support missions and tasks pertaining to employment and utilization of all means of naval warfare. The concentration of all matters concerning current operations of the fleet in the Naval Service Support Office guarantees the necessary direct influence exercised by the Chief of Staff, Navy, who is responsible for the combat readiness of all naval forces.

This reorganization will be initiated during 1973 and be carried out in phases.

Naval and Naval Air Forces

1. The Commander-in-Chief, German Naval Forces has available the following forces to fulfil his missions:

— Combat Forces:

2 Naval Air Wings totalling — 120 F-104G Naval Fighter-Bombers and Reconnaissance Aircraft.

1 Naval Air Wing totalling — 20 BR 1150 ATLANTIC Maritime Patrol Aircraft and ASW aircraft.

1 Destroyer Squadron totalling — 3 Missile Destroyers: LUTJENS, MOLDERS, ROMMEL.

1 Destroyer Squadron totalling — 4 Destroyers: HAMBURG, SCHLESWIG-HOLSTEIN, BAYERN, HESSEN.

1 Destroyer Squadron totalling — 4 Destroyers: Z2, Z3, Z4, Z5.

1 Escort Squadron totalling — 6 Frigates: KOLN, EMDEN, KARLSRUHE, AUGSBURG, BRAUNSCHWEIG, LUBECK.

4 FBP Squadrons totalling — 38 FPBs: 28 JAGUAR class, 10 ZOBEL class; 20 new constructions built in France: Missile-carrying FPBs of the 148-class, replacing 20 units of the JAGUAR-class; the first unit commissioned on 1 October, 1972, with delivery by October 1974; 10 new constructions — Missile-carrying FPBs of the 143-class replacing 10 JAGUAR-class units. The first laid on stock by the end of 1972; with delivery during 1976.

1 Submarine Squadron totalling — 6 vessels, augmented by 5 training boats of the 205-class; 18 new constructions of the 206-class in the construction phase; 3 vessels undergoing shipyard trial before hand-over to the Navy; with delivery by end 1974.

— Combat Support Units

6 Minesweeper Squadrons totalling — 55 minesweepers, 27 fast minesweepers SCHUTZE-class, 2 minelayers, 10 river minesweepers ARIADNE, 18 coastal minesweepers LINDAU, 10 of which in the conversion phase as minehunters, 2 recommissioned.

Fast Patrol Boats of the Zobel Class (modernised units of the Jaguar class) cruising in formation.

U 9 (formerly S188) a Coastal Type 205 submarine.]

The Thetis class corvette THESEUS (A1 434); vessels of this class were designed as submarine chasers.

1 Landing Craft Squadron totalling — 2 medium landing craft, 10 multiple-purpose craft BUTT.

1 Fleet Training and Utility Squadron totalling — 5 fleet training and utility craft THETIS.

— Naval Support Units

6 FPB tenders RHEIN, 3 minesweeper tenders MOSEL, 2 submarine tenders LAHN, 8 store ships (mixed replenishment cargo), 2 ammunition transporters, 10 tankers, 20 Search Rescue Helicopters SEA KING (at present H-34 G; wef 1973/1974 MK 41), 20 Liaison aircraft DO-28 SKYSERVANT.

2. Training for the following operational missions is conducted in NATO, bilateral, and national, manoeuvres:

— Reconnaissance/Patrol and Surveillance
— Anti-surface Target Operations
— ASW
— Mine Countermeasures
— Air Defence
— Amphibious Transport, and
— Logistical Support Operations

In the North Sea and the Baltic, only Danish and German naval forces are present. The main burden of defence is borne by the German Navy. In order to ensure and maintain both the highest possible degree of combat readiness and the required rate of operational units, the so-called SEF (Standige Einsatzgruppe Flotte — Standing Exercise Fleet) was formed; this forces group joins several times per annum in exercises.

3. In detail, the missions of the various surface vessels and aircraft are the following:

Naval Fighter-Bombers: Flying element of the fleet for air operations in naval warfare. High-speed aircraft to be employed in their various configurations.

The supply ship SACHSENWALD commissioned in August, 1969. She and her sister-ship have mine ports in the stern and can be used as minelayers.

They can be employed both in fast tactical recce missions and anti-surface target operations as well as against land-bound enemy naval installations. They are equipped with missiles (air-air and air-ship), bombs, automatic guns and camera systems.

Missile Destroyers: Destroyers: Frigates: The characteristics common to these units are good seagoing endurance, all-weather capability, and complex weapons and highly advanced command and control systems. These characteristics meet specifically the requirements of sea area surveillance and defence against air, surface, or sub-surface, attacks conducted against ships or formations to be protected by them.

Fast Patrol Boats: Small, highly flexible and well-armed units for employment in observation missions over coastal and adjacent areas, attack operations to be conducted at sea to counter attacks directed against coasts, and in minelaying operations. Armament and configuration of 30 of these units are obsolete; in the near future they will be replaced by modern missile-equipped new constructions. 10 FPBs have been modernized and equipped with radar fire control systems and wire-guided torpedoes.

Submarines: Small, flexible and well-armed submarines for employment in long-range recce missions, mine-laying, and torpedo attack, operations.

Maritime Patrol Aircraft: The largest long-range combat aircraft of the Federal Armed Forces possessing a high fuel endurance and well-suited for distant recce. and ASW, missions. They are equipped with complex detection/tracing systems, air-surface missiles, ASW torpedoes, depth charges and sonar buoys.

Minesweepers. Units equipped for mine-sweeping and mine-clearing missions both in the Baltic and the North Sea.

30 tenders, store ships, tankers and transporters are available to provide the combat units at sea with POL, water, food, and ammunition.

Naval and maritime aviation bases and depots at home and abroad ensure the continuous material combat readiness of both the naval and naval air forces and their land-based units.

KROKODIL, an ex-US medium Landing Ship, refitted in 1959 — note the helicopter deck aft.

The Naval Command Staff (as of 1 October, 1972)

Naval Staff:

Chief of Staff, Navy, Vizeadmiral Heinz HUHNLE.

Deputy Chief of Staff, Navy, Konteradmiral Horst von SCHROETER.

Fleet Command:

Commander-in-Chief German Naval Forces, Vizeadmiral Paul HARTWIG.

Deputy Commander-in-Chief German Naval Forces, Konteradmiral Hans-Helmut KLOSE.

Commander, German Naval Forces North Sea, Flottillenadmiral Karl CLAUSEN.

Commander, Naval Air Division, Flottillenadmiral Paul KRIEBEL.

General Naval Office:

Chief, General Naval Office, Konteradmiral Gunther LUTHER.

Manpower

In 1972, the Navy's military personnel totalled	36,150
These are employed as follows:	
The Navy	34,000
Territorial Army	430
Central Military Agencies including the Ministry of Defence	1,720
	36,150

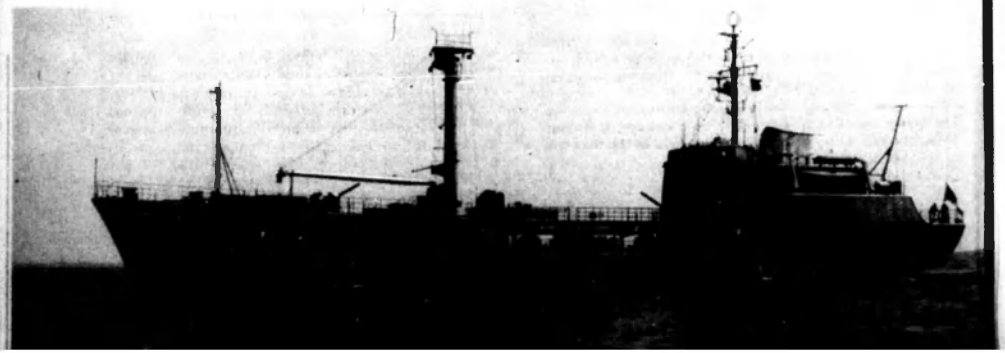
In addition: employed in Vocational Advancement institutions	1,050

The **military personnel** of the Service is employed as follows:

Combat Forces		18,900
of which Naval Air Force Personnel	6,400	
Naval Support Forces		4,300
Training installations personnel		1,300
In-training stage		9,500
		34,000

The **civilian personnel** of the Navy totals	9,930
Breakdown by **personnel categories:**	
Officers	4,950
NCOs/Petty Officers	12,700
Other Ranks	18,500
	36,150
Breakdown by **enlistment categories:**	
Regular soldiers	21.0%
Long-term soldiers	51.5%
Conscripts	27.5%

The oiler WESTENSEE (1427) commissioned in October, 1967.



Personnel Structure and Training

The modern and complex equipment of naval vessels and aircraft require a great number of highly qualified specialist personnel whose training takes considerable time. The Navy requires a particularly high portion of the enlisted long-term personnel; the desired portion of conscripts is 15%.

Training is conducted in schools ashore; 10 schools and 5 independent special training detachments are available. The best-known naval training institution is the MURWICK Naval Academy which has to be attended by all naval officer candidates. The numerous and manifold training courses offer a wealth of qualifications to be acquired for military as well as civilian careers; training schedules have been harmonized to a large extent with civilian job qualifications in order to facilitate transition to the civilian sector.

* * *

The Situation in the North and Baltic Seas as at September, 1972.

During the past decade the systematic expansion of the Soviet naval forces has decisively changed the strategic balance on the seven seas. In spite of all her efforts the Soviet Union has so far largely failed to obtain free access to the oceans. Only in the geographically and climatically unfavourable Arctic Sea does she have a direct connection to the Atlantic Ocean. The remaining European coasts of the Soviet Union and her allies pertain to nearly landlocked seas, such as the Black Sea and the Baltic Sea whose approaches are being guarded by states of the NATO Alliance. In the Pacific Ocean, Japan occupies a blocking position in front of the Soviet bases.

In the NATO area, the activities of the Soviet naval forces concentrate on the bordering seas of Europe and on the northern part of the North Atlantic Ocean. The Baltic and the North Seas and their communications as seen by the Warsaw Pact are regarded as one coherent theatre of operations. This area is threatened both by the Warsaw Pact navies and units of the Soviet Northern Fleet. Naval forces are highly mobile and capable of deploying, rapidly and at any time, to other waters.

In the Baltic and the North Sea the Warsaw Pact naval forces are vastly superior to those of NATO. The pressure of these naval forces on the northern flank of NATO has increased, as stated in the "White Paper 1971/72 — The Security of the Federal Republic of Germany and the Development of the Federal Armed Forces."

NAVAL STRENGTH OF COUNTRIES BORDERING ON THE BALTIC SEA

UNITS	Fed Rep of Germany	Denmark	Norway	Soviet Union	Poland	German Dem Rep	Sweden	Finland
Guided Missile Cruisers								
Cruisers				5			1	
Guided Missile Destroyers	3			7	1		11	2
Destroyers	9			16	3		8	
Frigates	6	2	5	28		2	7	3
Guided Missile Corvettes				1				
Corvettes		4						2
Antisubmarine Patrol Craft		4	2	95	20	25		
Submarines	10	6	15	60	5		24	
FPBs	40	16	40	95	25	60	42	15
Guided Missile FPBs			6	48	12	12		1
Minesweepers	70	12	10	104	25	40	37	5
Landing Ships	24			64	30	18	8	15
Naval Aircraft (fixed-wing)	154			200	60			
Naval Helicopters	23			20		15	28	
Personnel (Officers, NCOs and men)	35,800	approx 7,000	approx 8,500	140,000	19,000	16,500	16,000	2,000

In its composition, strength, equipment, and training the Soviet Baltic Fleet has not been designed exclusively for tasks in the Baltic Sea. It includes both units suitable for use in ocean areas and naval air units, highly mobile missile carriers, and a strong amphibian component for missions in bordering seas. In this role it is reinforced by the naval forces of the German Democratic Republic and of Poland.

The dependence of the Soviet Navy on the connections to its bases, its shipbuilding and industrial centres — the most productive of which are located on the Baltic Sea — has been increased by the build-up of modern naval forces operating on a world-wide scale.

During recent years close co-operation of Soviet fleets deployed to oceans from the different bordering seas has been observed more and more frequently in normal fleet operations as well as in exercises ranging from local to world-wide activity. The present use of the seven seas by the Soviet Navy suggests that in crisis situations substantial parts of the Baltic Fleet will attempt to gain access to the Atlantic Ocean through the Baltic approaches and the North Sea, with effective participation and support by the Northern Fleet.

A captain's humanity cost 500 lives

BY JACK MILLAR

The morning of 26 April, 1941, dawned fine and clear. A convoy of evacuation ships hurriedly pressed into service was steaming north from Crete, at 14 knots, bound for the beaches at Nauplia.

They were the Dutch troopship Slamat, **the British** Khedive Ismail **and the special landing ship** Glenearn — **escorted by the anti-aircraft cruiser** Calcutta **and the destroyers** Diamond, Griffin, Hotspur, Isis and Havoc.

Both the Slamat and Khedive Ismail were well known to Australian troops, having safely transported many thousands from Australia and India to the Middle East in 1940, and early 1941.

The **Glenearn** was on her second visit to Nauplia having evacuated 5000 troops during the night of 24 April.

Dive-bombed on the way she was set on fire and lost an anchor, but successfully completed her mission.

The **Calcutta**, too, had previously evacuated 700 troops from Raphtis.

Plenty of aircraft were sighted throughout the day, but none attacked till 6 pm as the convoy entered the Gulf of Nauplia.

A blow

The planes came from the land — ME 109s and Stukas, but such was the barrage put up by **Calcutta** that all but one did not press home their attacks.

The one exception, a Stuka, came out of the sky in a vertical dive, straight at **Glenearn**.

Pulling out at masthead height, he let go with a 500-pounder missing **Glenearn** by a hair's breadth.

Concussion from the bomb fractured the ship's plates in a vital spot, below the waterline — alongside the engineroom. Water poured in quickly putting the engines out of action. Although in no danger of sinking, **Glenearn** could not steam, and reluctantly the destroyer **Griffin** was detached to tow the disabled ship back to Crete.

Glenearn's withdrawal was a severe blow to the mission's success.

On fire

Without her 12 busy landing craft the ferrying of troops to the other ships would be difficult.

Darkness settled without further attack and the convoy reached Nauplia safely.

Effectively blocking the harbour entrance to the large troopships was the troop-carrier HMS **Ulster Prince**, which had run aground during the previous evacuation, being later bombed and set on fire. She was still burning furiously.

Slamat and **Khedive Ismail** dropped anchor to seaward of the harbour entrance. **Calcutta** and the destroyers managed to get in a little closer.

Diamond remained outside on anti-submarine patrol.

Over the sides scrambling nets were rigged ready for the soldiers, mainly Australians, waiting on the beaches.

Frustration

The only boats available were the motor boats and whalers of the warships, lifeboats of the troopships and two Greek caiques.

It was a night of frustration. Worst was the weather. A rising offshore wind whipped the waters. Some boats capsized.

About midnight it appeared that thousands would be left behind at nearby Tolon.

Suddenly, out of the darkness, loomed two cruisers and a destroyer. These were the **Orion** and the Australian ships **Perth** and **Stuart** hurriedly dispatched to take the place of the damaged **Glenearn**.

Perth and **Stuart** were ordered to Tolon, where a lighter ferried 1700 soldiers out to them.

Zero hour for departure was 3 am. All ships had been instructed not to remain a minute longer. At Nauplia at this time there were still 1500 soldiers waiting on the beaches.

No response

Slamat had only 500, mainly Australians. **Calcutta** 1000. **Hotspur** 500, and **Isis** 400. **Khedive Ismail** had none.

Right on time **Orion, Perth, Stuart** and **Havoc** set out at full speed for Crete. On board were more than 2000 soldiers.

HMAS STUART with the Mediterranean Fleet.

As zero hour came and went **Slamat** made no attempt to raise her anchor. Repeated signals from **Calcutta** brought no response.

It has been said her officers, all Dutch, could not understand these signals. It is more than likely they were fully occupied with the evacuation and did not see them, as all could read morse in English if sent slowly.

Slamat's master, Captain Luidinga, waited on — well past the deadline.

With only 500 soldiers on board, and ample room for the others ashore it is probable that he lingered in the hope of the caiques returning with more.

It was not until a motor boat from **Diamond** went alongside with a direct order to leave that **Slamat** weighed anchor and shaped course for Crete.

Attack

The time was 4.15 am, and the first tinge of dawn was in the sky.

About 4,300 troops were embarked from Nauplia and Tolon that night.

Dangerously north of where they should have been, this at first gave some respite.

But at dawn, German search planes concentrated further south. Unable to find the convoy the aircraft fanned out.

Inevitably it happened. At 7 am contact was made.

Alarm bells sounded action stations throughout the ships. Soon the sky was thick with Stukas and ME 110s and 109s.

From all points of the compass planes zoomed in on their prey. Dashing ahead, **Diamond, Isis** and **Hotspur** threw up a barrage in front of the convoy.

Calcutta closed between the two troopships, aiming to protect them at all costs with concentrated fire.

Killed

At first the barrage threw the bombers off their aim. Then 10 minutes after the attack started. Slamat, the largest ship, was hit on the bridge by two bombs, killing Captain Luidinga and all there.

That section of the ship was a shambles, enveloped by fire. The wheelhouse smashed **Slamat** sheered away out of control, narrowly missing **Calcutta**.

Only lightly armed with machine-guns, the two Australian naval gunners on **Slamat**, Able-Seamen Johnny Walker and Val Williams, stuck to their post till the last.

Blazing away, they brought down at least one plane.

JU 88s arrived to add their weight to the fray. In low-level attacks the remaining ships were near-missed many times. Around them the water was a boiling cauldron of exploding bombs.

On fire

Slamat was now blazing from stem to stern. With her lifeboats on fire, men not already killed dropped over the side like flies.

Diamond, with hardly any troops on board, was ordered to pick up survivors. The convoy steamed on. At 9 am, three destroyers arrived at speed from the south.

These were **Wryneck** and the Australian ships **Vendetta** and **Waterhen**, contemptuously referred to by the German radio as the scrap-iron flotilla.

Right now they were worth their weight in gold.

They had been sent by Vice-Admiral Pridham-Wippell to screen the convoy, allowing **Isis** and **Hotspur**, heavily overloaded with troops, to dash on to Crete.

Diamond, continuously under dive-bombing attack in rescuing **Slamat's** survivors, radioed for help.

Wryneck was dispatched, arriving at 10 am, by which time **Diamond** has fished some 500 from the water. **Wryneck** quickly picked up another 50.

Sunk

Both ships were heavily attacked. The aircraft did not hesitate to machine-gun survivors in the water.

Wasting no time, a torpedo from **Diamond** finished the doomed **Slamat**. At 25 knots the two destroyers sped after the convoy. Shortly after noon more planes appeared — this time Messerschmitts and JU 87s.

Diamond, jam-packed with troops both below and on deck was hit first. Messerschmitts screamed in, cannons and machine-guns blazing.

Wounded and dying fell on deck. Gun crews suffered the same fate.

JU 87s took over — like vultures diving on their prey.

The first bomb, a near miss exploded on **Diamond's** port side, ripping apart her thin plates.

Most of the soldiers on the mess decks were killed outright.

A second bomb exploded in the engine room. The aftermast and funnel crashed on deck. Dead and dying lay everywhere. **Diamond** went down by the stern.

Costly

Wryneck suffered a similar fate. Attacked within seconds of **Diamond**, she was hit with bomb after bomb. She too went to the bottom within minutes. At least one gun-crew was still firing as the ship sank under them.

From the 500 soldiers on **Slamat**, her entire crew and the crew of **Diamond** and **Wryneck**, only 50 were saved.

Slamat's delayed sailing had cost hundreds of lives. In fairness it must be said that had the convoy departed on time it prob bly would have met the same fate.

Operation "Demon" continued unabated night after night from 24 April to 30 April.

In all 62,611 fighting troops were sent to Greece. Our losses were 14,700.

Thanks to the courage of the Navy and Merchant Navy, 50,672 were taken off from the various embarkation points. Included in this were 2761 Greek soldiers and civilian refugees.

Superb

All but 14,000 were picked up from open beaches, often in foul weather. Without adequate charts of the embarkation points this called for superb seamanship.

The losses in equipment, armour, guns, transport, ammunition and stores were very heavy, but the objective had been accomplished. An army had been brought back to fight another day.

THE NAVY LEAGUE OF AUSTRALIA

Federal President's Report

(Submitted to the Federal Council of the League at a Meeting held in Canberra on 15 February, 1973.)

Strictly speaking this report ought to cover our financial year ended 30 June last: However, my predecessor, Commander John Howse reported on nearly half of this period when the Council last met, in Melbourne on 3 December, 1971, and so I have decided to comment on the period December, 1971 until the present date.

It will be recalled that at our Melbourne Meeting, much attention was given to a possible change of emphasis in the League's activities following the decision to amalgamate the ASCC and RANR Cadets: It was agreed that the League should pay more attention to its "maritime affairs" objectives and, as a preliminary to this, to form a number of study groups to examine particular aspects of Naval defence so that the League would be in a better position to offer comment on issues affecting the Royal Australian Navy.

Several such groups have been formed, and circumstances caused them to be "active" much sooner than I expected: they have been concerned with:—

- The DDL project.
- Suggestions that the Navy ought to be moved out of Sydney.
- Integration of the armed services.

A considerable amount of work has been put into these studies — the examination of papers; discussions with people in and outside the Services; correspondence with other countries; writing letters and Articles and so on: In every quarter I am pleased to say, we have received co-operation and assistance.

I propose to report in detail on each of the studies mentioned to the Council, but would like to summarise here the opinions formed:

The DDLs: In a world in which alliances and attitudes are in an almost constant state of change, and technical advances are being made all the time, it is obviously extremely difficult to plan the shape of the Navy almost a decade ahead. We accept the view that the Navy's destroyer proposals are the result of the most thorough investigation ever carried out on an Australian defence project, and we have supported the concept in every way open to us throughout the year. As you know the DDL project is being reviewed again by the new Government and we must continue to give our attention to this matter.

The RAN-in-Sydney: Suggestions that the Navy, all 27 or so establishments, be moved out of Sydney to "some other place" are considered to be quite unreal. Quite apart from the enormous cost, little thought appears to have been given to the adverse effect on considerable sections of the Sydney community which depend directly or indirectly on the RAN for a living. The NSW Division has accumulated much information on this subject which I am sure will be put to good use.

Integration: We believe there is a strong case for integration, but not unification as carried out in Canada. With regard to the latter, the maritime affairs committee of the Navy League of Canada has been of great assistance in enabling us to form opinion on the Canadian experiment, and this we have made known in the appropriate quarters. This group is currently preparing a report on integration.

These studies upon which we have embarked may sound rather ambitious, but on the other hand the fact that a group of people, mostly engaged in commerce albeit with some Service experience, have set out to try and understand the problems of Australian maritime defence, has I believe caused a certain amount of interest, and resulted in the co-operation which we have received, not least from the Naval Board and members of the past and present Governments.

Other studies we wish to make relate to the question of "unionism" in the Services, and the future of citizen forces. The first-mentioned is a sensitive subject, especially in the Services, and one which we must try to learn something of the issues involved.

For reasons which I am sure will be understood, the activities of these "groups", which have been of an experimental nature, have centered on Melbourne and Sydney. Now that they have been more or less established, I would hope this kind of activity can be spread into other Divisions. The essential requirement is to have three or four people in each State prepared to undertake the quite considerable work which is involved.

With regard to the ASCC, or NRC as it is now, 1972 was not the easiest year we have had. Transitional problems were probably to be expected in a change of this nature, but they were somewhat aggravated by a number of factors including, in my belief, a shortage of staff in the departments concerned, and long drafting delays which prevented the Navy from acting effectively in a number of areas, such as the acquisition of or assistance with property.

Despite the difficulties mentioned, RAN assistance for the ASCC/NRC increased greatly during 1972, and especially in the important training and stores departments. On balance, a good deal of progress was made during the year.

Admiral Stevenson, Commander Beckley and I met in October to discuss the rationalisation situation and I believe this meeting was useful to all concerned with the well-being of the Cadet organisation.

My contact with the States during the year has convinced me that continued participation by the League in Cadet affairs is very desirable. The NRC is essentially a youth organisation rather than a part of the defence forces, and the League can do much to ensure that this is kept in mind. I will be putting forward proposals on this subject to the Council.

I express my gratitude to the Federal Secretary, Lieutenant Commander Arthur Andrews, and to Miss Shorrocks, the assistant Secretary, for their work during the year. It cannot have been easy for Arthur Andrews having the Federal President 600 miles away, but he has managed to cope with secretarial problems and thus left me free to concentrate on our new ventures.

Finally, I have appreciated very much the support of the Vice-President, Captain Len Vickridge, who has kept closely in touch with me during the year. It has I fear been an expensive term of office for the Vice-President!

GEOFFREY EVANS
Commander, RANVR,
Federal President

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Navy's 101st nuclear sub commissioned at Litton Shipyard

The US Navy's 101st nuclear-powered submarine joined the fleet when the USS WILLIAM H. BATES (SSN-680) was commissioned at the Ingalls Shipbuilding division of Litton Industries on Saturday, 5 May, 1973.

The WILLIAM H. BATES (see photograph) is an attack submarine and the 10th constructed by Ingalls, which has been producing Naval vessels since 1938. Ingalls has two other nuclear submarines under construction and one undergoing overhaul work.

Designed primarily for operations against enemy submarines, the WILLIAM H. BATES is armed with the most advanced antisubmarine weapons systems and is equipped with the latest sonar systems that can detect hostile submarines deep within the ocean. The submarine combines endurance and environmental independence of nuclear power with deep submergence and speed.

With a crew of 12 officers and 95 sailors, the WILLIAM H. BATES is more than 300 feet long with a surface displacement of 4,200 tons.

US Navy's 101st Nuclear submarine, USS WILLIAM H. BATES, was commissioned on 5 May; she is equipped with the most advanced anti-submarine weapons systems.

NEW ROLE FOR THE DUCHESS

On a privateering voyage around the world between 1708 and 1711, the Bristol ship Duchess rescued Alexander Selkirk, inspirer of Defoe's Robinson Crusoe.

There is a reminder of that voyage 265 years ago on the badge of the Australian destroyer HMAS DUCHESS which shows a duchess' coronet over a terrestrial globe.

The motto reads, fittingly for a duchess: "Duri Non Trahi" — Led but not dragged.

Five ships have carried the name **DUCHESS.** The first was a vessel of 24 guns captured in 1652. She took part in the battle of Gabbard, Portland and Scheveningen the following year.

The second **DUCHESS** was Rear Admiral Rooke's Flagship at the battle of Beachy Head in 1690. She was a second rate of 90 guns launched in 1679.

The rescuer of the castaway of Juan Fernandez Island was next of the line. Fourth was a Defender Class destroyer sunk in action in World War Two.

The present **DUCHESS** has had a quieter life during its service with the Home, Mediterranean, Far East and Australian Fleets.

Like the younger Australian-built **VENDETTA** and **VAMPIRE** she is a member of the Daring Class.

The class was designed to provide naval gunfire support. The six 4.5 inch guns in three turrets gave armament comparable with that of light cruisers of earlier days.

Displacing 3,600 tons, the ships were also considerably larger than conventional destroyers.

Weight was saved by welding the hull plates and by using aluminium and light alloys in the superstructure and fittings.

DUCHESS' Parsons double-reduction geared turbines driving two shafts (horsepower at each shaft 54,000) push her through the water at more than 30 knots.

She is highly manoeuvrable because of her twin rudders.

One of her first duties after her initial work up was completed in 1953 was to attend the Spithead Coronation Review. She was at Suez during the crisis and spent three weeks escorting HMS **CENTAUR** and HMS **ARK ROYAL** in the Aden area in 1963.

When HMAS **VOYAGER** was lost in 1964, **DUCHESS** was lent to the RAN as a replacement.

The initial four-year loan was extended by the British Government and in July of this year Australia bought **DUCHESS** for 150,000 pounds sterling.

At 20 years of age, **DUCHESS** is no longer a front-line ship and is being converted to meet the RAN's pressing need for another training ship.

The shortage of sea-training facilities, particularly for junior officers, will be accentuated by the withdrawal of HMAS **ANZAC** for refit late this year and by HMAS **SYDNEY's** retirement in 1974.

The 390 foot silhouette of **DUCHESS** will change at Williamstown Naval Dockyard, Melbourne, between January and October.

Removal of the rear turret will make way for an air-conditioned 38 feet x 17 feet 6 inch classroom capable of seating 35 trainees.

The junior officers' cafeteria will double as a study and library.

The complement of the converted ship will be 12 officers, 20 chief petty officers, 29 petty officers, 164 junior sailors (including 46 ordinary seamen) and 35 junior officer trainees.

Between them **DUCHESS** and **ANZAC** will provide:

- Each year a total of 40 weeks basic sea training for midshipmen and cadet midshipmen;
- Common sea training for ordinary seamen;
- Promotion training for all categories of sailor to the rank of chief petty officer; and
- Technical training for the award of appropriate certificates.

The maximum length of a training cruise will be 11 weeks.

DUCHESS' conversion will be undertaken in conjunction with a biennial refit.

The work will include updating of medical and dental equipment and facilities and of galleys, bathrooms, heads and laundries.

Other armament to be removed includes the anti-submarine mortar. The vessel will still be able to provide naval gunfire support from its forward turrets.

The total cost of the refit and conversion is expected to be more than $2m.

HMAS DUCHESS prior to conversion to a training ship.

Duchess before refit

Duchess after refit

Naval Reserve Cadet News

NEW SOUTH WALES

Quarterly Report of Proceedings

This report covers the period 1 January to 31 March, 1973 and covers Weekend Training and other activities carried out by the Naval Reserve Cadets in New South Wales.

Weekend Training took place in the following HMA Ships:

HMA Ship	Dates	No of Personnel
HMAS YARRA	19-21 January	12
HMAS SYDNEY	26-29 January	34
HMAS VAMPIRE	23-25 March	22
HMAS VAMPIRE	30 March-1 April	22

NRC Units carried out weekend training in their own Units as follows:

NRC Unit	Dates
TS SYDNEY	26-29 January
TS HAWKESBURY	2-4 February
TS WARREGO	23-25 February
TS HAWKESBURY	9-11 March
TS TOBRUK	23-25 March

The new Unit at Coffs Harbour, TS VENDETTA, officially commenced operations on 1 January, 1973. Commanding Officer of the Unit is Lieutenant (Cadets) D. G. DRYSDALE who, some years ago, served as First Lieutenant of TS ALBATROSS.

During the quarter under review further enquiries were received from Tweed Heads, where it is hoped to form a new Unit, and from Rozelle Boys' Junior High School, where it is hoped to form a School Section attached to TS SYDNEY. It is hoped that permission to proceed in these two areas will be forthcoming upon completion of a review currently being conducted by Navy Office.

The Commanding Officer of TS TOBRUK, Lieutenant V. C. Williams, and the Commanding Officer of TS SHROPSHIRE, Lieutenant E. L. Causer, were both promoted to Lieutenant-Commander (Cadets) to date 1 January, 1973.

Due to retirements on 31 December, 1972, changes in Command were effected for TS ALBATROSS and TS SIRIUS. Lieutenant (Cadets) A. W. Seabrook was appointed Acting Commanding Officer of TS ALBATROSS and Lieutenant (Cadets) N. McCartney was appointed Acting Commanding Officer of TS SIRIUS. Both appointments are to date 1 January, 1973.

Advice was received from Government House during February that His Excellency the Governor of New South Wales would be unable to review the New South Wales Division on 28th April but that His Excellency would be pleased to review the Division on 30 June, 1973.

During this quarter, the representative of the Flag Officer Commanding East Australia Area, Commander R. J. Rust RAN, inspected TS WARREGO on 17 March and TS PARRAMATTA on 31 March.

The strength of the New South Wales Division stands at present:

Staff Officers	4
Honorary Chaplains	2
Officers	33
Instructors	24
Cadets	426

L. MACKAY-CRUISE,
Commander, RANR,
Senior Officer.

* * *

VICTORIA

WINSTON CHURCHILL

Well-known yachtsman Mr Graham Warner has decided to **loan** his ocean-racer **Winston Churchill** to the Victorian Division of the Navy League.

Winston Churchill is an auxiliary cutter of 27 gross tons and 57 feet in length, and has recently returned to Australia from Tonga where she has been on charter for tourist excursions amongst the islands.

The cutter will be used for Cadet training purposes and in the initial stages will be kept in Port Phillip Bay.

Many details have yet to be decided, and further details will be known when the fortunate Victorian Division has **digested** this handsome offer of Mr Warner.

* * *

CANADA

Three sea cadets, chosen from 165 across Canada, returned to Esquimalt, BC just before Christmas, after serving in HMCS "Qu'Appelle" during a four month deployment in the south Pacific.

Cadet Chief Petty Officer, R.M. (Michael) Stewart (18) of Royal Canadian Sea Cadet Corps, Lonsdale, BC, Cadet CPO M.C. (Mike) Sanderson (18) of RCSCC "Skeena", Ontario, and Cadet CPO R.J. (Olly) Olinger (18) of RCSCC "Dawson", BC, were actually away from home seven months, with the first three months spent in Cadet Camps.

The cruise they were on was a major deployment of two destroyers, HMC Ships "Qu'Appelle" and "Gatineau" and the tactical support ship "Provider". In the 33,000 miles which the Canadian ships steamed they were involved in three major marine warfare exercises.

The first exercise, called ASWEX RIMPAC 72, involved aircraft, ships and submarines from Australia, Canada, New Zealand and the United States, doing their thing in Hawaiian waters. Rear Admiral W. J. Dovers,

RAN, Commander Australian Fleet, described the exercise as one of the most important of the year.

The second exercise took place off the coast of Australia, with units from Australia, Canada, and New Zealand. Called JUCEX 86 (Joint Unit Course Exercise Number 86), the mission was "to exercise units" in joint anti-submarine warfare in a multi-threat environment.

The final ten-day exercise again involved aircraft, ships and submarines from the four Pacific Rim nations, Australia, Canada, New Zealand and the United States. This was the largest exercise of the year for the New Zealand navy, and its code name was LONGEX.

In between exercises port calls were made in order to brief and debrief in connection with exercises, to 'show' the Canadian flag, and also to provide some time for the ships' companies to relax. "Qu'Appelle" called into Pearl Harbour; Western Samoa; Sydney and Townsville in Australia; Auckland, Wellington and Dunedin in New Zealand.

Visiting other countries is always interesting, and our three adventurers were no exception to that. They particularly found Western Samoa fascinating. There they found a culture and a way of life totally different from the North American way of life. The people treated them so politely and kindly they could hardly believe it. The weather was hot, and it got even warmer when a group of young Samoan girls taught them the hula dance and some native songs.

In Australia they visited two Australian sea cadet corps, "Training Ship Snapper Island" in Sydney, and "Training Ship Coral Sea" in Townsville. They found the climatic change between Sydney and Townsville dramatic as they travelled from a moderate atmosphere to a sub tropical area. Australia too is very different in many ways from Canada, in fact it is different in many ways from any other country in the world. Mike Sanderson just about jumped out of his nautical skin when a cute, cuddly Koala bear roared at him like a Grizzly bear. In the north Michael Stewart had a memorable trip inland where he saw a bit of the famous Australian Outback'.

New Zealand also was extremely friendly to our three cadets. 'Olly' described it as the most picturesque country he had ever seen, and one of his memorable experiences there was driving on the wrong side of the road. Actually he was driving on the right side, and in Canada it would have been the correct side, but in New Zealand the right side is the wrong side, if you know what I mean.

The last big impression left in the minds of our three sailors was the immensity of the Pacific Ocean. It took the Canadian ships 17 days to travel from New Zealand straight home to Esquimalt, BC, and in that time had covered just a small part of that great body of salt water.

Michael will be going back to school now, on to University, and then he hopes to join the RCMP. 'Olly' hasn't made up his mind yet about the future, although he has been considering the possibilities in the Canadian Armed Forces. Mike will be going back to school, with no definite plans beyond that. Asked if he would join the Canadian Armed Forces, he replied, "Perhaps, but not at the seaman level. The only way would be through university in order to join as a Commissioned Officer'. He must have had enough of washing dishes at 23 per minute.

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TASMANIA

Compiled by A. J. Lee

Prior to his retirement, the Senior Officer (Tasmanian Division) Lt Cmdr B. J. B. Morris was promoted to the rank of Commander. On the 31st December he handed over to his successor Lt Cmdr A. E. Gates, the ex-commanding officer of T. S. DERWENT. The Divisional Executive Officer (Lt Cmdr Hamilton-Smith) has transferred to the mainland. His position has been filled by Lt Cmdr G. T. Boxhall who also holds the position of Training Officer.

Commander G. Campbell has been elected State President of the Tasmanian Branch Navy League, succeeding Commander Robb who has left on holidays to the UK.

Lieutenant J. D. Heath has been appointed commanding officer of TS DERWENT. He was one of the original founding cadets of DERWENT in 1951. He served his national service in the RANR(NS). He returned to DERWENT as a Sub-Lieutenant.

TS LEVEN has purchased a Brooker 14-foot dinghy and 20HP outboard for $1195 for their Unit, raising the money by raffles.

TS YORK (George Town) is seeking approval for its plans of a Headquarters. The giant company Comalco is supporting the unit's appeal for funds to build.

On 5 February, 19 Officers, 17 Instructors, and 83 cadets of the Naval Reserve Cadets entered camp at Fort Direction for Tasmanian Division ACT. During the ACT the cadets used the SLR Rifle on the Sandford Rifle Range by the kind permission of the Club President. Other activities were: boating using two whalers and dinghies from DERWENT Unit, a half-day cruise in HMAS BASS, small bore shooting and duty division.

The cadets were tantalised to see HMA Ships ANZAC, STALWART, ARDENT, ARROW, OVENS and the Army Ship BALIKPAPAN pass up river to Hobart but no arrangements could be made to visit them.

The camp was commanded by Lt Cmdr A. E. Gates.

Trophies won during the camp were: Best Division, Foretop (Lt Stroud); Runner-up, Quarterdeck (Lieutenant Lee), A. J. Williams sailing shield, TS DERWENT and Aggregate Shooting Shield, TS EMU.

TASMANIAN DIVISION (left to right): Lieutenant Commander G. T. Boxhall, Divisional Training Officer and the new Divisional Senior Officer, Lieutenant Commander A. E. Gates.

Join the NAVAL RESERVE CADETS

If you are between the ages of 13 and 18 years:

The Naval Reserve Cadets are administered by the Commonwealth Naval Board.

The Naval Reserve Cadets provide for the spiritual, social and educational welfare of boys and to develop in them character, a sense of patriotism, self-reliance, citizenship and discipline.

Uniforms are supplied free of charge.

Cadets are required to produce a certificate from their doctor to confirm they are capable of carrying out the normal duties and activities of the Cadet Corps. If injured while on duty, Cadets are considered for payment of compensation.

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.

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

SENIOR OFFICERS, NAVAL RESERVE CADETS:
NEW SOUTH WALES: Staff Office Cadets, HMAS Watson, Watsons Bay, NSW, 2030.
QUEENSLAND: C/- 39 Pinecroft Street, Camp Hill, Queensland, 4152.
WESTERN AUSTRALIA: C/- 182 Coode Street, Como, 6152.
SOUTH AUSTRALIA: C/- Box 1529M, GPO, Adelaide, 5001.
VICTORIA: C/- Room 6, 2nd Floor, 528 Collins Street, Melbourne, 3000.
TASMANIA: C/- 3 Winmarleigh Street, Taroona, 7006.
AUSTRALIAN CAPITAL TERRITORY: Industry House, National Circuit, Barton, 2600.
NORTHERN TERRITORY: Mrs V. M. Slide, 12 Allen Street, Fannie Bay, 5790.

TO: The Senior Officer,
Naval Reserve Cadets.
I am interested in joining the Naval Reserve Cadets and would be pleased to receive further information.

NAME.....

STREET.....SUBURB.....

STATE OR TERRITORY.....POSTCODE.....

PHONE No.....AGE.....

(Please Print Cleary)

Please address your envelope to the Senior Officer in your State or Territory — see list of addresses above.

NEW VOSPER THORNYCROFT 75-FOOT DESIGN

Prototype KEITH NELSON 75 foot patrol boat on trials.

The latest, and largest, in the Keith Nelson range of glass-reinforced-plastics hulled patrol craft is a 75-foot design intended primarily for coastal fishery protection duties.

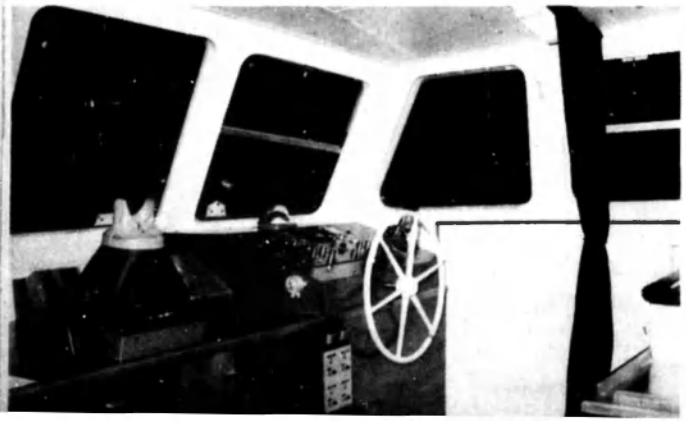
This design combines the expertise derived from the earlier and smaller Keith Nelson designs developed by Commander Peter Thornycroft with the immense Vosper experience in the development of high speed craft. Apart from fishery protection duties the new patrol craft are suitable for coastal patrol in customs, immigration and police roles, and for air-sea rescue duties.

Vosper Thornycroft Limited have built two prototype craft to this design as private venture demonstration vessels, and intend to build a number of them for stock so that they can be offered on short delivery.

The new 75-foot design has a round-bilge hull form, with a spray-deflecting knuckle running the full length above the waterline, suitable for a range of top speeds up to about 30 knots. In the present version, power is provided for 24.5 knots. An armament of two 20-mm machine guns, one forward and one aft, is planned. Light machine guns can also be mounted on the bridge wings.

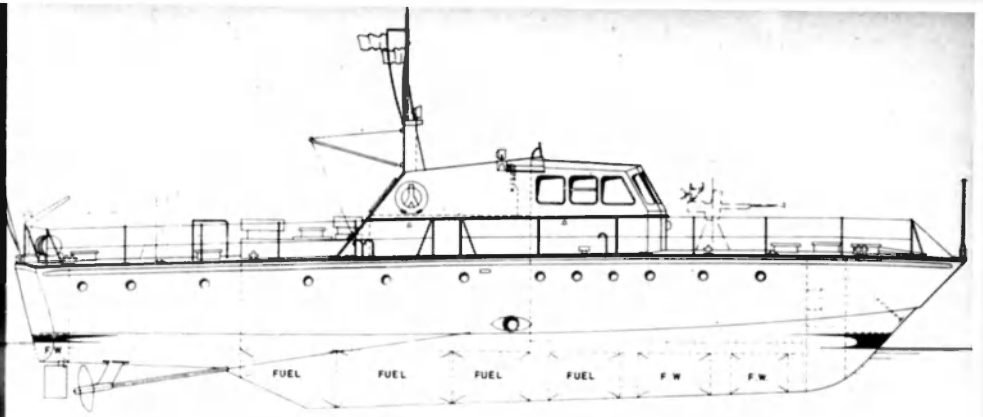
The whole of the hull shell and deck are of grp, moulded by the Tyler Boat Co Ltd. Integral tanks for fuel and freshwater are moulded in, and a system of transverse top hat framing with floors and longitudinal girders in the bottom provides the great strength needed when vessels of this size are driven hard in rough water. There are five marine ply watertight bulkheads. The superstructure, embodying the deckhouse and bridge, is of aluminium alloy construction, part welded and part riveted. Throughout great emphasis has been laid on combining strength with the light weight essential for high performance.

KEITH NELSON Patrol Craft: enclosed wheelhouse, which also acts as an operations and chartroom. Steering and engine controls are to starboard, radar display and navigation instruments amidships and a generous chart table with chart stowage below to port.



In the craft being demonstrated the two main propulsion engines are Caterpillar D348 12-cylinder vee-form freshwater cooled diesels with charge air cooling and turbo-chargers. The maximum continuous rating of each engine is 920 bhp at 2000 rev/min. MG527 marine reverse-reduction gearboxes, with reduction ratio 2.07:1, incorporating ahead and astern thrust bearings, are fitted. The main engines can be controlled from the wheelhouse and open bridge. Full instrumentation is provided in the wheelhouse, with audible alarms on the open bridge. Propeller shafts of Monel-K carry nickel aluminium bronze fixed-pitch outward turning three-bladed propellers. Shaft brackets and rudders are also of nickel aluminium bronze.

Two diesel alternator sets are fitted, supplied by G & M Power Plant Co Ltd, each giving 15kVA12kW at 240-V, 60-Hz, single phase. Power for

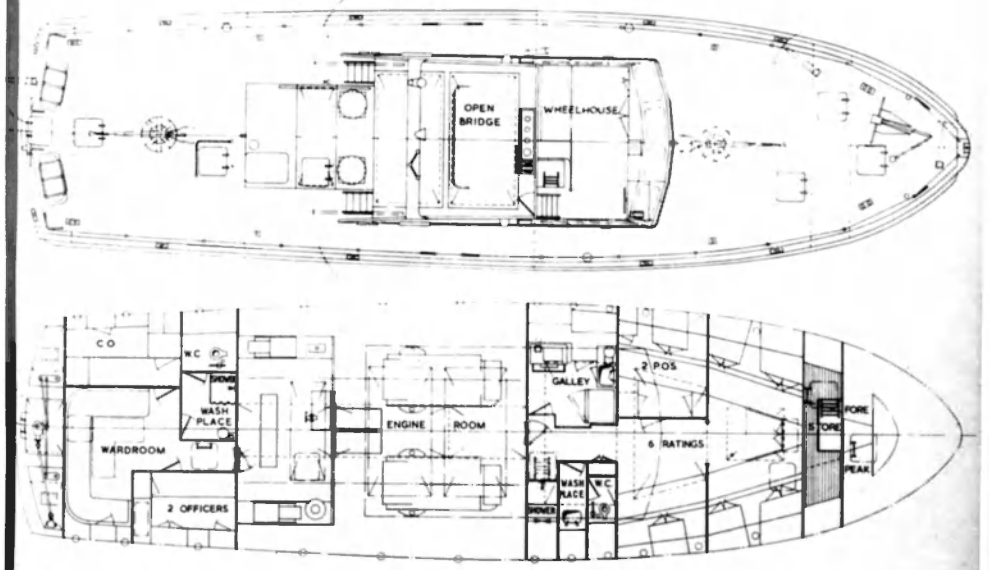


75 FT PATROL CRAFT

PRINCIPAL DIMENSIONS

LENGTH OVERALL	75'-0"
BEAM MOULDED	19'-6"
BEAM OVER FENDER	20'-0"
DEPTH MOULDED	9'-8" AT STN
DRAUGHT EXTREME	5'-9"

DRG. No. 72 KN 05/3.



the 24-V dc system and battery charging is provided by a 100-A La Marche Constavolt A-40 transformer-rectifier, and by the main engines' battery-charging alternators. The auxiliary engines are arranged for local starting, but can be stopped both from the wheelhouse and open bridge. They are protected at these positions by visual and audible alarms.

The weather deck provides space for two gun positions, fore and aft, two 6-man inflatable life rafts and an inflatable rubber assault craft, with outboard motor and single derrick-type davit. The enclosed wheelhouse is large enough to serve as an operations room, with all navigation instruments, communications equipment and chart table. Abaft the wheelhouse is the open bridge. Access to the open bridge and lower deck is at the starboard after corner of the wheelhouse. There are steering positions on the open bridge and in the wheelhouse.

A particular feature of the craft is the spacious engine room, with main and auxiliary machinery and electrical switchboard. This makes for ease of maintenance; there are also portable access hatches over the main engines and the generators and switchboard. Forward of this is accommodation for six junior ratings in an open messdeck with settee berths and generous locker space. A double cabin is provided for two senior ratings. The galley is to port, and toilet compartment to starboard, with shower, washbasins and WC. Forward of the next watertight bulkhead are store and forepeak, these two spaces being separated by another watertight bulkhead, with access from deck only.

The after accommodation, between the engine room and the aft peak, is arranged as officers' accommodation comprising a wardroom with settee and table, captain's cabin, a separate cabin for one or two officers, and another fully fitted toilet compartment. The accommodation spaces fore and aft are fully air conditioned, by separate Norris Voyager units.

With the new 75-ft design the Keith Nelson range (which also includes 34-ft, 40-ft, 45-ft and 60-ft craft) can cater for most requirements for light coastal and estuary patrol work.

75-ft patrol craft

Length overall	75ft 0in (22.85m)
Length, waterline	65ft 0in (19.80m)
Beam, moulded	19ft 6in (6.00m)
Draught	4ft 11in (1.50m)
Main engines	2 x 920 BHP diesels (Caterpillar D348 V12)
Top speed	24.5 knots
Range	800 nm at 20 knots

TASMANIAN DIVISION, NAVY LEAGUE OF AUSTRALIA

President's Report . . .

(Tabled at the annual general meeting of the Tasmanian Division Council at LAUNCESTON, Saturday, 13 January, 1973)

First let ma welcome delegates to our 1973 annual meeting and take this opportunity of thanking everyone for their wholehearted support over the past twelve months. I extend a special welcome on behalf of us all to the delegates from our newly formed West Coast branch and wish them every success especially with their sea cadet unit TS MACQUARIE which I trust will soon receive official recognition from the Naval Board.

Your Executive Committee has met regularly at bi-monthly intervals dealing with a considerable quantity of administrative detail. To comply with Article 101(b) requiring a membership of five, the President of the Hobart Branch (Lieutenant P. Herrington) and the Senior Officer ASCC (Commander Morris) were invited onto the Executive Committee and accepted.

Amalgamation

As in the four preceding years, our activities were influenced by the slow advent of Amalgamation — the naval take-over of our sea cadet units — leading eventually to changes in Navy League's responsibilities and financial position vis-a-vis the Australian Sea Cadet Corps.

In my annual report last year I enumerated the steps already taken to implement Rationalisation. Since then further significant advances have been made:

(i) The RAN assumed responsibility officially for the ASCC from January 1, 1973 introducing the title NRCs (Naval Reserve Cadets). The title, Australian Sea Cadets, originally Navy League Sea Cadets, was adopted when the Sea Cadet Council was formed in 1950; so, after twenty three years we see another change — sad but that's Progress!

(ii) **Stores at Unit Headquarters**

With the advent of additional staff for cadet duties at the Controlling Naval Establishments, NOIC has been able to recall from unit Headquarters most of the naval stores to HMAS HUON for issue to units when required, greatly reducing Navy League's responsibilities.

(iii) **Rental for Unit Headquarters**

After again inspecting all our unit Headquarters, the Ministry of the Interior has, I understand, submitted to NOIC for consideration its assessment of rent to be paid to our branches for their use by Naval Reserve Cadets. This was done without consultation with our Executive Committee or with Branch Presidents so we do not know how the figures were obtained. Let us hope that the proposals were based on our maintenance costs, depreciation and number of cadets under training. No doubt they will eventually be forwarded to us for consideration.

(iv) **Divisional Staff**

A strong move by the Secretary of the Navy to reduce the divisional staff of the Senior Officer Sea Cadets presumably on economic grounds from four to one deputy, met with strong opposition from Navy League circles on the Mainland. It was proposed to replace them by PNF officers. As these would be under the direct control of the NOIC, it was felt that the Senior Officer's position would be untenable. In Tasmania we intimated that we would be prepared to lose the Divisional Stores Officer and the Deputy Senior Officer. However, it is now thought that the matter will be dropped or considerably modified.

(v) **Uniforms of Sea Cadet Officers**

When the original intention of doing away with the present 'wavy' stripes was cancelled, I was asked by the Federal President for Tasmania's views. After discussion with Commander Morris, I wrote saying that our officers were not only proud of their 'wavy' stripes but as civilians preferred them to naval uniform.

Senior Officer, ASCC — Retirement of Commander B. J. B. Morris

Congratulations to our old friend 'Bernie' Morris on getting his brass hat! His retirement from the post of Senior Officer on account of age has come as a sad blow to us all. As State President I am required to keep in close touch with the officers and instructors of our units. Commander Morris has made this an easy task. He was captain of the annual sea cadet camp at Fort Direction for more years than I can remember. Under his able and dogged leadership, the efficiency and morale of our Tasmanian Division have reached an all time high. We wish his relief, Lt Commander A. Gates, every success.

Navy Week Activities

I was delighted to see so much Navy League activity during Navy Week in October 1972, an 'At Home' in Hobart and Navy Week Balls in Launceston and on the North West Coast, to mention only some of the highlights. I trust these will become annual events providing valuable advertisement for the league. If NOIC is given sufficient notice I feel sure that he will arrange for a naval presence at our functions during Navy Week.

The West Coast Branch

The West Coast Branch of Navy League was formed in June of 1972. Accompanied by my secretary Lieut Heath, I spent the weekend of July 22, there, addressing a meeting of interested persons in Queenstown. Later I inspected the proposed unit headquarters at Strahan Railway Station and the 90ft ketch REGINALD M they intended using as a training ship for their newly formed sea cadet unit. Commander Morris, accompanied by the Divisional Training Officer Lieutenant Commander Boxhall, inspected the unit in October and, like me, was greatly impressed by the enthusiasm and keen interest displayed by all concerned. With over 70 boys drawn from as far apart as Zeehan and Strahan, a distance of forty-eight miles, they have a transport problem. This is partly solved by holding the weekly parade at Murray High School in Queens-

town attended by all the cadets of school age.

North Tasmanian Branch, Launceston

Early in June I was informed that owing to internal dissention and the resignation of its committee, our Launceston Branch had collapsed with money owed to the bank and sundry outstanding local bills. A general meeting was called to which interested persons were invited. This was attended by our full Executive Committee. I am pleased to report that a strong committee was elected with the Harbourmaster of Launceston, Captain W. Skinner, as President.

In the course of discussions certain anomalies concerning Navy League's constitution were unearthed. There was no provision for terminating unharmonious membership. It was also found that all branches were disregarding Article 2 — the limiting of numbers to 5,000. These have been brought to the attention of the Federal Secretary, our Legal advisors also intimated that we were unconstitutional by:—

(i) reducing without permission the annual subscription for membership laid down by the Federal Council vide Article 69 (a) — $4.20 including 90c for the magazine "Navy" and (ii) accepting new members without their signatures on the official Navy League membership forms. In law the validity of our membership is therefore apparently questionable.

The Tasmanian representative at the annual Federal Conference in Canberra next month will again raise the question of our reduced subscriptions. My Secretary has received a copy of the correct membership form from the Federal Secretary and has had a stock printed for circulation to all branches. I would ask the branch secretaries to ensure that these are used in future.

The Andrews Efficiency Trophy

TS DERWENT won the Andrews Trophy this year. After witnessing the annual inspection of all units by NOIC in 1972, I heartily endorse his selection of the Hobart unit. In spite of their untiring efforts to complete their new headquarters throughout the year, the efficiency and appearance of the unit reached a very high standard. Their victory was well deserved and reflected great credit on the Commanding Officer Lt Cdr Gates and his staff.

TS DERWENT — Request for a State Government Loan

It will interest all branches to learn that Hobart's efforts to raise a State Government loan to complete their unit headquarters have been delayed by a further complication. The Tasmanian Government insists that such a loan can only be granted to a public company registered in Tasmania. We are of course only a division of the Navy League of Australia which is registered in Canberra! They are working on this obstacle and are hopeful of getting round it shortly.

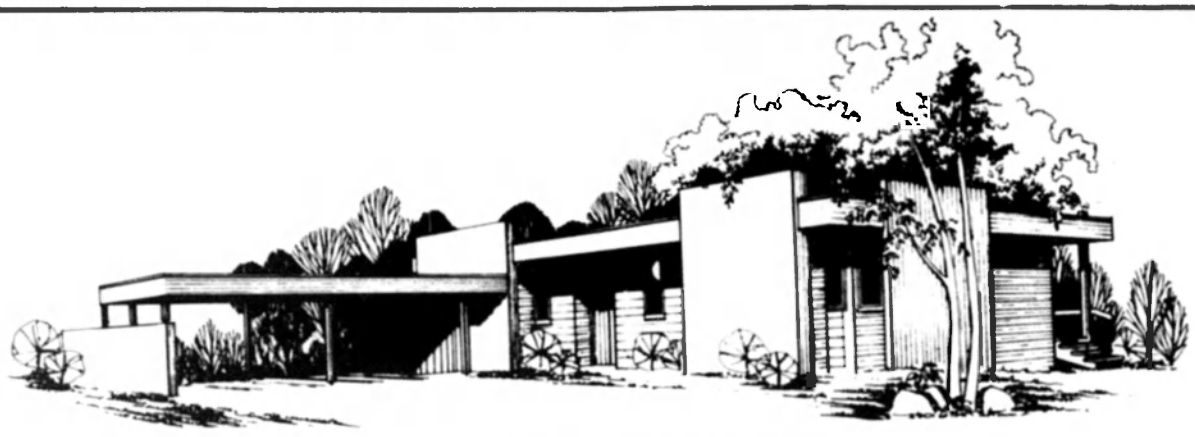
Annual Sea Cadet Camp at Fort Direction

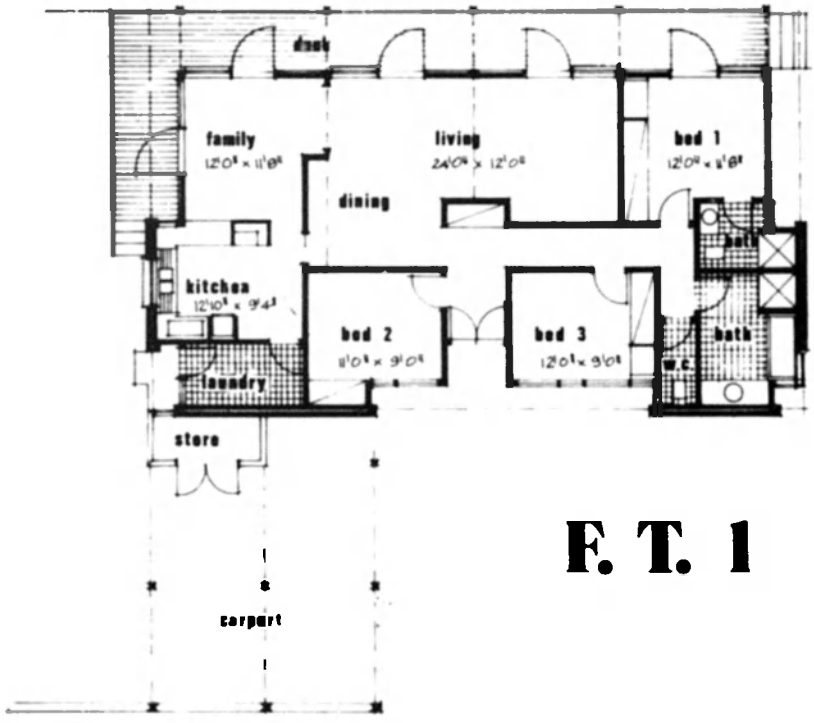
I spent a very enjoyable day on May 14 at the annual camp under the command of our senior Officer, Commander Morris. It was Open Day commencing with Church Parade, a pleasant non-denomination service at 1030 followed by light refreshments and well attended by parents and friends. Sailing races and a marathon in brilliant sunshine were some of the attractions. All members of Navy League are cordially invited and I can thoroughly recommend a visit this year on Sunday, February 11 to all those interested in sea cadet training.

We are all disappointed that for economic reasons the camp has again been curtailed this year to seven days, too short to allow the boys to settle in and derive full benefit from the continuous training. But is indeed pleasing to see that the Army has been able to accommodate them this year in February instead of during the wintry month of May.

Finally, as this is my swan song, may I thank all members of the Executive Committee for their loyal support and interest throughout the past year, and also say how much I have enjoyed my four years in the chair. I am sure my association will give similar assistance to my successor and I wish them Good Luck.

J. M. ROBB,
State President,
Tasmania Division.
NAVY LEAGUE OF AUSTRALIA.





F. T. 1

For those with a Modern Trend, may we suggest you have a close look at the F.T.1.

* Sweeping Drive to Double Car Port
* Five Sliding external Cedar Doors, Custom made connect: Family, Living and Main Bedrooms with wrap-around verandah.

KALEJS & HEDGES
MASTER BUILDERS

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