JOURNAL OF THE AUSTRALIAN NAVAL INSTITUTE

VOLUME 9 MAY 1983 NUMBER 2

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AUSTRALIAN NAVAL INSTITUTE

1. The Australian Naval Institute is incorporated in the Australian Capital Territory. The main objects of the Institute are:
   a. to encourage and promote the advancement of knowledge related to the Navy and the maritime profession,
   b. to provide a forum for the exchange of ideas concerning subjects related to the Navy and the maritime profession, and
   c. to publish a journal.

2. The Institute is self supporting and non-profit making. The aim is to encourage discussion, dissemination of information, comment and opinion and the advancement of professional knowledge concerning naval and maritime matters.

3. Membership of the Institute is open to —
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In order to achieve the stated aims of the Institute, all readers, both members and non-members, are encouraged to submit articles for publication. Preferably, submissions should be typed, double spaced, on A4 paper; the author's name and address must be shown clearly, even if a pseudonym is required for printing purposes; to be eligible for prizes, original articles must be accompanied by statements that they have been written expressly for the ANI; and short biographies will be welcomed. The Editor reserves the right to reject or amend articles for publication.

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JOURNAL OF THE AUSTRALIAN NAVAL INSTITUTE (INC.)

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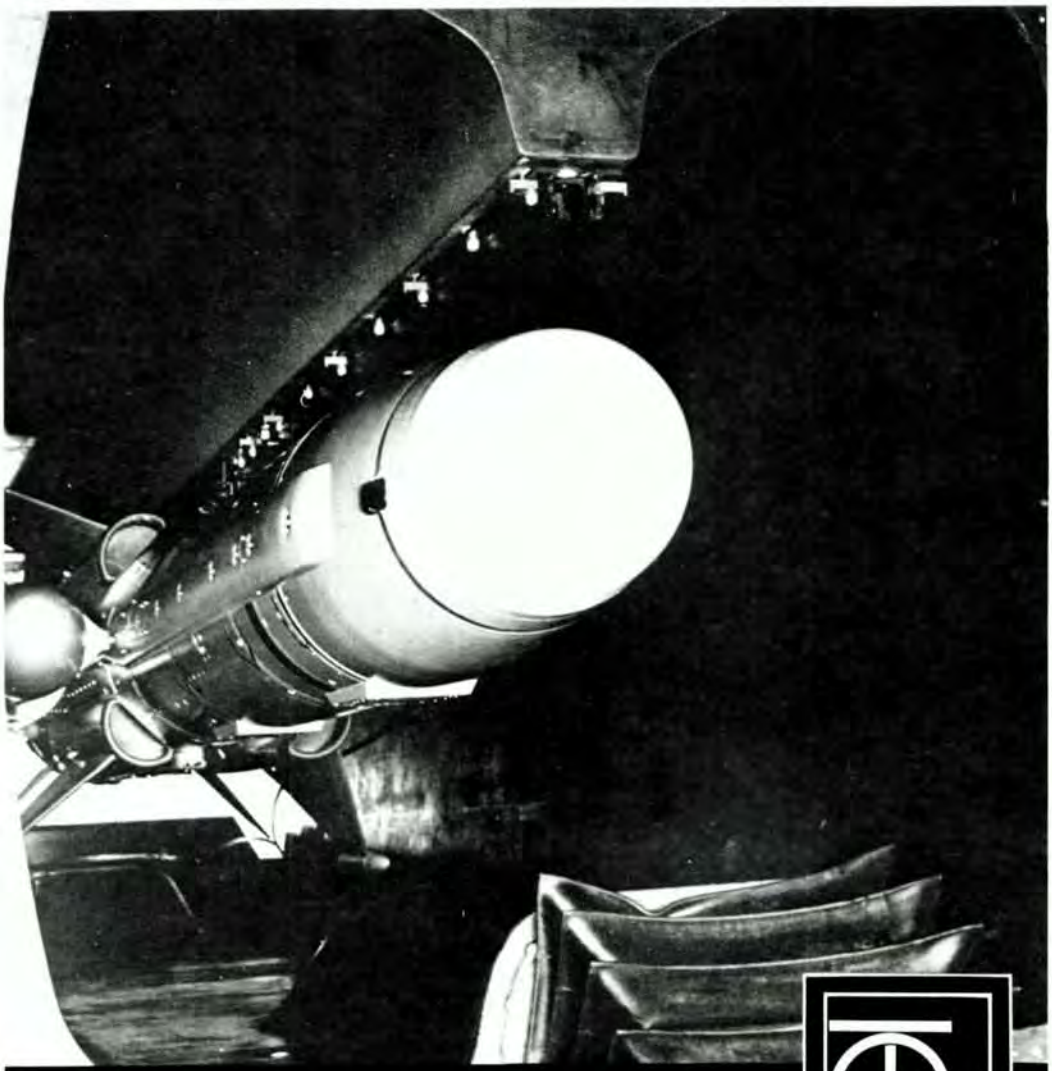
The front cover: *HMAS MELBOURNE.* — courtesy R. Gillett

OTOMAT: THE WAVE RIDER BEYOND THE HORIZON



Capability up to 100 N.M. (Operational firing 1.10.81 at 67 N.M.),
Speed: mach 0.9, Warhead 260 kg (Impact and proximity fuzes),
Gyro autoguided (± 200°) at launch, Different attack paths,
Simultaneous engagement capability.

OTO MELARA

EFIM FINANZIARIA E. BREDA

OTO MELARA Via Valdilocchi, 15 - La Spezia (Italy) - Tl. (0187) 530.111 - Tx. 270368-211101 OTO I

FROM THE EDITOR

This edition of the Journal sees a change of editor. Robin Pennock is on his way to South Australia and I would like to take this opportunity to thank him for all his hard work and to wish him well in his new appointment. I take over having had experience on the editorial sub-committee with three former editors.

There is a historical bias to several of the articles in this edition. Admiral Sir Victor Smith continues the carrier debate with a piece on the lessons of naval history which are never learnt; Lieutenant Commander Jones provides a follow up to his earlier article on naval aircraft, and Commander Brecht reveals some research he has done into the origins of *MELBOURNE*'s second bell. Captain Noble has a survey of early navigation problems and Commander Tritten USN brings some of Mahan's views on seapower up to date.

On more recent themes, there are two articles relevant to the Chief of Naval Personnel's letter of February 1983 on 'Activity, Fitness and You'. Commander Saxon has commented on the relationship between diet and fitness, and there is also the Peter Mitchell Trust Essay Competition prize winning essay on physical fitness in today's navy, which proposes a move away from compulsory training and greater attention to older personnel.

The RAN Staff College's prize winning essay by Lieutenant Commander Gahan on maritime strategy is also included, and there is a short piece to bring readers up to date on the Australian Maritime College with a suggestion that the RAN should perhaps send officers and sailors to study there.

In addition to the regular features, there is a current membership list and a cumulative index for Volumes 1–8. I have personally set the latter on a microcomputer in a wordprocessing and data management package, so please notify me of any errors. I can be contacted at the Journal address or by telephone on 062-654892.

Finally, I have received a couple of suggestions, and offers of contributions, for a future edition, possibly November 1983, to be devoted to such matters as hydrography, oceanography, meteorology, coastal surveillance and law of the sea — contributions will be most welcome, and new guidelines are printed on the inside front cover.

Geoff Cutts

ANNUAL PRIZES

Since 1977 the ANI has awarded prizes for the best major article and the three best minor articles published in the Journal each year.

Following a review of the rules governing the assessment of articles and the award of prizes, the ANI Council has decided that from 1983 onwards prizes will be awarded as set out below:

Best major article	$200
Runner up major article	$100
Best minor article	$ 25
Best letter to the editor	$ 25

To be eligible, all articles must have been written expressly for the Australian Naval Institute and be both original and accurate.

The two best major articles will be those which in the opinion of the Council make the best contribution to the aims of the Institute, ie, the advancement of knowledge and the exchange of ideas concerning the Navy and the maritime profession. Preference will be given to major articles which put forward new ideas and constructive comments.

Minor articles and letters to the editor will be judged on their interest, readability, aptness and where appropriate, humour.

Book reviews are no longer eligible for prizes.

1982 PRIZEWINNERS

The prizewinners for 1982 are:

- Commodore R.R. Calder, AM, RAN, for his article in Vol. 8, No. 1 — $75.
- Arachnid for his minor article in Vol. 8, No. 3 — $20 (as Arachnid did not submit his name and address at the time, perhaps he would like to reveal himself, in confidence, to the Treasurer!)

The President and Council of the ANI congratulate them both.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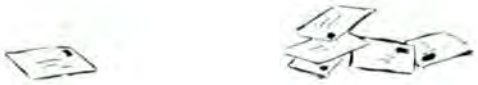


Correspondence

HMAS AUSTRALIA

Sir,

I have been told that the *HMAS AUSTRALIA* Veterans Association is seeking funds to finance the placement of a stained glass window in the Garden Island Chapel. The window is to be dedicated to that great fighting ship and the men who sailed in her. I draw this to your attention because I believe that all too often such worthy causes do not receive the publicity they deserve; in this case, many of the Journal's readers will have some connection with or recollection of the old *AUSSIE* and may wish to contribute. I believe that Mr. David Hopkins of 33 Winfield Street, Condell Park, NSW 2200, is the fund organiser.

Yours faithfully
R. Jemesen
LCDR RAN

Research Assistance

Sir,

My current retirement project is trying to complete a record of *Tasmanian Shipping Arrivals and Departures 1803 to 1842*. Hand in glove with that, I hope to follow with a 'bibliography' of ships' logs, journals, crew or passenger diaries etc relating to Australasian, Antarctic and adjacent ocean voyages since 1788. These narratives may be published or unpublished, and all I plan to do in my *Log of Logs* is to list very brief details of the voyage and the reference, or whereabouts of the material, for the benefit of researchers and the like. I would be grateful for any input, which can be addressed to me at 27 Euree Street, REID, ACT 2601.

Yours faithfully,
I.H. Nicholson

WHY SOPHISTICATED MARITIME DEFENCE FOR AUSTRALIA

Dear Sir,

As the immediate past Editor of the ANI Journal, I have received a personal letter from the author of the article 'Why Sophisticated Maritime Defence for Australia' (Volume 9, Number 1), pointing out that there were several errors in the article as it appeared in print.

These were typesetting/proofing errors, the most important of which appeared at the commencement of the paragraph at line 39 (column 1) of page 29. It should have read:

> 'Bearing in mind the geographic location of Australia and the questions concerning the reliability of supplies in an emergency, we must look towards strengthening our own capabilities in the field of electronic warfare.'

What more can I say!

Robin Pennock

MARITIME OPERATIONS

The following letter was written in response to an article summarising Frank Allica's 'What If no Carrier' (Vol. 9, No. 1) which appeared in The Canberra Times. *The letter is reproduced with the permission of the author and the CT.*

Sir,

I refer to the news item on page 11 of *The Canberra Times* dated March 30 by your Defence and Aviation Correspondent, Frank Cranston.

I trust that Lieutenant Commander F.A. Allica will discontinue "mooting" to your readers and those of the October edition of *The Journal of the Australian Naval Institute*, that the RAN should ... "take control of the RAAF's maritime patrol squadrons ...".

In truth, Allica is merely raking over the ashes of naval aspirations throughout the years. Even minimal research by him would have prevented his assertion.

On several occasions in England the Admiralty has endeavoured to take over command (or control) of the then-Coastal Command of the Royal Air Force. It was, on at least one of those attempts, that the late Lord Louis Mountbatten was Chief of the Defence Staff in the Ministry of Defence, in London. Those discussions and debates continued up to the highest levels of defence and government in the United Kingdom.

The Royal Australian Navy also has proposed, from time to time, that the maritime-reconnaissance elements of the Royal Australian Air Force should be taken over by the Navy. The forums for those investigations have been at similar levels to those in the United Kingdom.

The Australian and English decisions have been as consistent as they have been correct, as correct, in fact, as not to replace Melbourne with another carrier.

In summation, they are crystal clear — let navies continue to control operations against forces on or below the surface of the sea, whilst air forces must continue the exercise of air power in all of its roles, including maritime reconnaissance and maritime strike.

Readers should appreciate that the maritime-reconnaissance squadrons of the RAAF, and these embrace both air and ground crews, have progressively, through exercises, inter alia, with similar forces of many other nations, built up international recognition of, and renown for, their expertise and performance.

Indeed, had Allica extended his research he would have ascertained also that the late General Eisenhower, supported by the late Lord Montgomery, avowed, at the close of the European operations during World War II, that air forces were then, and would continue to be, predominant amongst the other armed services and paramount in their weapon-effectiveness.

(Air Vice-Marshal) C.D. Candy
RAAF (Retired)

JUST WARS

Sir,

I agree with the general proposition stated by Father Michael Head in his letter published in the November 1982 Journal that naval officers need to have a broad general education. I agree also that there is a need to achieve a balance between officers' training and education and that this is an appropriate objective for the 'experts' responsible for the development of naval officers.

Nevertheless, I think it is fair to point out that the Navy has, in the past ten years, made some progress in finding a reasonable balance between the training and education of its officers. For example, tertiary education is no longer the preserve of junior officers of technical specialisation (as it used to be) because most General List officers now have the opportunity of completing a university degree as part of their initial training. Also, introduction of various education assistance schemes such as SVETS, Civil Schooling and DFASS coupled with greater availability of part-time courses for adult students at most Australian universities and colleges, have brought opportunities for higher education within reach of most naval officers and many of them have, in fact, 'gone back to school'. No doubt, also, many of those who have not done so would like to, but are faced with pressure from their usual duties, sea-time and frequent change of postings, all of which create special difficulties for members of the Navy who enrol in academic courses.

Finally (on this question) whilst I support Father Head's view that the training system has a responsibility to provide for the educational development of officers, I suggest that the role of the individual in this process should not be overlooked. In too many cases, the liberal education available to junior officers is squandered because the individual concerned has not had the proper motivation or determination to make full use of his opportunities. Certainly the system can lead the 'horse' to water — but it can't make him drink!

As a separate matter I query Father Head's comment that: 'You have to believe in the possibility of a just war and that a young naval officer should be able to argue the morality of a just war cogently and persuasively'.

I suggest that the doctrine of just wars, which I understand to be derived from the teachings of St Augustine (354-430), is no longer acceptable under International Law as a justification for conflicts between states. St Augustine defined a just war, inter alia, as one for the avenging of injuries where an offending state neglected to punish wrongs committed by its citizens or to restore what had been unjustly taken by it. Alternatively, St Augustine argued that a war is undoubtedly just which God himself ordains.

The theory of just wars began to break down in the 16th Century. The apparent cause of its demise was that theologians at that time were particularly concerned with the state of a man's conscience and admitted that each side would be blameless if it genuinely believed that it was in the right, even though one of the sides might have been objectively in the wrong. This theory was replaced by the doctrine of 'vital interests'. However, as each state remained the sole judge of its vital interests, in practice there were no limits on the right of states to resort to war.

As an aftermath of the First World War, various attempts were made to curb or proscribe warlike acts by states. These included Article 12(1) of the Covenant of the League of Nations which required a three month period of arbitration (and cooling off) before resort to war and the Kellogg-Briand Pact which was signed in Paris in 1928. Signatories to this latter pact included almost all of the states then in existence. The Pact condemned recourse to war for the solution of international controversies and provided for resolution of disputes by pacific means only. Failure of Germany to comply with the provisions of the Pact was subsequently one of the bases for the charges of 'crimes against humanity' which were found against the Nazi leaders tried by the Nuremberg Tribunal.

Since 1945, it is argued that war has been outlawed by virtue, primarily, of Article 2(4) of the United Nations Charter which provides:

> 'All members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state or in any other manner inconsistent with the purpose of the United Nations'.

When Article 2(4) is read in conjunction with other provisions of the Charter, especially Article 2(3) and the preamble, it compels the view that any breach of the peace is automatically contrary to the purposes of the UN and is *a fortiori* illegal. This broad interpretation is also supported by the judgment of the International Court of Justice in the *CORFU CHANNEL* case in 1949 and is now generally regarded as a rule of customary international law.

Inevitably there are exceptions to this general rule and these exceptions form, in my view, the only legal justification for armed conflict. These are:

- Action taken or authorized by the UN; eg, Korea, The Congo
- Self Defence — under Article 51
- Actions by regional agencies subject to the authorization of the Security Council — under Article 53.

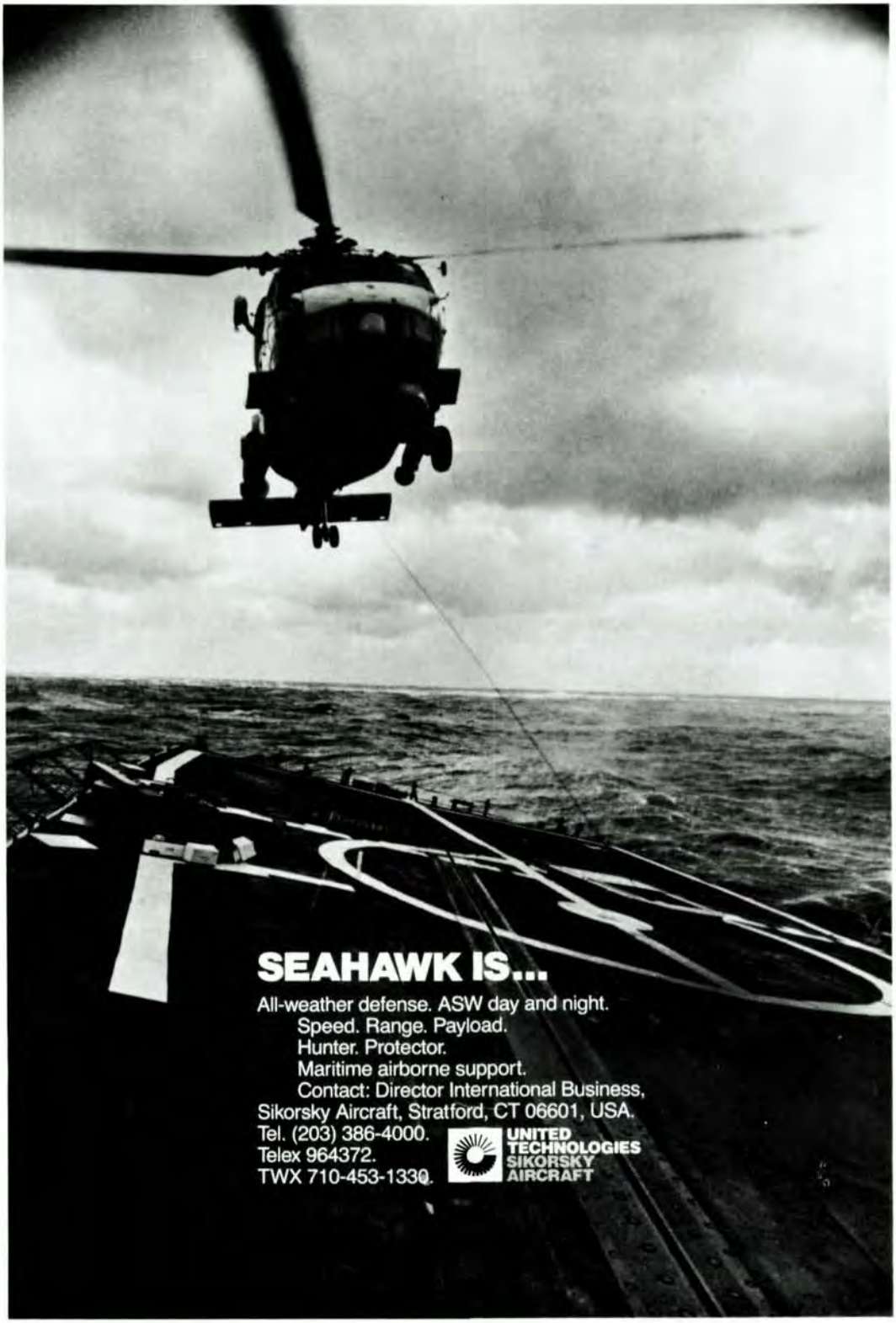
It is notorious, of course, that since 1945 there has frequently been resort to the use of force by states in conflicts which could only properly be described as war. Nevertheless, support for the view that war is illegal arises from the fact that in only one of these conflicts, namely the Indo-Pakistan War of 1971, did the combatant nations declare that a state of war existed between them. All other conflicts were fought either without any attempt at justification (a minority) or else by seeking to justify the conflict by invoking one or other of the exceptions provided by the UN Charter.

I suggest also that adherence to the provisions of the Charter is not merely because of an altruistic desire by states to maintain international law and order, but primarily for the very practical reason that modern war is fought in the full glare of publicity. As was so clearly demonstrated in the Vietnam War, favourable world opinion is now fundamental to military success in a prolonged conflict.

The essential point which I seek to make is that the legal basis for armed conflict must be objectively argued within the four corners of the UN Charter. The subjective moral considerations inherent in the term 'just wars' are unsatisfactory because of their uncertainty of application.

Perhaps I have read more into the phrase 'just war' than was intended by Father Head in the context of his very interesting letter. If this is so, then I trust that the foregoing discussion will be seen as a development of his comments and not as a criticism.

Gerry Purcell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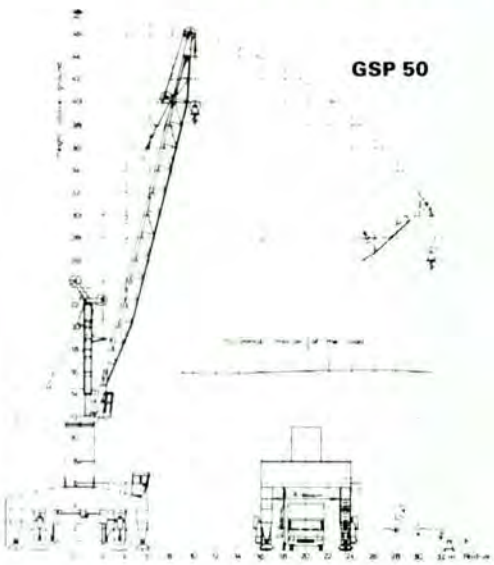

GSP 50

Technical Data

Maxi. capacity (SWL)	50t × 11m
Average capacity	25t × 18m
Maxi. radius	10t × 31m
Lifting height above quay	25m
Level of driver's seat	14mm
Clear under portal (w×h)	5.6m × 5.6m
number of wheels ( )	4 (2.25m)
Turning radius	16m
Speeds: hoisting 50t	21m/mm
25t	42m/mm
12t	75m/mm
— luffing	30m/mm
— slewing	1.5r.p.m.
— travelling	4km/h
Diesel	600 H.P.
Autonomy with full load (hours)	8h
Total weight in operation	168t
Standard (F.E.M.)	B.2.4
Wind in operation	72km/h (45mph)
Wind out of operation	150km/h (95mph)

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ADVENTURES OF A NAVAL TROPHY

by Commander A.H.R. Brecht RAN

When the dust finally settles on the future of naval aviation in the RAN, some important and far reaching decisions will have to be made on manpower requirements and about equipment items no longer needed. Among the latter will be the fate of *HMAS MELBOURNE*. One of the most unusual matters for resolution might well be the question of what to do with her second ship's bell which has hung on the quarter deck, almost as a decoration (although many heads have bumped it) for years.

I first became intrigued with this ornament in 1976 and wondered how it came to be, because warships normally have only one bell; research reveals that this particular trophy has an interesting background which I hope readers might enjoy. (I should point out that our naval archives only show the written arguments or decisions, which often leave unclear what people really *thought*, so in that context, my reconstruction of events could easily skim the surface in some areas. Nevertheless as far as possible this article gives the full story).

As may be seen from the photograph, the bell was presented to the first *HMAS MELBOURNE* in recognition of assistance given by her to the small coastal steamer *TAFF* at St. Lucia in the West Indies in April, 1916. Under the command of Captain M.L.'e. Silver RN, *HMAS MELBOURNE*, 5400 tons, eight 6" guns, was one of two light cruisers owned by the Australian Government as part of the Australian Fleet which arrived at Port Jackson on that fine spring morning of 4th October 1913. The other was *HMAS SYDNEY*. Both ships were assigned to the North American and West Indies cruiser squadron in 1915, under the 3rd August 1914 arrangement whereby the ships of the Australian Navy were placed under the control of the Admiralty, but commenced their war service in the Pacific, searching for the German Pacific Squadron led by Admiral Graf Von Spee in *SCHARNHORST*.

MELBOURNE had her first wartime success on 9th September 1914 when she destroyed the wireless station on the Pacific island of Nauru immediately after the New Zealand take-over of Samoa. Landing a small body of men at dawn she arrested the German administrator and demolished his facilities. Her best chance for fame and glory was missed however, due very much to Captain Silver's sense of duty. During escort work for the AIF troopships enroute to Egypt in November 1914, *HMAS MELBOURNE* assumed charge of the convoy just at the time the German raider *EMDEN* was detected at Cocos Islands. Silver's first reaction was to head at once for the enemy, but realising his prime responsibility, he detached *HMAS SYDNEY* to go instead. So close was immortality.

After convoy escort duty finished, *MELBOURNE* and *SYDNEY* proceeded via the Mediterranean to the West Indies where both ships helped to maintain a series of patrols, with Jamaica as the central point, watching neutral US ports where nearly 100 German merchantmen had taken refuge. Whether this duty generated much excitement is unknown, but it is doubtful that either ship fired a shot in anger.

MELBOURNE's involvement with *TAFF* is first recorded by her captain in a report dated 27th June 1916. Quite matter of factly, he states. '*RMSP TAFF*, a coasting steamer of 199 tons touched shore at Canaries Bay on 3rd April and during the night was practically washed broadside on to the beach in Canaries Bay by a considerable

The Author

Commander Alan Brecht joined the RAN in 1957 as a telegraphist and, after training, served in HMA ships *QUICKMATCH* (twice), *PARRAMATTA* and *MELBOURNE*. He attended the SD officers promotion course in UK as a Petty Officer Radio Supervisor, was promoted to Sub-Lieutenant SDEXC in January 1975 and served in the RN in *HMS DEFENDER* and *HMS MERCURY* (the RN Communications School). Since his return to the RAN in 1966 he has served in *HMAS PARRAMATTA*, the RAN Communications School, the Directorate of Naval Communications (twice), Naval Communications Station Canberra and *HMAS ALBATROSS*. He was promoted to Lieutenant SDEXC in January 1967 and transferred to the General List in 1970. He attended the RN Advanced Communications Course at the Royal Military College of Science, Shrivenham, UK in 1974 and then served as Communications Officer in *HMAS MELBOURNE*. He is currently CO of *HMAS CAIRNS*.

swell. I proceeded to her assistance on 4th April.' Captain Silver then lists certain problems he faced which indicate that the task was not as easy as he makes out. These included lack of a suitable chart; poor anchorage; difficult position of *TAFF*; heavy swell; variable currents; and the highest tide being at night. Nevertheless, in undemonstrative fashion, he goes on to conclude his report with the simple statements 'The difficulties were gradually overcome and *TAFF* came off at 2.45 am 7th April with very little damage' and 'I do not intend to claim salvage.'

MELBOURNE's accompanying statement of proceedings shows that the salvage was actually full of hazard and presented a formidable seamanship challenge. Four separate attempts were made over three days, requiring different towing rigs and arrangements, from an initial two 2½" hawsers to the eventually successful 6½" wire rope. In the final attempt, she manoeuvred stern to *TAFF*, sent across the tow, let go two anchors and 12½ shackles of cable, and then slowly shortened in to six shackles. After much effort, *TAFF* came off into deep water.

Captain Silver could hardly be accused of overstating his case, for his report barely covers one page. Fortunately for historians, the doctor onboard *MELBOURNE*, Surgeon Commander H.J. Brennard RANR, kept a diary which records that *TAFF* was a very important transport link between the north and south of St. Lucia: '. . . the loss of the steamer would have been a serious matter for the island.' He gives an insight into the drama in this extract:

> 'Three of *Melbourne's* officers had gone in the steamer for the trip to Saifriere and had nearly reached their destination when the steamer, by some mischance during the landing at Canaris (an intermediate port) was driven on some rocks close by the beach. The three men from *MELBOURNE* made their way back to Castries in a small boat after a hard pull of twelve miles, and the next day the ship went to the rescue. . . . at high water (7th) the *TAFF* was safely pulled off the rocks and presently proceeded to Castries under her own steam. Much to the satisfaction of all concerned.'

To all intents and purposes, as far as the Navy was concerned, there the matter ended; a relatively straightforward evolution satisfactorily completed. As events transpired, the story was actually only beginning. The following month, the owners of *TAFF*, the Royal Mail Steam Packet Company, offered to present Captail Silver with 'a service of plate' in appreciation of his efforts, but as has previously been seen, the good Captain had already stated that he wasn't going to claim salvage and it seems he wouldn't accept a reward either. Reading between the lines, the corres-

— A Brecht

pondence implies that the Company was a bit miffed at this rejection of its generosity, so it may have been with relief all round that Captain Silver finally agreed to have his ship presented with a suitably inscribed bell 'so as to recognise the part taken in the salvage operations by the whole of the crew.'

Letters passed between the Admiralty and the Australian Naval Board until October 1916 when all had agreed that 'no objections would be held to the acceptance of this present'. Some time soon after that, the presentation was made to *HMAS MELBOURNE* and there the matter rested. The bell stayed in that ship until she paid off in 1928. (I use the word 'rested' advisedly because the saga was far from over).

In September 1924, Mr A.E. Pretty, the Acting Director of the Australian War Memorial (established under the energies of WWI historian C.E.W. Bean), came to hear of *HMAS MELBOURNE's* presentation bell, and in an effort to build up the Memorial's relics collections, he wrote to Navy Office Melbourne asking that the bell be transferred to the War Memorial when the ship decommissioned. The bureaucracy responded with amazing speed considering the lack of urgency inherent in the request. In a minute dated only ten days later, the Director of Naval Stores recommended to the Naval Board that the request be approved and the War Memorial be so advised. Navy did not intend to let the bell go without restrictions however; thus the first clear statement of policy concerning its future came into being. In his manuscript comment of 9th October 1924, the 1st Naval Member (Rear Admiral P.H. Hall-Thompson, CB, DSO, RN) stated:

> 'It should be made clear that this bell can only be *lent* during any period when there is no ship called *MELBOURNE* attached to the RAN. On a new *MELBOURNE* being commissioned the bell would have to be withdrawn for reissue.'

This sentiment was notified to the War Memorial together with the fact that the RAN did not foresee decommissioning *HMAS MELBOURNE* for several years.

At about this time, the Bruce-Page government embarked upon a five years defence plan 1924/25–1929/30 which saw provision for the Navy of a 6000 ton seaplane carrier (*HMAS ALBATROSS*) two submarines (*OTWAY* and *OXLEY*), and two 10,000 ton '*County*' class 8" cruisers (*CANBERRA* and *AUSTRALIA*). The end for *MELBOURNE* and *SYDNEY* was in sight. In anticipation of *CANBERRA's* commissioning in 1928, *HMAS MELBOURNE* was sent to the UK to pay off and thus provide *CANBERRA's* crew. She decommissioned on 23rd April 1928 and was sold for £25,000 Sterling to the Alloa Shipbuilding Company, Rosyth, Scotland where she was broken up in 1929. *SYDNEY* met a similar fate.

Meanwhile, much had been happening in Australia. Detailed consideration throughout 1927 was given to the disposal of important relics and trophies from both ships, including *HMAS MELBOURNE's* special bell. Conscious of its 1924 promise, the Naval Board agreed to make certain items available to the War Memorial. Thus it was, that on Thursday morning 23rd February 1928, the bell and some other prominent pieces were landed at Garden Island's Man-O-War steps in Sydney for transfer to the War Memorial Museum in that city. (At that time the Canberra building did not exist).

One can almost imagine the sense of relief among those concerned when the bell was accepted at Man-O-War Steps. The directors of the War Memorial were delighted to have such an important Australian naval relic safely in their keeping after years of waiting, while for its part the Naval Board could be content that the bell was in good hands and would be given back when next an *HMAS MELBOURNE* joined the fleet. The matter at last was settled.

Or so it seemed. Those who have had experience of staffwork will be aware that two separate courses of action may sometimes be proposed to resolve a problem, with protagonists not necessarily aware of each other's views on a daily basis. Thus it was with the bell, if my understanding is correct. Buried in a routine letter to the Naval Board from the Commodore Commanding HM Australian Squadron (Commodore G.F. Hyde CBO, CBE, RN), dated November 1927 (*before* the bell was transferred) was a recommendation that:

> '. . . presentation articles should not be distributed as relics outside the service . . . this bell should be turned over to a RAN establishment pending a new *MELBOURNE* being built. An ordinary ship's bell is available for the War Memorial if required.'

Here was one naval officer who believed naval bells should stay in the Navy!

This recommendation seems to have either lain dormant while the transfer at Man-O-War Steps went ahead in February 1928, or for some reason its letter never reached the Naval Board until after the event. There may be an explanation not clear from the existing records, but whatever the reason, the 1st Naval Member (Rear Admiral W.R. Napier CGM, DSO, RN) must have felt it an awkward situation when on 19th June 1928 he reversed Navy's position by asking the Director of the War Memorial to return the bell so that it could be given to Flinders Naval Depot. His letter is delicately couched, to say the least.

To be fair, I must point out that no skullduggery is alleged. The CST Flinders had corresponded with the Naval Board (on 18th June 1928) regarding supply of a bell to replace his, ex *HMVS NELSON*, which was cracked; but no records remain to show whether this prompted Admiral Napier's letter to the War Memorial on the following day. Staffwork procedures and the closeness of the dates suggests that it did not, although the Admiral's mention of the FND requirement in *his* letter indicates that he was certainly aware of the depot's problem. The real reason for Navy's change of heart about the bell will probably never be known, and although no proof exists, it seems very likely that the recall letter did in fact have Commodore Hyde's recommendation as its basis, hence Admiral Napier's embarrassment.

Despite disappointment at Navy's request, the War Memorial agreed to return the bell and did so within three months. The Director asked for 'some other bell' from *HMAS MELBOURNE* in lieu but was informed that only an ordinary Service pattern bell could be provided. The commemorative bell was taken to Flinders Naval Depot by a destroyer from Sydney and is recorded as having been taken on charge in the Central Stores Ledger on 4th October 1928.

At that point the archives cease the story. Whether an administrative oversight caused Navy's change of mind about the bell is unclear, but in any case it doesn't really matter. The bell belonged to the Navy and the War Memorial did not object (at least not on paper). Readers who served in the aircraft carrier *HMAS MELBOURNE* at or soon after its commissioning will know just when the bell was transferred from Flinders Naval Depot to the ship. Perhaps someone may be able to inform the rest of us, through this journal.

The interesting question is: what happens now? The bell represents a unique achievement by an Australian warship and so is part of our naval heritage; following Admiral Hall-Thompson's dictum in 1924, it should be kept safely until the next *HMAS MELBOURNE* arrives. Maybe the Australian War Memorial is worth a second chance? Wherever the bell goes, members of the RAN and the Naval Institute should not be deceived by its (now) dull grey sheen and apparent ordinariness. As its origin and subsequent history show, it is no mere ship's bell.

The author was awarded the ANI Silver Medal for this essay, submitted during his attendance at the RAN Staff College

AUSTRALIAN MARITIME STRATEGY: A TIME FOR COHESION

by Lieutenant Commander M.K. Gahan BSc RAN

'It's a pity it's such a neglected area here — considering the amount of money spent on marine research is very small. But whatever I do, I'll always be involved with the sea — everything I've ever done has always been oriented towards it.'

Lucy Parr, 26, CSIRO Marine Scientist. October 1982. Cosmopolitan

Mention 'strategy' and the person in the street thinks of war, a sales manager thinks of sales promotion, the inexperienced military man associates it with tactics, and the politician associates it with the next election. This perception of what other people think about strategy is entirely unsubstantiated, but acceptance of the principle that the word 'strategy' has an association of ideas differing markedly from person to person, is fundamental to the aim of this paper.

Mention 'maritime strategy' and the perception alters markedly. 'Strategy' now takes on a dimension associated with the sea, and this is an immediate dilemma for those who had difficulty coping with 'strategy' on its own. The aim of this paper is to propose a grand strategy which within 10 years will leave the Australian community as a whole in no doubt as to the need and essential requirements of a maritime strategy. The paper will not define the maritime strategy itself, because it posits that existing divided loyalties and ignorance at all levels provides too fragile a platform on which to weld the necessary cohesive forces for the 'right' strategy. It assumes continuance of existing strategies in parallel with the development of the grand strategy, until such time as market forces dictate change.

The Author

Lieutenant Commander Gahan joined the RAN College Jervis Bay in January 1964, and graduated as an aspiring Communications Officer. He later graduated from the RN Engineering College, Manadon, UK, with a B.Sc in Marine Engineering in 1971, and served in *HMS CAPRICE* in 1972. Following a year of service in *HMAS SYDNEY*, he spent three years as a project planner at Garden Island Dockyard, then two years as the main propulsion engineer in *HMAS MELBOURNE*, during which time the ship participated in the Spithead Review at Portsmouth in 1977. Then followed a year as Deputy MEO, *HMAS PERTH*, and then time on the staff of the Director of Fleet Maintenance at Navy Office. After completing RANSC course 8/82 he was posted to a combined Services staff course in France.

National Will and National Policy

For reasons which may be both logical and traditional, military men (women will be mentioned later), and more specifically naval officers, consider with some conviction that the formulation of maritime strategy is in their unique province. They would not accept the categorical syllogism that:

- national will dictates national policy,
- Servicemen are instruments of national policy, therefore
- Servicemen are instruments of national will.

This simplistic though logically valid argument depends for its validity on the truth of the major premise, and this would require a paper on its own to argue. One of the great strengths, though most might argue the weakness, of the Australian will, is its apathy and indifference to issues not directly concerned with personal wealth and comfort. This is the least likely will with which to influence national policy, one might argue. On the contrary, this is a will which, if used to advantage, is more amenable to dictating national policy than almost any other. If it can be shown that the lack of a strong maritime strategy (backed up with a powerful, visible hardware deterrent) will directly threaten personal wealth and comfort, then national consensus *will* dictate national policy.

Historical Justification

History seemingly and overwhelmingly refutes the national consensus concept, except in times of actual national emergency. I suggest that a national emergency exists at this moment because of the long lead times required to get it (the strategy and the hardware) right, and the existing national ignorance to overcome to get it moving.

Following the Crimean War in 1854, there was a continual and direct Russian warship threat to Australia. In the face of this same threat to China and Korea as late as 1902, an Anglo-Japanese alliance was formed. Paradoxically, following Japan's single handed destruction of the Russian Fleet in 1904, Australia's principal fear was realised: that Britain was neither sympathetic nor interested in protecting Australia's shores, nor had she ever been.[1] Her Imperial Fleet was removed from the Pacific, leaving Australia virtually defenceless. Prime Minister Alfred Deakin, forever suspicious of British promises, waged a relentless propaganda campaign through the Age newspaper, culminating in his bold act of foreign policy in inviting President Roosevelt to send his 'Great White Fleet' on a visit to Australia. He stimulated such demand for a local navy independent of British finance and control, that the idea became a partial reality with the birth of the Royal Australian Navy in 1911. Such imagination and resolve, in a contemporary context, is one of the building blocks of this argument.

Contemporary Justification

The preceding discourse into history raises several questions for those who doubt current perceived threats and the extent to which national consensus can influence national policy. The following are but a few contemporary problems, some of which will be seen as analogous to those existing in the late nineteenth century:

- The Soviet Fleet is an active threat in regional waters.[2]
- The Soviet Mercantile Fleet is an active threat to Australia's economic security.[3]
- Nearly 100 per cent of Australian trade is by sea.[4]
- Britain withdrew her Far East Fleet from regional waters in 1971.
- Australia has no guarantee of protection from her (now) traditional ally, the USA, through ANZUS Treaty.[5]
- Australia has little control over US military installations in Australia.[6]
- Japan, Korea, Taiwan, Hong Kong, Thailand, Malaysia, Singapore and Indonesia are experiencing growth rates per capita currently running in excess of 4 per cent, whilst Australia's is running at zero per cent.[7]
- Australia has neither the political strength, economic leverage, national consensus, maritime strategy nor military hardware to reverse *any* of the above regional forces.

Irrespective of the points of fact which differ from 100 years ago (and in reality the situation now is not significantly different: more complex, but not different), the main feature which makes it different today is the apparent evaporation of national consensus, or will to proceed as a nation toward a goal. It is worth contemplating the reasons for this evaporation, and capitalising on the conclusions; but first, a final digression to set the scene, because it is relevant.

I mentioned at the outset the inexperienced military man who confuses strategy with tactics. How often, in every navy wardroom, air or army mess, has a visitor been bombarded with intricate details of the best way of knocking out an opponent (given the exact scenario, rules of engagement, perfect communications, positive enemy identification, and perfect weapon in perfect working order on a clear day)? It appears so easy to prove that organic maritime air is dead, or alive[8]; submarines reign supreme, or should go nuclear; or maritime reconnaissance aircraft render surface ships obsolete, or not, depending on their stand-off weapon fit. The list and permutations are endless, but the arguments in isolation, whilst healthy, are largely irrelevant. Whilst they sometimes interface with each other, and sometimes with overall strategy, they are predominantly tactical arguments which, if actually used in a sea assertion role mean that the strategy, if it ever existed, has probably failed.[9] Vice-Admiral Sir James Willis summed it up as follows:

> 'Too often I have encountered knowledgeable interest in the hardware of maritime warfare but gross ignorance of the environment in which it must operate.'[10]

The Contemporary Dilemma

I have attempted to create an atmosphere combining the various elements of:

- a community and professional ignorance of the meaning of strategy;
- the existence of active, though not immediate, threats to national security; and
- the evaporation of these elements due to an apparent lack of national consensus.

To their credit, force planners have pressed on regardless, as they must, believing in their traditional and logical way that hardware must be acquired regardless of the 'right' strategy, but also because they believe that 'progress in any form of human activity almost invariably comes from an elite; . . . it does not come from the herd mooching and munching its way slowly across the pasture.'[11] To their discredit, however, they have misinterpreted the mood of the mooching and munching herd. I suggest that the herd is bored, fed up with the same old fodder born of the replacement myth[12], and simply refuses to swallow yesterday's chaff. It is hungry though,

voracious and energetic; it simply wants today's fodder packaged in today's colours, sights and sounds. The first planner to appreciate this will start a stampede of young bulls all moving in the same direction. Marketing is the cry of the 80s, and may the best product win. Let me explain this phenomenon.

Management of Change

A brief explanation of the management of change is necessary as the natural pre-cursor of the strategy to follow. Firstly it should be understood that the industrial society and the protestant ethic ended in the 1950s.[13] We are now part of the post-industrial society with a social ethic: so are our planners, whether they know it or not. Seventy per cent of our workforce is in tertiary (service) industries, compared with 25 per cent in secondary (manufacturing), and only five per cent in primary (agricultural) industries, representing an almost complete reversal in trends within 30 years.[14] Thirty per cent of our population are immigrants or sons and daughters of immigrants.[15] Our middle managers (I include myself) have not known a World War, nor do they want to. Television has brought with it rising aspiration levels for all people, rich and poor, and with it increasing nationalism, although this is still only a shuffling of hooves and snorting in the dust.[16] Small nations are exerting a disproportionate influence over the large nations; international co-operation is increasing and 'quality of life' clauses are being indelibly etched in all international and economic treaties. Revolutions in information processing are creating an information and knowledge meritocracy which demands to know more.[17]

Whilst technological change rates highly, it is less significant than the social changes associated with it. This appears to be creating confusion and frustration in the minds of those of the protestant ethic, who would prefer to cope with technological change only. Technological change is tangible, visible and malleable, as all things were in the industrial society up to the 1950s, but the social ethic renders such issues as conscription, visiting nuclear warships and even aircraft carrier debates as basic non-events, clothed as they are in 50s colours. This is not to say that the issues are unimportant, just that the community is no longer interested in discussing them. The very absence of debate, however, is the social ethic method of imposing national will on national policy. Even the Katter Sub Committee parliamentary paper number 349/1981 entitled 'Threats to Australia's Security: Their Nature and Probability', observes polarisation of partisan debate on defence issues. It behoves the government to exercise the community mandate until such time as the mandate expires.

A graphic example of the consequence of failure to observe this mandate is the 'nuclear freeze' movement in America and Europe as a massive social statement rejecting President Reagan's escalation of the nuclear arms race. Millions of people from all walks of life have found it necessary to remind governments of what the 'ban the bombers' of the 60s were saying. Examples closer to home have no parallel because the government is responding to the silent majority and therefore not offering ammunition. National will is influencing policy in a way we have never witnessed before. It is manifest in the community lack of interest in minority political parties, and of pressure groups such as the RSL. Only the large issues seem to matter, and the only way we know what these large issues are is when the government steps out of line and suffers an overwhelming shock of reaction.

The unclear loyalties and insecurity evident in the young (post 1950s) majority of Australians has less to do with the prospect of unemployment (unthinkable in the protestant ethic) than with the prospect of lack of self-actualisation or of not belonging to the community at large. The young desperately want to belong to the community and the nation, and will fight for that right, given the challenge. The time is exactly right to harness all this energy, but in a way that is neither obvious nor threatening, as was Deakin's propaganda campaign which was acceptable to the protestant ethic, but entirely unacceptable in the contemporary environment.

Direction of Change

If we attempt to harness and direct this energy in the climate I suggest exists, where should it lead, and how should it be done? The answer is with us every day, but we ignore the signposts. The words spoken by Lucy Parr at the opening to this paper are more significant than all the learned and revered rhetoric either by Sir Zelman Cowen in his opening address to the Australian Naval Institute's 'Seapower 81'[18], by Vice-Admiral Sir James Willis to the Australian Centre for Maritime Studies[19], or by Doctor Neil Primrose as Foundation Chairman of the Australian Centre for Maritime Studies.[20] The revered speakers so mentioned have achieved great progress toward the new awareness of the importance of the sea, and undoubtedly they will provide the lead for the strategy I suggest. Lucy Parr, on the other hand, is but one of many young people who see the need but not the fulfilment. Her contribution to the article in Cosmopolitan magazine is one of four relating to careers entitled 'The Sea — Plenty of Scope'. The message is not new, nor is it startling, but it is clothed in the sights

and sounds of the 80s and read by a voracious audience with more than a little influence on national will and subsequent national policy. It is but one example of the means to an end.

Having alluded to the influence, women might have on national will, it is appropriate at this point to revert to my dichotomy of the military man's/woman's formulation of maritime strategy. Mrs Margaret Thatcher's appreciation of the political, strategic, logistic and historical significance of the Falkland Islands, and her subsequent resolve in the execution of the ensuing war should leave no doubt as to the capacity of women to advise, and be advised, in areas which once were essentially a male province. The fact that Queen Elizabeth approved her actions further confounds the dichotomy. One can only speculate as to the influence of Napoleon's Josephine at Waterloo, and Nelson's Lady Hamilton at Trafalgar. I would prefer not to venture further with this theme, as it is but a small part of the overall strategy. The point I wish to make, quite simply, is that 50 per cent of the electorate might have as much to say about maritime strategy as the so-called elite, and if the package looks good and feels good then national will leading to policy is assured.[21]

I have intimated how it should be done in relation to the media, but not where it should lead. For this I go back to basics. Many words have been written about the forces which shaped our identity, but very little about where it leads us in terms of our primeval relationship with the sea. It seems odd that for a country of 15 million people, each of whom view a map of Australia on average once per day (possibly the weather map in the newspaper or television), and who see a big island in three enormous oceans, have so little affinity with the sea. Apart from the aborigines who walked here, every other person's ancestors were transported here by or over the seas. So too, goes all our trade and the majority of our energy and resources.

Despite these most obvious geographic and historical facts, we are all a predominantly 'continent' and not 'island' oriented people. Our fishing industry is virtually non-existent[22], despite the strengths of foreign fishing operations attesting to the substance of the zone.[23] The high cost of 'invisible' items of Australia's international balance of trade is directly attributable to our failure to develop the potential in shipping and related industries.[24] Our general awareness of the implications of the International Law of the Sea, the exclusive economic zone over a wide continental shelf and a host of other related subjects is poor. Apart from the few professionals who ply their trade on the high seas, we see our shores as nothing more than a golden sandpit in an aquatic playground.

It is encouraging, therefore, to note the slightly increasing awareness in the education process with the advent of the Australian Maritime College in Launceston, Tasmania, the well established School of Strategic Studies at the Australian National University, the recent foundation of the Australian Centre for Maritime Studies in Canberra, and the solid start by the Australian Naval Institute, which has sponsored two 'Seapower' seminars with overseas speakers of the calibre of Admiral Elmo Zumwalt, USN (retired) and Admiral the Lord Hill-Norton. Apart from these specialist facilities, however, the range of related subjects available (by which I include, inter alia, maritime and international law, history, defence, hydrography, navigation, communications, mariculture, ocean mining, shipping, fishing, customs and surveillance) are but few and far between. Without the demand, of course, there is little requirement for such schools of learning. It would appear that we need to actively create this demand, if not in maritime subjects, then in any other industry concomitant with the post-industrial society.

Alvin Toffler, in his appropriately named 'Third Wave', describes these industrties under four headings, namely computers and electronics, space, biology and oceans. Collectively, he describes them as the new technosphere. We know a great deal about the first three, but of the oceans, very little. What sounds like to much science fiction, however, is real and viable. Aquaculture, fish farming and herding, along with plant harvesting, 'oil growing' of sea-borne algae, oceans, very little. What sounds like so much but a few proven concepts awaiting commercial development. Australia would appear to be in an unenviable position to exploit such avenues.

The most attractive feature of investment in the ocean and its resources is the almost universal acceptance of the concept. Leaving to one side, initially, the more bizarre industries of the technosphere, there exists sufficient knowledge of the sea and its resources to fire the imagination of the most ardent non-believers. Unlike almost any other medium, the sea remains a mystery which stands up to the test of time in attracting and holding the interest of all who witness its many secrets. I venture to suggest that the Australian community is both ready and willing to participate in the most ambitious, yet subtle assault ever on its ignorance. I choose the ocean technosphere as the target because it offers immediate geopolitical benefits to an island nation. At the highest conceptual level it provides an imaginative national aim which I believe our country so badly needs. It offers hope and stimulation to young people filled with loaded aspirations but depressed expectations.

Nature of Change

Assuming acceptance of this preposterous strategy, the reader is entitled to ask how this mammoth task is to be undertaken, and to what ends, under what controls, and what on earth it has to do with maritime strategy? The first premise is total faith and understanding of the social ethic: to assume affluence and leisure, aversion to routine and drudgery, insecurity, transience, flexibility, change, dissent and unclear loyalties, but above all assume a desire for belongingness and self-fulfilment. The second is the gradual introduction of maritime subjects at all levels of all curricula in all pre-schools, schools and universities to create an awareness and self generating interest in Australia as an island rather than a continent. The third is a 'subtle saturation' of the media in all its forms, telling the truth as it is without provocation or conclusions, as a natural complement to the education process. This assumes a limitless coverage, from sea shells for children, to 'Patrol Boat', to the intricacies of offshore oil drilling.

The fourth is acceptance that the outcome of these actions cannot be predicted nor controlled. The protestant ethic requires control, regulation and legislation. Sufficient evidence abounds which suggests that this is not working with the social ethic.[25] This strategy demands that no attempt should be made to control the direction of the herd: rather that the gates be opened before they are trampled down. It does not assume any loss of power because the power is not transferred, but increasingly randomized. This will not represent a threat, as the outcome will materialize when the herd tires and settles on the greenest pasture.

The fifth is projection of a Navy image of good citizens and top professionals proud of our outfit. We are so enmeshed in our insecurity that we allow good sailors to climb the gangway wearing denim jeans and t-shirt while they carry their uniform in their blue bag. It is time to ignore peer pressure and encourage officers and sailors to wear uniforms proudly in the street, in buses, trains, shops, hotels and clubs. The community loves it and it feels good. It invites comment and questions, and ensures that the wearer is ready with the answers. Market the product so that the community can identify with it.

The sixth is faith in the fact that an informed community and informed professionals will eventually have clear ideas upon which to base an Australian maritime strategy which will stand the test of time. The emotional rhetoric which currently abounds and which daily adorns the national newspapers, is less than healthy and is a national embarrassment.

Conclusion

Australia cannot afford not to have a strong, dynamic maritime strategy appropriate to its contemporary environment. A maritime strategy is too delicate a concept to be formulated in isolation by an elite. It is therefore appropriate and necessary to increase community and professional awareness of Australia as an island. The sea offers scope for whole new industries in keeping with the post-industrial society in which we live.[26] With community education and employment in this resource, the appropriate maritime strategy will not only become obvious, but in demand.

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BENEFITS OF SEA POWER: MAHAN WAS MORE THAN A MERCANTILIST

by Cdr. J.J. Tritten USN

The one overriding message of Rear Admiral Alfred Thayer Mahan is that sea power is an absolute necessity for certain geographically situated States in order that they might accumulate wealth and enter the ranks of truly great powers. His historical example was, of course, Great Britain who unseated France as the dominant world power because France failed to look to and understand the sea. The Netherlands, Portugal, and Spain lost their status as great powers also for failing to understand sea power and use it properly.

Mahan did not consider navies as internal elements of sea power. Mahan considered sea power to be made up of the economic means of production, shipping, and colonies (markets). Navies were, however, indispensable external elements necessary for the attainment of sea power. A combination of naval and sea power were necessary for a State to obtain a commanding position and thereby accumulate both wealth and power.

Mahan also recognized the utility of navies for purely political roles. He chose to make his major arguments using economic arguments which would gain a nation the navy it could use for whatever purposes it saw fit, including political. It was a symbiotic relationship which Mahan advanced. Sea power could not flourish without supporting naval power. Naval power was difficult to fund under a popular government but would follow as a necessary consequence of expanding civilian sea power. It was therefore beneficial for a navy to support civilian shipping, shipbuilding, trade, and the acquisition of overseas markets.

We appear to have gone full circle, since now it is often the case that merchant shipping, shipbuilding, and the need for US citizen seamen is often justified in terms of their political-military utility and not in order to maintain overseas trade. The symbiotic relationship still exists but for different reasons.

A healthy US flag merchant marine and shipbuilding industry is absolutely essential to maintain control over vital raw materials and energy resources which arrive by sea. Civilian shipping constitutes the bulk of our sealift capability which is crucial to reinforce and resupply Europe or the Rapid Deployment Force in the event of a war. The US world wide forward based defense doctrine and deterrence of a long war depends on the availability of civilian shipping.

Mahan obviously felt it was wiser to justify the need for a navy to support civilian shipping which could be shown to be economically worthwhile. Today many of the economic benefits of US flag shipping have been questioned due to world competition and we often find it easier to justify shipping for its political-military utility.

Mahan recognized the political benefits of naval power and therefore of the sea power from which it sprung. Unlike his concise chapter entitled, 'Discussion of the Elements of Sea Power', which opens his famous *The Influence of Sea Power Upon History 1660-1783*, Mahan's treatment of the political benefits of navies are sprinkled throughout this work and his subsequent *The Influence of Sea Power Upon the French Revolution and Empire* and also his *Sea Power in its Relation to the War of 1812*. Mahan often reads like Admiral of the Fleet of the Soviet Union Sergi G. Gorshkov who also introduces brilliant analysis into pages of otherwise discriminatory history.[1]

A nation with a superior organised military and naval force will often define and set international norms. Such a power is a great power. Being a great power requires more than just words. This lesson has not been lost on Admiral Gorshkov who understands that might often makes right.[2]

Mahan uses numerous historical examples of how Great Britain as a great power, violated the internationally accepted norms of the time and the world was powerless to do anything about it. Britain's violation of neutral waters and interruption of neutral shipping were constant themes of Mahan. Mahan even concluded that

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although Britain was legally wrong, she was militarily correct since the neutral shipping was indeed giving aid and comfort to her enemies.[3]

Navies are thus useful for enforcing norms, desires, or for general coercion. A weaker power can do but what its forces allow it to do. Armed neutrality by a weaker power has often been attempted as has circumvention by flying flags of convenience and claiming neutral status for contraband.

Mahan did not claim that a weaker State would need to match the naval power of the dominant State. Indeed his duscussion of what type of naval forces the United States should have had prior to the War of 1812 clearly shows that often a small but well designed force can exert an influence well out of proportion to its actual strength.[4] A squadron of schooners operating in the Caribbean could have raided British shipping. The Royal Navy in the opening phases of the War of 1812 was thoroughly tied up in European waters and generally not massed in sufficient force to protect its Caribbean shipping.

Mahan clearly believed that in the early days of the Republic, war itself could have been deterred by building a sufficient naval force in time of peace. The lack of an ocean-going navy left our shipping vulnerable to interference by the French and British which in turn constituted the immediate causes for the War of 1812. Mahan clearly felt that a strong navy as was urged by John Adams and Governor Morris and overall military preparedness as urged by President George Washington would have avoided the necessity to fight the war itself.[5]

Mahan supported Nelson's maxim that often the best negotiator was a fleet of ships of the line. In addition to helping a State defend its sovereignty, navies are vital for self-defense and to avoid political humiliation. Due to the lack of naval power, the French coastline, her colonies, and shipping were frequently raided by Great Britain. The lack of a navy and general military ineptitude by the federal government resulted in the burning of the federal capital in 1814.

The lack of a navy prevented the United States from countering the Royal Navy's commercial blockade which was effective once British ships were no longer required for operations against the French. In addition to the culpable lack of preparation for war, it was the debilitating effects of this commercial blockade on the economy that Mahan urges Americans to remember from the War of 1812, not the distinguished but few naval victories and the closing Battle of New Orleans. Neither of these had any impact on the outcome of the war nor prevented the ruin of the economy caused by the blockade.

The political benefits of a Navy are as valid today as they were in the day of Mahan. It is true that new technologies make the ability of navies to influence what happens on the land more significant than Mahan ever dreamed. Reading his account of the influences of sea power upon history, however, is an excellent back to basics as to just what it is that navies are supposed to do in the first place.

Despite a new Law of the Sea Treaty, which many of the world's maritime powers have failed to sign, the sea is still somewhat a no man's land. International agreements and conventions may regulate day to day maritime intercourse, but when vital interests are at stake, might still has the potential to make right.

A true super power must have the military muscle to enforce its desires and to set and regulate international conduct and norms. International law remains those canons which a State willingly agrees to be bound to or which it is coerced to agree to by the international community. Naval force remains a valid tool of international diplomacy allowing the demonstration of force below the nuclear threshold. They contribute to the US ability to carry out a long or a short war thus serving as integral elements of a national policy to deter war by maintaining the capability to fight one.

Before commencing an investigation as to the more modern relationships of navies to nuclear deterrence, war-fighting, denial of victory, or gunboat diplomacy, the time spent reading the lessons of Mahan are well worth while.

Notes

1. Admiral Gorshkov has rightly been accused of rewriting history and giving undue credit to the Soviet Union and Russia and particularly their navies. Mahan can be accused of the same biases but with much less justification. Both admirals are striving to sell the need for sea power. Both are selective in their use of historical examples.
2. Admiral of the Fleet of the Soviet Union Sergi G. Gorshkov, *The Sea Power of the State*, 2nd Rev Ed with a new Foreword to the English Edition (Oxford, Pergamon Press, 1979), p 48. Gorshkov uses the argument that might made right in the past under earlier capitalist systems. This is a ploy, however, since the bulk of his book is an explanation of the political benefits which sea power and specifically naval power can bring to a State. Gorshkov, like many Soviet Navy authors, is constrained from writing anything which would present the Soviet Union in a predatory light. The methodology, therefore, is to use either historical or Western examples to make their point as to what the Soviet Union could do if it had this capability.
3. Neutrals who attempt to circumvent the efforts of a commercial blockade attempt to defeat the efforts of one belligerent and thereby make themselves a party to a war. Mahan recognized the circumvention of blockades and the routine use of forgeries and flags of convenience practised by nations which were in fact impacting on Britain's efforts to enforce her desires. In this case, might made right.
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5. *Ibid*, Vol I pp vi–vii, 74, 290, 360; Vol II, pp 213 and 265.

THE AUSTRALIAN MARITIME COLLEGE

by Lieutenant-Commander D.A. Smith RD, FAIN, RANR

The Australian Maritime College is Australia's only national, tertiary educational institution providing multi-level maritime courses exclusively for the fishing, shipping, port and offshore industries. Approaches and submissions to Governments and shipping groups to establish adequate training facilities for the shipping and fishing industries have a long history in Australia.

Profit orientated commercial shipping companies have traditionally supplemented their own 'in-house' trained officers with personnel from sources outside Australia, and quite rightly have been hesitant to commit large capital outlays of a recurring nature in a venture which would show no immediate economic return. The post 1945 era saw the gradual modernisation of the Australian Merchant Fleet, the emergence of considerable trade union activity, the collapse of some shipping groups and the rationalisation and formation of others. The Federal Ministry administering the Commonwealth Navigation Act was hard pressed in its struggle to change its thinking from sail to steam and, being in the backwaters of the Public Service, was in no position to do much more than attempt to oversee certain minimum safety standards in shipping. While the post war standards of Merchant Navy officer certification were being slowly raised, there suddenly appeared on the horizon a treasure ship. Deeply laden with taxpayers' money and heavily overloaded with massive political handouts, the name of this beautiful gold plated ship was *EDUCATION DEPARTMENT* and it was eventually to prove the saviour of increasing representations to upgrade standards within the Australian shipping and fishing industries.

In 1966, a group of Master Mariners in Tasmania formed the Master Mariners Association of Tasmania and with a substantial membership of experienced maritime opinion, set as their principal objectives:

- the establishment of an Australian Nautical Academy, and
- the establishment of such an academy in Tasmania.

The Tasmanian Government, with some prompting from local media groups, were particularly receptive to the idea of a Maritime College and a new industry being located in the State, more so if it was Commonwealth funded. It was subsequently able to offer considerable assistance to the Commonwealth as an inducement to have the College located in Tasmania. The first report of the Commission of Inquiry into the Maritime Industry (the Summers Report), in May 1974, was accepted by the Commonwealth and paved the way for enabling legislation to fund the proposed College. On 10 October, 1978, the Maritime College Act was proclaimed. This Act provided for the proposed College to be established in Launceston, Tasmania, as an autonomous institution governed by its own Council.

The Council of the Australian Maritime College is fairly representative of the whole spectrum of interests which make up the commercial shipping and fishing industries, and is representative either directly or indirectly of Commonwealth and State Governments, interests within the Australian fishing industry, major shipowners and operators and some of the maritime unions. While it is not possible for all

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interested parties to be represented, the Minister for Education has been able to select a fairly well balanced body of interests.

The Australian Maritime College was formally opened by the Prime Minister, the Rt. Hon. J.M. Fraser, CH, MP, on 17 May, 1980 at Beauty Point, Tasmania, with a guard of honour being formed by the first Cadet intake into the College. The College is divided into two principal areas, with the main administration located at Newnham on a river site of 13.2 ha between the College of Advanced Education and Brook High School, and the secondary part at Beauty Point on 8.9 ha comprising several sites. The main campus at Newnham, Launceston, is a large complex of very attractive and well designed buildings containing:

- Lodge
- Newnham Hall (the original Mansion)
- Norfolk Hall — senior officers
- Stable complex
- Cadet residential complex
- Warden
- Survival training centre
- Cafeteria — union
- School of ship operations and specialist training
- Resource centre
- Administration building
- School of navigation
- School of engineering
- Thermodynamics building

A 60 metre towing tank has been installed, together with a slow speed marine diesel engine and bridge simulator equipment. The College is amply provided with a wide range of radio, radar and ships' electronic equipment, and a modern and expensive library is maintained for the use of all students.

The Beauty Point complex comprises the waterfront Seamanship and Fisheries Practical Training Building, an adjacent jetty which accommodates the College's training vessels *WYUNA* (64m) and *BLUEFIN* (34.5m) and a nearby residential facility. The Department of Operational Safety and Executive Training and the Department of Fisheries operations are also located at Beauty Point. The specialised fire training ground is sited on 2.5 ha at nearby Bell Bay.

The College Principal, Captain D.M. Waters, MSc, Extra Master Mariner, is the Chief Executive of the College. He is supported by an academic staff of world standing. The range of courses conducted at the College is very extensive and covers just about every aspect of ship construction, operation, management, safety, port operation and hydrographic surveying. Length of courses varies from one day, right through to a Bachelor of Applied Science (Nautical Science) or Bachelor of Engineering (Maritime) with post graduate courses in Hydrographics and Surveying. Upon demand, the College will use its resources and world wide contacts to arrange any highly specialised course associated with its statutory functions. This includes bridging courses to enable serving seafarers to undertake academic studies.

Many of the courses available at the College could be usefully undertaken by RAN personnel and in this respect the College will form a useful backup to the maritime defence preparedness available to the RAN in time of war or defence emergency. Because of the very large number and variety of courses available at the College, a limited number of non-Merchant Navy students are able to undertake studies previously unavailable in Australia. The current total full-time student enrolment is 300, with 60 non-academic and 35 academic staff. Almost all of the College's current students are already employed in the commercial shipping and fisheries industries.

As part of its administrative network, the College has a number of Course Advisory Committees. These Committees are representative of experienced and informed opinion within the various areas of the shipping and fishing industries and Commonwealth and State Government Harbour and Marine Departments. The College is now well established and continues to grow and expand its influence and it will not be long before the impact of organised and uniform training will be felt within the Australian shipping and fishing industries. Launceston, being a major provincial city, offers a complete range of sporting and cultural facilities and is conveniently located in the south east corner of Australia, which contains 80% of the nation's population.

1983 sees the commencement of more training facilities and courses for the 'rating' section of the shipping industry. Safety introduction training for all ratings and a twelve week short course in vocational skills will introduce uniformity in training, which has not been available before in Australia. With capital investment now approaching $30 million, the College has become a lucrative new permanent industry in Tasmania and has amply rewarded the State and its supporters for their initial enthusiasm.

This article is the transcript of a talk given to the Canberra Chapter in March 1983

HOW THE LESSONS OF NAVAL HISTORY ARE NOT LEARNT

by Admiral Sir Victor A.T. Smith AC KBE CB DSC RAN (Ret'd)

Let me begin by saying that the title of this talk is not to claim that all the lessons of naval history are not learnt. Such a claim would be ridiculous. My purpose is to show from the writings and statements of eminent people and by recalling certain events in naval history that some important lessons are not learnt and that these have relevance to Australia particularly in respect of naval aviation. John Frende wrote in 1553:

> 'Many have written and experience besides declareth how necessary historical knowledge is to all kinds of man. For by comparing things past with things present man may easily gather what is to be followed and what is to be eschewed; by this kind of learning he can have knowledge without experience. There is nothing new under the sun and it is impossible for anything to chance either in war or in common policy but that the like may be found to have chanced in times past.'

A number of people consider that Sir Julian Corbett was comparable in his writings on naval matters to Rear Admiral Alfred Thayer Mahan and I make use of several of the points made in Corbett's *Some Principles of Maritime Strategy*. One of the reasons he wrote this book was to convince an audience which for the most part believed that technical change had made the study of all past naval warfare irrelevant. Corbett never claimed that historical study could produce detailed rules for the future conduct of battles and campaigns, as the practical experience and personal qualities of commanders and the unique circumstances of every war and battle were of primary significance, but systematic study could help in assessing individual situations. Corbett defines maritime strategy as 'The principles which govern a war in which the sea is a substantial factor'. Obviously such a strategy must be seen as part of a larger national strategy and directed policy. Again it is obvious that in a successful maritime strategy the relationship between sea and other forces are of paramount importance.

Shortly after World War II ended, a review was prepared by the Operations Division of the US Navy and was based on the files of the Navy Department and the reports of the US Strategic Bombing Survey. Its purpose was to analyse the relationship between air and sea power. The review included the following words:

> 'The danger inherent in any report confined to one aspect of the war is that it may mislead the reader into forgetting that the conflict was won by a combination of ground, naval and air forces each of which carried its share of the common burden. All operated within the framework of strategic plans.'

These words substantiate those of Corbett and I mention them because cases are not unknown where one Service wittingly or unwittingly makes a false claim regarding the capabilities of its equipment or weapon systems. Adverting to Corbett's definition I would like to mention some self-evident points. Firstly, the object of maritime warfare must always be directly or indirectly either to secure command of the sea or to prevent the enemy from securing it. Secondly, command of the sea means nothing but the control of maritime communications whether for commercial or military purposes.

The Author

Admiral Sir Victor Smith joined the RAN in 1927 and specialised as a Lieutenant in naval aviation by 1937. He was Director of Naval Air Warfare Organisation and Training 1953-55; CO of the RAN Air Station, Nowra 1957-59; and CO of *HMAS MELBOURNE* 1961-62. He was FOCAF 1966, DCNS 1967, CNS 1968-70, and Chairman of the Chiefs of Staff Committee 1970-75.

Thirdly, accepting that the objective is to control communications, then the fundamental requirement is the means of exercising that control. Deriving from this, at sea the essence of defence is mobility and this cannot be achieved if a maritime force can only operate within certain restrictive limits.

I would like to give an example of the importance of maritime communications; how a lesson was not learnt and how this led to one of the most costly mistakes ever made in British naval thinking. During the second half of 1916, there were more than 100 U-Boats in action and the Allied tonnage being sunk increased to the extent that it was estimated that if the increase continued then the Allies would be forced to sue for peace before November 1917. In May 1917, as an act of desperation, the RN introduced the convoy system and the shipping losses decreased dramatically. The convoy idea was not new. During the early 16th century, the Spanish ships plying to and from the West Indies suffered heavily from marauding French pirates. In 1543, the Spaniards began sailing their ships in escorted convoys and for the next 60 years they operated without loss from enemy action.

The World War I convoy lesson was well remembered when World War II began and convoys were instituted shortly after the outbreak. There were relatively heavy shipping losses at times during this war and one of the causes was an early lack of appreciation of the value of carrier borne aircraft in the protection of convoys. In the summer of 1939, the RN had 6 operational aircraft carriers; the aircraft embarked comprised a few fighters, some 150 Swordfish and 25 Skua fighter/dive bombers. As a result of the great confidence in the ability of its asdic equipped destroyers and escorts to deal with every submarine, the RN did not place A/S training high on the list of requirements for its aircrew.

Another instance of this failure to recall the previously demonstrated ability of submarines and the need to use an appropriate variety of weapons to oppose them is to be seen in the USA where, on 7th December 1941, the position was that under the US Army Appropriations Act of 1920 the Army Air corps was charged with the control of land based aviation. Thus there existed a situation where, in the words of the official US Navy historian, 'The Army Air Force which controlled almost the entire supply of US military land based planes in 1941 did not expect to include anti-submarine warfare among its duties. Army pilots were not trained to fly over water, protect shipping or bomb small moving targets like submarines.'

It was not until 1941 that the escort carrier in the form of a converted merchant ship began operating with convoys and at the end of that year Admiral Doenitz noted in his war diary in respect of U-boat losses after the submarines had tried to damage a Gibraltar-UK convoy:

> 'The worst feature was the presence of the aircraft carrier. Small fast manoeuvreable aircraft constantly circled the convoy and boats that did make contact had repeatedly to dive or else withdraw. Also, the enemy aircraft prevented any continuous shadowing or homing by our aircraft. The sinking of the aircraft carrier is therefore of great importance in all future convoy actions.'

Looking briefly at Japanese ASW operations in World War II, alone among the Axis Powers, Japan was almost entirely dependent upon raw materials from overseas. In spite of the importance of her merchant fleet, Japan did not have convoys in general use until January 1944. During the first two years of war, the Japanese merchant marine lost 3 million tons — about half its pre-war total. Two thirds of the losses were due to submarine attack. In August 1945, the merchant ship tonnage was only one-eighth of what it had been at the beginning of the war. In November 1943, the Japanese navy in a tardy attempt to lessen the high loss rate, unified its A/S effort with the formulation of a General Escort Command which included four very small escort carriers. The command had little success as there were grave deficiencies in the quality and quantity of both men and equipment. Furthermore co-operation between ships and aircraft was not good.

I mentioned in my opening remarks that some lessons are not learnt and that these have relevance to Australia. Some of these lessons are not or should not be confined to military persons as they should be of interest or concern to a much wider section of the community. For instance, an American Chief of Naval Operations, Admiral Carney, wrote the following thirty years ago in an article headed The Principles of Sea Power:

> 'To the island man from his childhood the significance of the sea around him is obvious and understandable. He knows the sea is both a source of life and a cruel sea and his instinct tells him that it is the part of wisdom to know how to use it to his advantage. To those who inhabit very large islands and to those who live upon the continental masses the fundamental advantages and dangers of the sea are not so readily apparent; but to the student of political and economic struggles, to those who analyse the sources of national power and welfare, there is (or should be) an ever recurring appreciation of the importance of the seas.'

HMS INDOMITABLE

Photo: A. & J. Pavia

Supplied by J. Mortimer

I would like to mention two cases in which two noted people of the British Isles stated how the sea could be used to advantage in respect of maritime power. The first is that at a function commemorating Trafalgar Day in 1957, Field Marshal Lord Montgomery had these words to say:

> 'In recent years there has been a school of thought which considered that there will be no role for the Navy in future war. Never was there a greater error. It is clear that the Western Alliance must have free use of the water areas in peace and in war. The teaching of history is that from the days of early Rome the nation which had control of the transit areas and seas in the end prevailed.
>
> Those are the facts. We cannot change facts. We must base our policy and action on them. Whichever way you look at it, the Western Alliance must be able to use the major oceans and seas. Today, control of the seas is a matter for ships and aircraft — all operating under naval direction and control. To carry out this task efficiently, the Navy must have its own aviation. Furthermore, the aircraft carrier of the Navy is the indispensable mobile airfield of modern armed forces. These mobile airfields are greatly valued by the Army.
>
> In the future, air support from mobile airfields on the sea may often be the only support the Army will get in the early stages of those operations which are carried out at a distance from the normal airfield complex. There is, therefore, an Army need for the naval aircraft carrier and a need about which we soldiers feel keenly. It is obvious that in future war sea-power will be a decisive factor. And by sea-power I mean ships and naval aircraft operating from carriers, since the one without the other is useless.
>
> The late war was in essence a struggle for the control of sea communications and until we had won that struggle we were unable to proceed with our plans to win the war. It will be the same in future wars.'

Then in 1968 the well known historian Sir Arthur Sarjeant wrote:

> 'Today the future of freedom depends on the realisations by the maritime nations of western Europe and their oceanic offspring in America and Australasia that if they can together control the passage of the seas as in the past, their survival — and that of human liberty — is certain but that if they fail to do so their destruction by the forces of despotism is inescapable. Western strategy should be based on absolute domination of the oceans.

To be successful and to be able to bring aid to our friends, sea power must be backed by air power and this cannot be done by land based aircraft. Carriers are essential — a carrier is a mobile base of airpower.'

I turn now to the recent report of the Parliamentary Joint Committee on Foreign Affairs and Defence titled *An Aircraft Carrier for the Australian Defence Force* but first I would like to quote some words which I think are as valid today as they were 15 years ago when I read them in an authoritative overseas defence publication. They are:

'The threats to our national interests vary from time to time. We know or think we know what they are at the moment, we do not know what they will be in ten years time and they certainly differ from the threats of ten years ago. Indeed looking back into history, it is remarkable how few of the wars in which we have been engaged could have been foreseen even a short time before the event. And it is perhaps a sobering thought for the military planner that no intelligence forecast of the course of a war has been right yet and there is therefore no particular reason why it should be right in future.'

Under the sub-heading 'The Potential for Global Conflict' the Sub-Committee on Defence Matters states —

'1.14. An aircraft carrier capable of mounting and directing ASW operations and conducting anti-shipping strikes could contribute to the protection of the security of Western seaborne trade operating in Australia's environs. Contributions would also be made by the P3C Orions in both an anti-shipping and anti-submarine role, the frigates, and in an anti-shipping role, the F111's and FA18's. Australia would need to make a contribution irrespective of the nationality of the shipping protected.'

This statement is generally true but it contains the indefinite phrase 'operating in Australia's environs'. In World War II hunter killer groups operated in the Atlantic, carriers escorted convoys cross the Atlantic between the UK and Malta (both east and west) and between the UK and Russia. Then as now carriers were an important part of the various factors which comprise ASW forces. I repeat the remark I made earlier that at sea the essence of defence is mobility and I would also repeat Field Marshal Montgomery's remark that a carrier is a mobile base of airpower. Furthermore, let me give you an instance of the contribution one aircraft carrier made to anti-shipping strikes over 40 years ago.

Early in November 1940, a RAF reconnaissance aircraft reported that five out of the six battleships of the main Italian Fleet were at Taranto as well as a large force of cruisers and destroyers. The anti-aircraft defences included barrage balloons and torpedo nets. At dusk on 11th November, the carrier *ILLUSTRIOUS* with a screen of 4 cruisers and 4 destroyers proceeded to the flying off position 170 miles from Taranto. Twelve Swordfish were to drop torpedoes and the remaining nine were to drop flares or carry out dive bombing attacks. The result of the strike was that three battleships were badly damaged, another two had to be beached and severe damage was also inflicted on some of the cruisers and destroyers.

In the examples I have mentioned, three points will be obvious. First, that in the Atlantic and Russian convoys losses would have been much greater had it not been for the carriers. Secondly, Mediterranean convoys could not have been mounted had carriers not been available. Thirdly, the attack on Taranto was only possible because of carrier borne aircraft. In passing, no one could claim that these operations were restricted to the environs of the UK.

Under the sub-heading 'Invasion of Australia' the Sub-Committee states —

'So long as there is no imminent or foreseeable threat, the concept of deterrence should be central to Australia's defence planning . . . A highly significant component in the deterrent Australia could offer to a notional invader would be the capability to strike against its home bases (in the case of a regional power) or its forward operational bases with air and seapower.'

I do not think that anyone could disagree with the statement that the concept of deterrence should be central to Australia's defence planning but the statement that a highly significant component in the Australian capability would be to strike against an enemy's home bases or its forward operational bases with air and seapower appears to be incomplete. If it is accepted that seapower would require air cover, then unless that air cover could be provided by carrier or shore based aircraft the seapower would be at risk.

Pursuing this theme in the introduction to its report, the Sub-Committee mentions that it is too early for information concerning the Falklands conflict to be available in sufficient detail for it to be analysed. However it has been generally known that had no RN carriers been available, the Argentine invasion could not have been dealt with. This fact was stated early after the cessation of hostilities and required no detailed analysis.

My final comment concerning the section headed 'Invasion of Australia' is the statement —

> '1.26. The Committee remains confident that Australia would be able to internationalise the situation should an enemy attempt the sustained disruption of our external sea lines of communication. There would remain however the threat to sea lines of communication supporting Australian defensive operations. This requires that Australia should be seen to have the capability to protect these.'

I have two comments regarding this statement. The first concerns the Committee's confidence that Australia would be able to internationalise the situation. As I remember, a few years ago it was accepted in Defence circles that despite the ANZUS Treaty there could be situations in which the US may not come or may not be able to come to the assistance of Australia. Again, harking back into history we can recall that it was 26 months before the US openly joined in World War II. My second contention is regarding the statement that Australia should be seen to have the capability to protect the sea lines of communication supporting defensive operations. Without organic naval seapower I do not understand how a realistic capability can be seen to exist. In these remarks I do not underestimate the value of helicopters embarked in frigates, shore-based airpower etc but as we all know they have their limitations.

In dealing with intermediate level threats, the Sub-Committee had this to say:

> 'Warning time for intermediate level threats would be less than for a major invasion but these threats should be considered years away rather than months.'

I will not labour this point, but we will all know about firstly the rise of the Nazi Party and how little notice was taken of that. Also, the warning received by the US of an impending Japanese attack in 1941 and what actually occurred. There is another aspect. Air operations at sea require an expertise which can only be developed over a number of years. It cannot be created or resurrected at the beginning of some warning time.

In the final sentence of the section dealing with 'Intermediate Level Threats', it is stated:

> 'In all cases (this presumably meaning all level of threats) use of an aircraft carrier is substantially dependent on a favourable air and maritime environment.'

I would like to mention briefly Operation Pedestal. The setting was that in the middle of 1942 supplies in Malta had reached such a low state that unless a convoy could arrive by the end of August then all stocks would be exhausted. It was decided that an escorted convoy of 14 specially selected merchant ships should pass through the Straits of Gibraltar on 11th August and arrive at Malta on 13th August. The escort was to comprise 4 carriers, 2 battleships, 12 cruisers and 40 destroyers. The estimate of the enemy was 21 submarines, 23 E-boats, 540 shore based aircraft and the possibility that the Italian Fleet would seek action. This was scarcely a favourable air and maritime environment. In the event, five out of the fourteen ships got through and Malta was saved. One aircraft carrier was sunk and one was damaged.

The importance of Malta in World War II bore out what Nelson had writen at the beginning of the 19th century:

> 'I now declare that I consider Malta as a most important outwork that will ever give us great influence in the Levant and indeed all the southern parts of Italy. I hope we shall never give it up.'

There are other examples which spring readily to mind of carriers not operating in a favourable air or maritime environment, for example in the Mediterranean in 1940–41, the Russian convoys in the Pacific. However, I think that I have said enough to make my point.

Under the sub-heading 'Air Defence' the Sub-Committee states —

> '2.25. A means of ensuring naval surface unit freedom from air threat would be to use land based strike aircraft to destroy the enemy's air strike capability before naval forces entered the area. Meanwhile the STOVL capability available in an aircraft carrier could provide some degree of air defence to surface units.'

My comment on this statement will be limited to one word and that is 'Falklands'.

In dealing with anti-shipping strikes the Sub-Committee stated —

> 'In circumstances where surface units were conducting anti-shipping operations an aircraft carrier would be effective.'

I would like to give you an example of where a carrier was more than effective: she was vital to the success of the operation. In May 1941, it was a RAF Catalina which shadowed the *BISMARCK* in the Atlantic whilst RN ships raced to intercept her. It was torpedoes from Swordfish from the carrier *ARK ROYAL* flying in appalling weather which crippled the *BISMARCK's* steering gear and enabled the RN surface units to close in and sink her. There were no shore based aircraft capable of attacking the German battleship, and had the

Fleet Air Arm aircraft not damaged her she may well have reached Brest safely.

One of the Sub-Committee's statements concerning surveillance has this to say:

> '2.48. Land based aircraft would provide the most effective means of providing surveillance but in areas remote from bases much of their effective time would be taken up in transit to and from the threatened area. In these situations an aircraft carrier could be positioned in the threatened area and a complement of helicopters and STOVL aircraft could provide effective surveillance but the distance to which this could be mounted would be restricted owing to the limited radius of action of embarked aircraft.'

I suggest that this statement is incomplete. To the words 'in areas remote from their bases much of their effective time would be taken up in transit to and from the threatened area' could beneficially be added another sentence such as 'Beyond their radius of action, unless effective satellite intelligence was available, air surveillance could only be provided by seaborne aircraft.'

In 1940, the German pocket battleship *GRAF SPEE* was sinking allied merchant shipping in the South Atlantic and it was necessary to find her. The *ARK ROYAL* with the battle cruiser *RENOWN* carried out extensive search and although the carrier's aircraft did not locate the *GRAF SPEE* their negative reporting considerably reduced the area in which the German warship could be. This helped greatly in the positioning of British warships to which the conclusion was the Battle of the River Plate.

In one of the paragraphs of the Sub-Committee's conclusions it is stated:

> '7. The Committee is of the view that many of the functions performed by an aircraft carrier can be performed as effectively, or at least acceptably by other elements of our air and maritime forces.'

I suggest that the examples which I have given you do not endorse this statement. A similar view to that of the Sub-Committee was held in Whitehall in the mid-1960s. Briefly, the RN carrier borne Phantom aircraft were transferred to the RAF and carriers were to be phased out. Later, the UK Government, presumably convinced of the need for carriers approved the construction of the so-called 'through deck cruisers' out of which evolved the *INVINCIBLE* class. More recently as you know the Russians have apparently been studying the lessons of naval history and have built aircrft carriers.

My action in commenting on several sections of the Committee's report was by using examples to show where the lessons of naval history have seemingly not been learnt. The only point I would make on other aspects of the report is that I firmly believe that the government decision announced on 9th December 1980 by the then Minister for Defence to acquire an aircraft carrier to replace the *MELBOURNE* was a correct decision.

I mentioned early in this talk that one of Corbett's reasons for writing *Some Principles of Maritime Strategy* was to convince people who believed that technical change had made the study of all past naval warfare irrelevant. However I believe it is equally important to study the possible effects of technical change on naval warfare. For instance in March 1907, Wilbur and Orville Wright offered to sell the patents of their flying machine to the British Admiralty. The offer was turned down because as a senior officer recorded at the time it was not felt that the employment of flying machines by the Royal Navy would serve any practical purpose during the foreseeable future. However, it was in 1912 that the Royal Naval Air Service was formed. Six years later on 1st April 1918, 2,500 aircraft and 55,000 officers and men transferred to the newly created RAF and thus the RN lost all personnel who were experienced in aviation techniques and also the Admiralty lost control of all aircraft which operated over the sea. The British Government of the day had failed to learn or had ignored the lesson of naval airpower. There could well be a lesson for Australia in this example.

There is some very relevant information in a publication titled *US Naval Aviation in the Pacific* which was issued by the Office of the US Chief of Naval Operations in 1947. For example, it mentions that a considerable body of opinion between the two World Wars in both the US Army and Navy held that aircraft would quickly master the submarine. While this was ultimately accomplished, it came about rather late in the war after immense effort in research and design of new equipment and in the development of techniques for co-operation of ships and aircraft. Certain improvements in U-boat design and equipment which appeared too late to become operational on a large scale made it extremely doubtful that Allied superiority would have long prevailed. The publication also mentions that those who questioned the importance of aircraft were equally far from the mark. After analysing a considerable amount of evidence, the conclusion is reached that while times do change, revolutions are seldom as complete as the revolutionaries hope.

The publication contains some other interesting points such as that the experiences of warfare are never conclusive. They cannot be controlled like experiments in a laboratory, but

HMAS GLORIOUS

Photo: A. &. J. Pavia — *Supplied by J. Mortimer*

must be taken as they occur. The impact of technology on modern warfare is such as to render generalisation and prediction doubly dangerous. Another point is that there exists no single science of war. There are many sciences with which war is concerned but war itself is a practical art and skill. It is impossible ever wholly to anticipate wars' requirements as the experiences of the Japanese and Germans revealed. Any exclusive adoption of weapons or types of weapons immediately limits freedom of action and greatly simplifies the enemy's problem of defence. War is a phenomenon of immense complexity whose problems are solved pragmatically by hard experience and clear thinking. There is a danger that investigation of a single aspect of one war may give rise to an unbalanced interpretation. Also limitations are as significant as accomplishment.

The report states that certain features of the war in the Pacific are of such importance that they must be considered in any planning for the future. Features which are germane to this talk are:

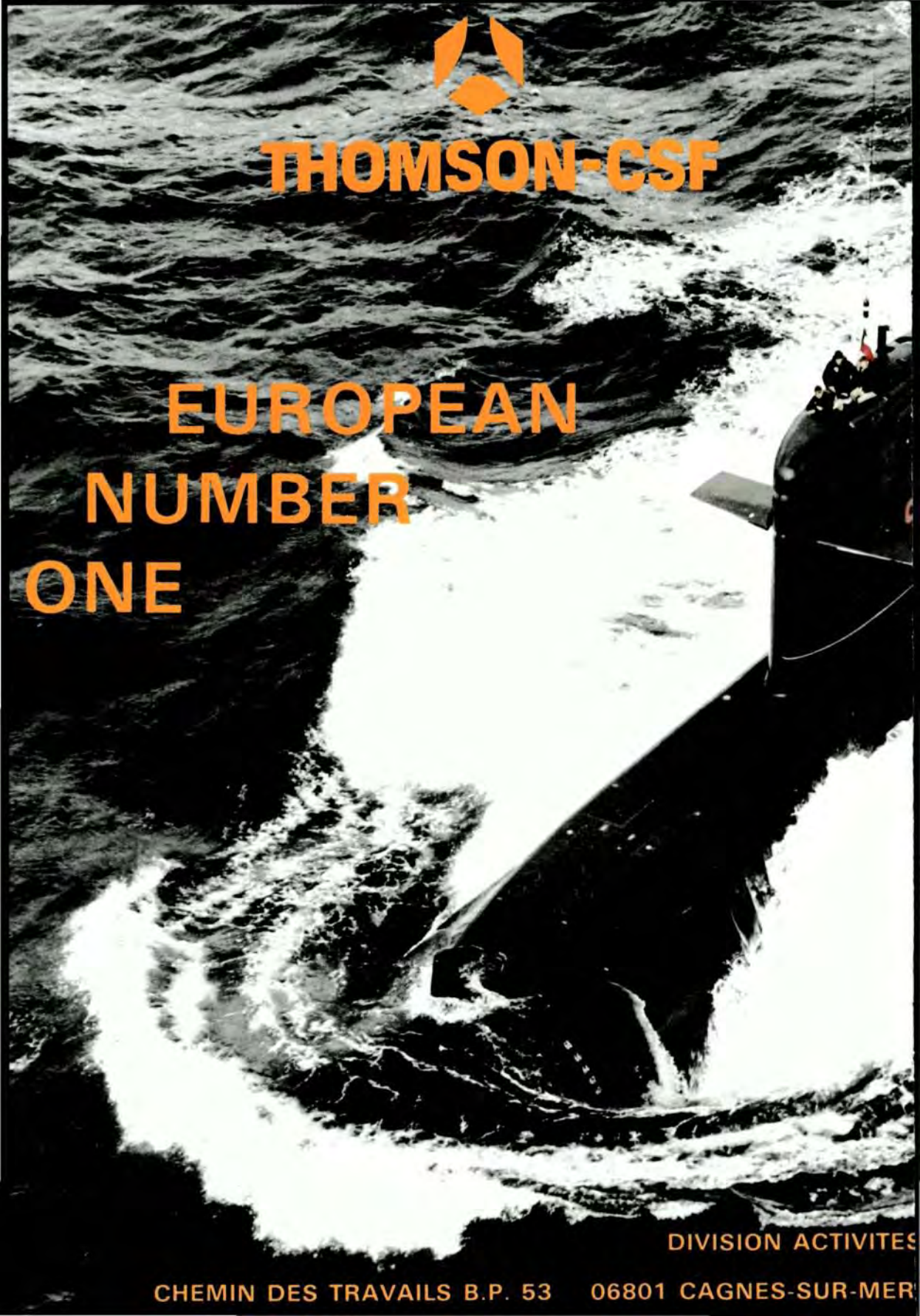
- contol of the air was a pre-requisite to control of the sea
- local control of the sea permitted the landing, support and supply of amphibious forces on hostile shores
- naval aviation was an integral part of the naval forces and as such possessed the specially designed planes and equipment and employed the special tactics necessary to fulfill its role

A more general axiom is stated that technology is never static; it produces changes in the methods and tactics of warfare but it does not alter basic concepts of strategy. The experience of nations besides the US shows, and the lessons of the war confirm, that modern warfare is highly specialised and each phase requires its particular aircraft equipment and tactics. In naval warfare, the necessity for complete integration of naval aviation with the other naval forces was completely demonstrated in the conflict with Japan.

I mentioned Corbett's view that maritime strategy must be seen as a part of a larger national strategy which in turn derives from national policy. Relating this philosophy to Australia I can do no better than to quote Dr. Robert O'Neill. He said:

> 'Is it the purpose of the Australian Defence Force to be able to influence developments in Australia's regional environment or is it simply to defend the coastline and immediate approaches thereto? If it is the former, then a Navy without airpower will not meet the requirements. If it is the latter, then Australia must be willing to stay on the sidelines in regional developments which in the past she has found it wise to participate in.'

I have reached the end of my talk and you will have noted that any opinions I have given have been based either on actual events or the views of those who are or were well qualified to state them. My object has been not to live in the past, but to learn from the past.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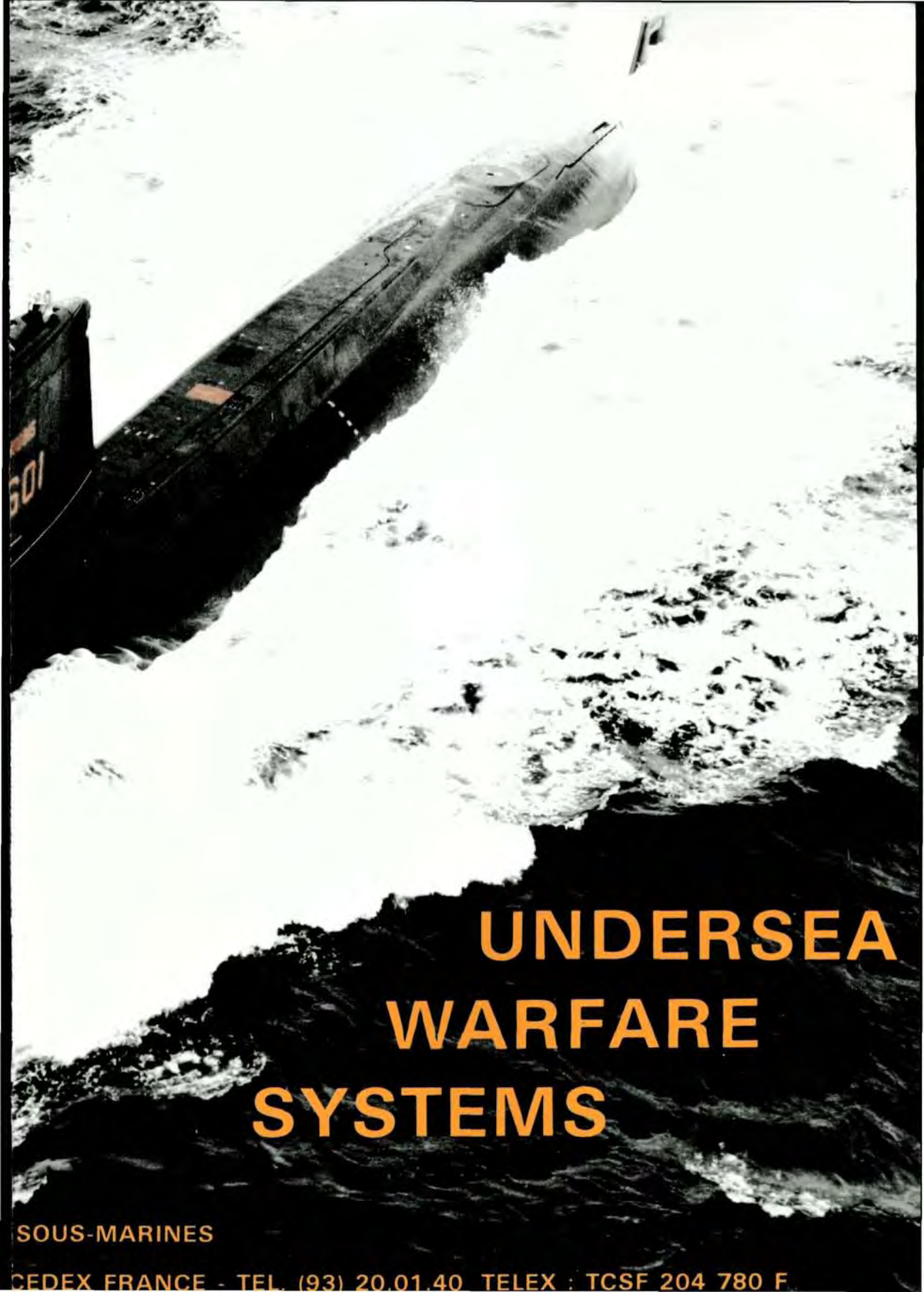

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RAN CRUISER AIRCRAFT

by Lieutenant Commander R.M. Jones RAN

An earlier article (Volume 7, Number 1) described attempts by the Australian Naval Board in the early 1920s to obtain reconnaissance aircraft for cruisers. Despite considerable interest in using aircraft from ships for reconnaissance and gunnery support, a suitable aircraft could not be found to operate from the light cruisers then in commission in the RAN. In June 1923, the Naval Board decided that Australian cruisers would not operate wheeled aircraft from turret platforms, nor would seaplanes be routinely embarked.

By the late 1920s, several important changes had taken place to the conditions prevailing in 1923. Firstly, the RAN had two newly commissioned heavy cruisers. These were HMA Ships *AUSTRALIA* and *CANBERRA* designed up to Washington Treaty limits of 10,200 tonnes (10,000 tons) and 20.3 cm. (8 inch) guns. Although not initially designed to carry aircraft, weight savings during fitting out in the first of class (*HMS KENT*) allowed weight for an aircraft and associated equipment.[1] Secondly, the flying off platform had been superceded by the aircraft catapult which could launch a seaplane for alighting on the sea after its task was completed. A crane could complete recovery of the aircraft ready for another flight, ie, the cruiser-borne aircraft could be used repeatedly and was no longer limited to a single use. Thirdly, aircraft were now much better able to withstand the salty, humid marine environment; metal was replacing wood in construction and the beneficial results of considerable experimentation by the Royal Navy in preservation of materials were incorporated.

One factor had not changed since the early 1920s. Naval guns still needed an airborne spotter to achieve maximum efficiency and the need for beyond-visual-range reconnaissance remained.

The Naval Board accordingly decided the heavy cruisers would each carry a reconnaissance aircraft with associated catapult and crane. Despite early hopes that both cruisers would be fitted with aircraft and aviation facilities during fitting out in the United Kingdom, delays occurred in designing production catapults. Further delays in selecting a suitable aircraft meant that both cruisers spent several years in commission with a catapult platform aft of the funnels, but with neither catapult nor permanent aircraft.

Financial difficulties during the Depression ensured that they remained without permanent aircraft, especially as the seaplane carrier *HMAS ALBATROSS* provided aircraft for the Australian Squadron after 1929. Australian naval aviation of the period was concentrated in this unconventional ship and her aircraft complement of six Seagull III amphibians. With *ALBATROSS* available there was little demand to embark aircraft in the cruisers, but a few embarkations of a trial nature did take place — the first in 1931.

1931 Trials

In September 1981, *CANBERRA* carried out an Island Cruise north of Australia. Naval and Air Boards both believed she should carry an aircraft for intelligence gathering and to allow exercising of a recently installed high angle gunnery control system. One Seagull transferred from *ALBATROSS* to *CANBERRA* in Hervey Bay on 3 September. The aircraft was stowed on the aircraft platform facing forward with wings normally spread and the main wheels on the forward edge of the platform. A tail trestle under the rear fuselage was adjusted in height to keep the wings at zero incidence to the wind to minimise stress on the airframe.

When the Seagull was required for a flight the pilot, observer and telegraphist manned the aircraft on the platform and the engine was started. After the securing strops had been removed, *CANBERRA's* aircraft crane hoisted the Seagull just clear of the platform while quick release pins holding the main wheels were removed. Then the Seagull would be hoisted over the side onto the water for take-off (the wheels were left behind in an attempt to improve the performance of the inadequately powered aircraft). After the flight, the aircraft would alight on the water for recovery by crane. The ship usually stopped for recovery although recovery at slow speed had been practised.

The Air Force party and aircraft were landed on 9 October after a useful trial period which had shown the value of an aircraft and illustrated some limitations.[2] An aircraft could be stowed and maintained onboard without too much difficulty, but as long as the aircraft took off and alighted on the water its operation depended on a suitable sea state. Most operating restrictions stemmed from limitations of the Seagull Mark III which could not take off in a sea state higher than that generated by a 20 knot wind.

The Seagull Mark III

The Seagull Mark III had been designed for spotter-reconnaissance operation from Royal Navy aircraft carriers, battleships and large cruisers. A boat hull and retractable undercarriage were specified to allow operation from land, ship or water as the need arose. The fuselage was circular in cross-section, constructed of diagonal planking, using boat building techniques, and was immensely strong but proportionally heavy. Considerable difficulty had been experienced during development and the Seagull Marks I and II were rejected by the Royal Navy before the Mark III was accepted in 1923, despite very poor take off performance.[3]

Seagull IIIs then served in the aircraft carrier *HMS EAGLE* until 1925 when they were relegated to training duties as unsuitable. In 1925, Australia was seeking an amphibian for surveying of the Great Barrier Reef and for training prior to the seaplane carrier commissioning. Six Seagull Mark III were ordered because it was the only available aircraft in that category.[4] A replacement was, at first, expected to be obtained for service in *ALBATROSS* and the cruisers but a suitable aircraft could not be found and financial problems associated with the Depression increasingly hindered, then stopped, consideration of alternatives for some years. A further three Seagulls were obtained at scrap value to augment the original six and the amphibian was heavily used from *ALBATROSS* until she paid off to reserve on 26 April 1933.

The day after *ALBATROSS* paid off, the Naval Board asked the Air Board to supply one Seagull III for permanent embarkation in each heavy cruiser.[5] Although few of the nine Seagulls bought by Australia were still airworthy, the Air Board willingly agreed and in July 1933 an aircraft embarked in each ship. Seagulls continued to embark in both cruisers when they were away from Sydney until 25 August 1934 when *AUSTRALIA's* aircraft was wrecked by a sudden squall off Western Australia. The aircraft was not replaced before *AUSTRALIA* left Sydney in December bound for exchange service in the

HMAS ALBATROSS

— Supplied by R. Wright

United Kingdom. *CANBERRA* continued to carry one of the dwindling stock of Seagull IIIs until 3 March 1936 when she landed the Air Force's last flyable Seagull III to Point Cook. The amphibian was immediately written off and transferred to Melbourne Technical College as a training aid.

Embarkation of obsolete Seagull IIIs in the heavy cruisers between 1933 and 1936 was not intended primarily as an operational measure; the aircraft was too limited. The useful purpose served was retention in Navy and Air Force of skills and knowledge associated with aircraft embarkation in cruisers. Retention of these skills was justified by imminent availability of an aircraft catapult and of an aircraft designed and built primarily for *ALBATROSS* and Australian cruisers incorporating years of RAAF experience with amphibious aircraft.

The Seagull Mark V

This aircraft, the metal hulled Seagull Mark V, originated in a specification prepared by Group Captain R. Williams (Chief of Air Staff) for the ideal aircraft to equip *ALBATROSS* and the cruisers. The specification had been prepared because there was not available an aircraft considered really suitable for cruiser embarkation. His requirement was, at first, regarded as impossibly demanding by British aircraft firms and also as being unlikely to sell to the Royal Navy which was already committed to the Fairey IIIF float seaplane for the role.

Despite these reservations, the Supermarine division of Vickers (Aviation) Limited undertook to design an aircraft to meet the specification. Work began in 1930 on the project, but a much higher priority order for Royal Air Force Spitfires meant the half finished prototype was forgotten in the back of a hangar for some time. The first flight eventually took place on 21 June 1933 (two months after *ALBATROSS* paid off), and a comprehensive series of trials began.

At this time, the prototype was officially a private venture by Vickers with Australia as a prospective customer. The British Services were committed to alternative aircraft types but undertook operational trials of the new amphibian on behalf of the RAAF. These trials involved operating from an aircraft carrier and battleships in the Mediterranean and around the United Kingdom during which the aircraft proved remarkably seaworthy, as demonstrated by taking off and alighting in a 1.8 metre sea in 30 to 35 knots of wind — conditions in which the Seagull III was helpless.

Before these trials were completed, the RAAF ordered 24 of the aircraft for the naval co-operation squadron. The first production Seagull V embarked in *HMAS AUSTRALIA* at Portsmouth in September 1935. The second production example went to the light cruiser *HMAS SYDNEY*, also in the United Kingdom, in October 1935. The remainder were despatched to Australia by merchant ship except for one sent to Malta to replace *AUSTRALIA's* aircraft after it was badly damaged in a hoisting accident.

The last two aircraft of the 24 ordered for the RAAF arrived in Australia in July 1937. By then a third ship, *HMAS CANBERRA*, had been fitted with a catapult and had embarked her own Seagull V.

Cruisers found Seagull V operations different to those of the very limited Seagull III. This new aircraft was routinely catapult launched and could be despatched in virtually any weather conditions to perform a task. But considerable risk of damage lay in recovery; alighting on the water after the flight could be difficult enough but hoisting inboard was the operation which posed greatest hazard to the aircraft. Once suspended from the crane, the fragile aircraft was prone to swinging in a seaway and, while swinging, could easily strike the side of the ship and sustain severe damage to wings or tail. It had then to be lowered onto the catapult trolley which had upraised prongs designed to engage lugs on the aircraft fuselage, but just as suitable for puncturing the hull as holding it in place. A worked up crane crew, well equipped with fenders on poles and steadying lines, could minimise, but not eliminate, risk of recovery damage.

Use of a cruiser's aircraft in a rough sea was then a matter for command judgement. Among the factors to be balanced were the urgency of the task, motion of the ship in the sea, skill of the crane party, availability of spare wings and tailplanes, repair skills of the maintainers and repair time available. Because of the risk of damage associated with open ocean recovery a very strong preference for recovery in sheltered waters developed in the RAN. Reports of Proceedings clearly show a readiness to use the aircraft for reconnaissance, gunnery spotting and practice torpedo searching, provided the exercise concluded in sheltered waters.

RAN Studies

Aircraft availability would considerably increase if more aircraft were embarked in each cruiser, so each ship was examined for its ability to carry additional aircraft. In 1936, the Assistant Chief of Naval Staff confirmed that three aircraft per heavy cruiser was desirable if proper stowages could be provided from which the aircraft could be quickly transferred to the catapult.[6] Plans were drawn up for modifications to *AUSTRALIA* and *CANBERRA* which showed a hangar on the quarterdeck or replacing the middle of the

characteristic three funnels. Both plans were investigated with the intention of implementing one during modernisations planned for both ships in the late 1930s or early 1940s. Unfortunately, Treaty weight limitations prevented either option being implemented.[7] The planned modernisation was limited to improvements in armour and added anti-aircraft weapons. Plans to fit additional aircraft in the heavy cruisers would almost certainly have succeeded since the ships were quite large enough to carry more than one aircraft. Several RN ships of the class successfully carried two Walrus amphibians (Walrus was the name given to the Seagull V in British service) in the early 1940s.

The light cruisers were similarly studied. *HMAS SYDNEY* had been fitted to operate two Seafox seaplanes in RN service but this small aircraft was severely limited in utility and the RAN/RAAF quickly decided that the Seagull would be the only aircraft embarked in RAN cruisers. But *SYDNEY* was not large enough for two Seagulls and could carry only one stowed on the catapult.[8] Installation of a catapult in the older *HMAS ADELAIDE* was investigated but abandoned as impractical.[9]

These plans for expanded cruiser avaiation in the 1930s assumed that *ALBATROSS* would be available to provide the aviation training core of the Australian Squadron. In 1936, while still in reserve, she was fitted with a catapult and plans to recommission her with six Seagull Vs were drawn up, first for 1936, then for 1938. Her wartime station would be near Singapore where she could operate in sheltered waters while contributing air reconnaissance assets to the defence of Singapore which was the lynch pin of Australia's maritime defence.[10]

ALBATROSS Sold

The seaplane carrier was planned to recommission in April 1938 manned by personnel from *AUSTRALIA* which was to begin her major refit and modernisation. But, instead of recommissioning in the RAN, the seaplane carrier was sold to the British Government for £275,000 sterling as part of the arrangement by which Australia bought both of *SYDNEY's* sister ships to be renamed HMA Ships *HOBART* and *PERTH*.[11]

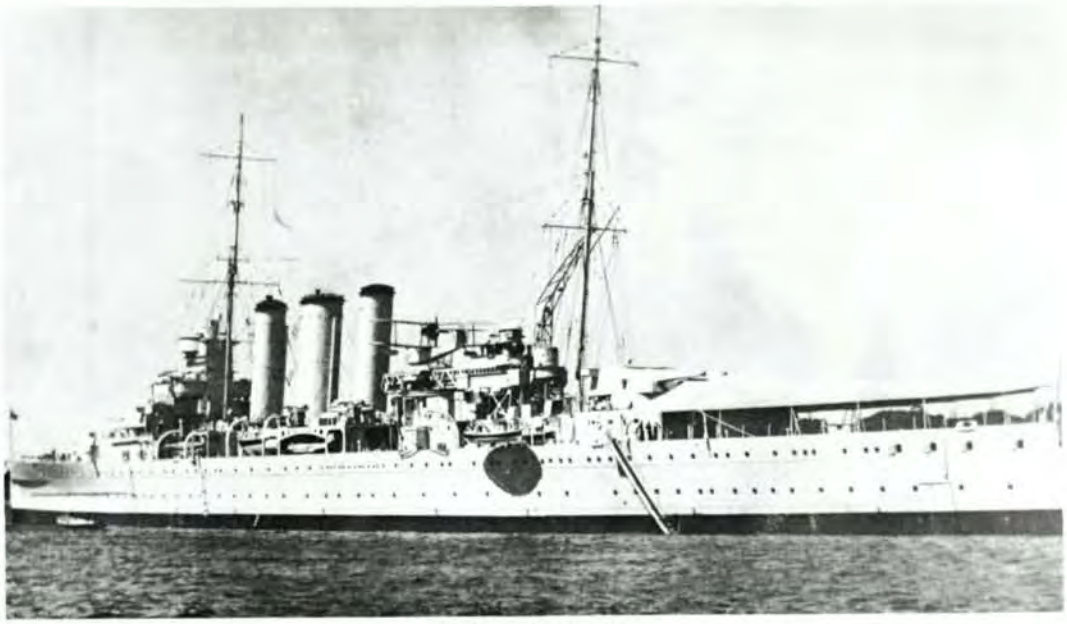
Specific reasons for disposing of *ALBATROSS* have not been found in the archival material but plausible reasons are not hard to deduce. At the 1937 Imperial Conference in London, Australia's implicit trust in the Royal Navy and the Fleet Base at Singapore as sure defences against Japan was shaken when some practical problems of reinforcing Singapore by sea were explained. Advice from the British Government that despatch of naval units to Singapore depended upon peace in Europe and that, even if reinforced, Singapore could not prevent Japanese raids on the Australian mainland, made the Australian Government look more closely at the Australian naval forces available for mainland defence.[12] Under then current principles of maritime warfare, cruisers and capital ships were needed for Australian defence; cruisers and their guns were far more useful than a seaplane carrier, especially if each cruiser carried its own aircraft. Ideally, both cruisers and carrier had their place, but after Depression related reductions in RAN personnel numbers, there was a desperate shortage of trained officers and men. The seaplane carrier was of less immediate value than a cruiser so it was sold.

Both new cruisers had carried a light catapult and two Seafox seaplanes in RN service but would carry a heavy duty catapult and single Seagull in Australian service. Australia was not interested in the Admiralty offer of light catapult and Seafoxes on loan for the 18 months estimated delivery time for a heavy duty catapult. To shorten the time without an aircraft for one new cruiser, the RAN sought approval to transfer *ALBATROSS'* new catapult when the carrier arrived in England. Approval was given and, when *ALBATROSS* arrived with the commissioning crew of *HMAS HOBART*, she secured alongside *APOLLO/HOBART* while the catapult was transferred to the Australian light cruiser. The other new cruiser, *HMAS PERTH*, had to operate without an aircraft while her new catapult was built. She was taken over by the RAN in England in June 1939 and sailed for Australia via America on 26 July 1939, a few weeks before the war began.

War

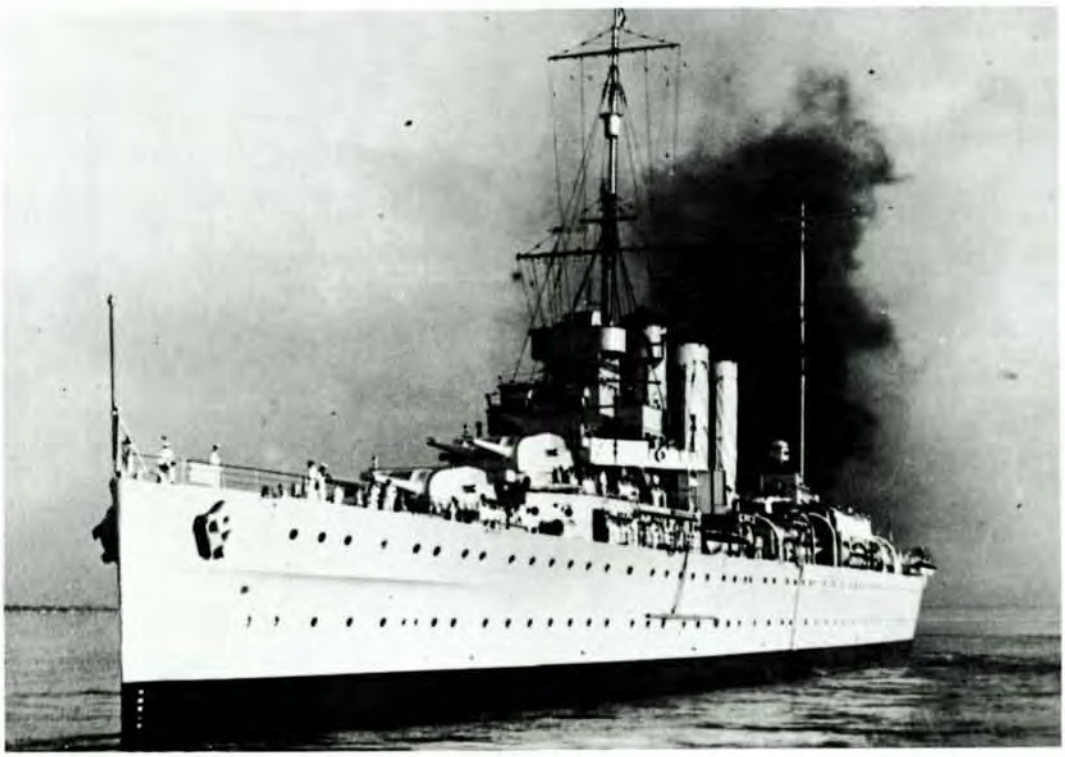
In September 1939, at the outbreak of war, the heavy cruisers (*AUSTRALIA* and *CANBERRA*) each carried a single Seagull and catapult. The light cruisers *HOBART* and *SYDNEY* were fitted with the same design of catapult and a single Seagull. The older light cruiser *ADELAIDE* was unsuited for aircraft embarkation, while *PERTH* was enroute from the United Kingdom without aviation facilities but with a catapult on order.

Aircraft holdings appeared adequate, since 21 of the original 24 Seagull Vs remained. This apparently satisfactory state of 21 aircraft to provide five at sea (once *PERTH* was catapult fitted) was an illusion since there were minimal spare parts holdings and the aircraft had been widely used by the Air Force as a general purpose and utility aircraft. This utilisation may have been reasonable given the amphibians' versatility, but meant that replacements for aircraft unavailable



HMAS AUSTRALIA

— supplied by J. Mortimer



HMAS CANBERRA

Australian War Memorial Neg. 16,664

— supplied by J. Mortimer

while undergoing routine maintenance ashore or for those damaged or destroyed in maritime operations could not easily be found.

The primary task of the embarked aircraft remained that of spotting for the guns. All the disadvantages of a single embarked aircraft still remained, although a technique of manoeuvering the ship to form a 'slick' of smooth water astern for the aircraft to alight upon in safety had been devised. Use of this 'slick' landing technique had expanded the range of sea state conditions under which the aircraft could alight without damage, but did little to reduce the risk to the aircraft while it was being hoisted inboard.

Cruiser borne aircraft were to reach their peak effectiveness in the opening phases of the Second World War when they extended the search range of many cruisers engaged in commerce protection. But by 1945, the aircraft had disappeared completely from Australian cruisers. A succeeding article will explain why.

The Author

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HMAS AUSTRALIA

Australian War Memorial Neg. 7066 — *Supplied by J. Mortimer*

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PHYSICAL FITNESS IN TODAY'S NAVY

by Commander G. Cutts RAN

Rugger is a game for the fit, the enthusiastic, the young men with energy to burn. Coarse Rugby is played by those who are too old, too young, too light, too heavy, too weak, too lazy, too slow, too cowardly or too unfit for ordinary rugger . . . It is only in the coarse section of the game that a player can leave the field to rest after scoring a try . . . When one reaches forty, you have to be careful.

Michael Green[1]

Some soldiers in the USSR have obviously read Michael Green's books on Coarse Sport and Coarse Rugby. A snippet in the Adelaide Advertiser recently[2], announced that a Soviet mechanised infantry battalion mustered for a fitness test, and only five soldiers turned up — the rest went on sick call or volunteered for other duties. The first man home took 15 minutes for the 3 km run (the standard was 11 minutes) and the battalion commander had not showed up 21 minutes later when the testers left. Apparently, results were no better in other units.

The attitude of these soldiers typifies, if we are game to admit it, the attitude of most people, Navy and civilian, towards sport and exercise in general, and towards compulsory sport and exercise in particular. In 1980, the first nationwide study of the prevalence of risk factors for ischaemic heart disease was conducted in Australian State capital cities by the National Heart Foundation in conjunction with the Commonwealth Department of Health. The study found that of people questioned, aged between 25–64 years, 50% of the men and 67% of the women never or rarely engaged in active exercise, and only 16% of men and 9% of the women engaged in active exercise more than three times a week[3]. A similar study in the United States showed that 35% of the people questioned thought that a one hour, ten pin bowling session, three times a week, constituted a sound programme for aerobic fitness[4].

Yet still the Navy persists in the belief that Servicemen and women must be 'fit' and must be made to be fit. The reasons underlying this belief are often displayed in recruiting drives: Service life is arduous, energetic, exciting, demanding and active, requiring a high level of teamwork and morale. Fit people are better at their jobs, more adaptable and less prone to absenteeism. In times of war and major operations, Service personnel will be required to live under difficult conditions and to perform laborious, physically demanding tasks for long hours.

Much of this is undoubtedly true, but changing times have led to changed standards. No longer do sailors run up and down the rigging, or coal ships: developments in technology have led to increasing specialisation and automation, more sailors in sedentary occupations behind desks, pushing buttons and/or watching screens, and to an increase in the number of women at all levels and in most branches. At the same time, the community generally has been showing an increasing mortality rate from coronary heart disease, which accounted for one in every three deaths in Australia in 1960[5]. Although there has been a decline in mortality rates since 1967, there is very little available information on the incidence of *non*-fatal coronary heart disease in Australia. In the United States, a survey between 1966 and 1970 showed an average annual loss to the Navy and Marine Corps, due to coronary heart disease, of manpower worth an estimated $US36 million; the Surgeon-General of the Army recorded 864 'incidents' in 1976, 43% of whom were subsequently lost to the Army — their average age

The Author

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was 41 years, and their average length of service was 19.7 years, ie, when they were at their peak of professional development and of great value to the Services[6].

The moral of this seems to be that we need a different approach. We must recognise that few people in the Navy *have* to be fit in order to do their jobs (examples that spring to mind are clearance divers, marine commandoes) and that what we should concentrate on is the promotion of a voluntary programme of fitness for life, with a special emphasis on prevention of coronary heart disease.

Definitions

This essay does not pretend to be a scientific treatise, and consequently jargon will be kept to a minimum. Anyone interested in delving deeper into the research can follow up the notes and bibliography. Nevertheless, clarification is needed for a few terms which are bandied about in the literature, so that the readers of this essay will understand how the terms are used herein.

'Health' is taken to mean a state of well-being which enables an individual to obtain the fullest satisfaction from life and to have the ability to cope with crises. In order to preserve good health, a person needs to consider such factors as his level of physical activity, his dietary habits, his level of stress, amount of smoking and use of alcohol. A person in good health is obviously free from disease.

'Fitness', or physical fitness in this context, is the state of the body to endure physical exertion and to adapt easily and efficiently to any increase put upon it. The two factors contributing to physical fitness are muscular strength and aerobic capacity, also known as cardiovascular endurance. The former is the capacity of the body to exert force on a given external resistance, and can be developed, for example, by isometric exercises and weight training; the latter is the increased ability of the heart and lungs to deliver blood, oxygen and other nourishment to all parts of the body. The Australian Army says aerobic capacity is 'the indisputable basis of physical fitness'[7] and all authorities would agree. Aerobic capacity, or cardiovascular fitness, can be developed by exercises such as walking, jogging, running, cycling or swimming for 15 or 20 minutes, about three times a week.

'Training effect' is what one gets from moderate, prolonged and regular exercise such as has just been described. Unless one huffs and puffs and sweats (ladies may gently glow) after sustaining an exercise session for at least 15 minutes, no training effect is achieved and no, or very little, benefit is obtained for the heart and lungs. 'Tis unfortunate but true, that the ten pin bowlers mentioned earlier, the lunch-time volleyball players, the weekend golfers and the inter-departmental softball players are not achieving a training effect and thus obtain little aerobic benefit from their efforts. Better to do what they are doing than nothing at all, but the Navy needs to encourage and facilitate more.

The reason why the Navy needs to encourage more in the way of aerobic exercise is to counteract the effects of our changed ways of life on our hearts and lungs. The National Heart Foundation's study referred to at the beginning was into the risk factors associated with 'ischaemic' heart disease: 'ischaemic' is a term used to denote a deficient (not complete lack of) blood supply to an organ or tissue, regardless of the cause. The most common form is coronary heart disease (CHD) which is the narrowing or blocking of the coronary arteries that encircle and supply blood to the heart muscle; it is the commonest cause of premature death in Australia and New Zealand[8]. For this reason, CHD will be used as a generic term for all the forms of heart disease, and will be taken to include strokes, which, although affecting the brain, are often caused by similar conditions, notably high blood pressure and hardening of the arteries.

To sum up, physical fitness in this essay means the development of aerobic capacity so that individuals can maintain extended periods of muscular activity without diminished efficiency. Building up such 'stamina' requires exercises to be prolonged to such an extent that a training effect is achieved: the long term aim of the exercises should not be to enhance an individual's work capacity per se, but rather to prevent an onset of CHD, thus depriving the Navy of his or her services prematurely.

The Current State of Play in Australia

'To expect the sort of person who plays Coarse Rugby, perhaps an undersized youth or flabby clerk, to play forty minutes each way is not only cruel, it is dangerous'[9]. What Michael Green is saying in a jocular fashion is that of those compelled to play sport, take exercise, or pass physical fitness tests, who are not 'natural athletes', many are just as likely to do harm to themselves as do any good. Unfortunately, there is a dearth of statistical research into either fitness levels or injuries sustained during compulsory exercise, and most of what there is has appeared only in the last few years, and often from necessarily limited samples. Nevertheless, some of it makes interesting and relevant reading.

In Australia, the National Heart Foundation survey — to be followed by other surveys in 1983 and 1986 — sets a depressing scene. The figures

previously quoted at the beginning show how few people in the general community engaged in sufficient exercise to maintain cardiovascular fitness (16% males, 9% females). On a slightly lower level, ie, activities such as golf, bowls, yoga, the figure for those who engaged in such exercises three times a week or more were even lower — 4% males and 3% females. However, the figures rise when one looks at those engaging in 'any other active physical exercise' three times a week — activities such as gardening, dancing, woodwork — 25% for males and 50% for females. Probably as expected, the number of people engaging in the first two categories decreased markedly with age, whereas there was a corresponding increase with age in the third category. The lack of need for physical fitness in order to do one's job is exemplified by the fact that only 11% of males and 7% of females reckoned they had jobs which required heavy physical exertion. As a cycling commuter of some note, I had mixed feelings when I read that 95% of both males and females *never* used a bike to get to work — and approximately 60% of each sex walked less than 100 metres to get to work![10]

The survey provides a wealth of data about the 5,617 people who participated — not a large figure, but representative. In addition to the figures quoted, there are details about their height, weight, blood pressure, pulse rate, use of alcohol, smoking habits, psychological disorders and many more. Of relevance to future comments in this essay, 48% of men over the age of 35 years were overweight or obese.

But what do these figures mean in relation to Naval personnel? Although there were only 16 Servicemen included in the survey, one can assume that figures produced apply equally to Service personnel on the grounds that US statistics, quoted below, were shown to bear a close correlation between Service personnel and civilians. We may think that soldiers and sailors are fitter than their civilian counterparts, but overseas evidence is that there is no discernible difference. Unfortunately, after two years of a pilot Personnel Exercise Programme (PEP) in the RAN, there are no available statistics to show how many participated, passed, failed or were injured in the process. The Australian Army is currently trying to do what the Navy has abandoned as unworkable (as discussed later) — an annex to Army Office Staff Instruction 21/82, dated September 1982, says that soldiers of all ranks who do not pass at least two Physical Training Tests during a reporting period of 12 months and who are not declared medically unfit will be 'assessed as unfit and then recommended for remedial training, be medically downgraded, reposted or transferred, or be recommended for discharge'[11].

The Fitness of Service Personnel in the US

As stated earlier, there is little relevant research on the fitness of Service personnel, but surveys have been conducted in the US Armed Forces, particularly since females were allowed, by Presidential decree, into the Service Academies after 1976. Similar research has been conducted into the armed forces in Canada, Norway and Sweden, and reports indicate a close correlation.

The articles can be conveniently divided into three groups: those relating to compulsory physical fitness programmes for men and women at the Service academies, those referring to recruit training, and those dealing with specific problems of the over 35 year olds.

Prior to the admission of females to the US Military Academy, data were collected from over 3000 young people aged between 16–22 years to see if any physiological performance standards could be produced which showed or allowed for differences between men and women[12]; none were found, so the female programme was established as closely as possible to the men's — one difference found in all three academies was that women could not perform one pull-up (only 3% could), though standards improved with practice. In all three academies, the women now do similar programmes, and results from the US Naval Academy are quoted as typical[13]. There were 63 females in the first intake in 1980, 69 in 1981 and 78 in 1982; in general, women visited the sickbay twice as often as men for blisters, minor sprains and strains, and three times as often for orthopaedic shin splints, stress fractures, tendonitis and more severe strains and sprains. However, visits decreased after the initial training period as the women acclimatised and their physical training test scores improved. The researchers suggest the problems are caused by poor conditioning prior to entry, females' greater body weight to fat ratio, limited leg strength and inherent physiological differences. Relevant to this essay are the conclusions that the more sedentary and unconditioned *any* person is prior to engaging in strenuous physical activity, the more likely are his/her bones to become weak in areas of stress; and performances improve dramatically when trainees are divided into ability groups.

Just as the researchers at the academies found that cadets' fitness compared closely with equivalent civilian college students, so general service recruits compared favourably with civilians and recruits in other countries[14]. Most of the recruits, and cadets, showed a significant increase in performance during the initial training period, but an equally significant decline once they had been categorised into specific job classifications, and then an even greater decline

with age, often to the pre-recruit level of fitness. One particular survey was of 3171 men aged 17–55 years and showed, for example, that infantry soldiers aged between 17-29 years were fitter than their naval or air force contemporaries; there were fewer differences between the Services at ages 25–39 years and none at all after 40 years[15]. That is, regardless of the needs of your job, beyond a certain age all specialisations show equal lack of fitness as administrative tasks dominate.

In the Australian Services, the saying 'Life Begins at Forty' is taken to mean that that is the age one begins to have annual medicals and annual ECGs. The American Heart Association and the American College of Sports Medicine propose a drop in age to 35, at which age everyone should be tested for cardiopulmonary system, musculoskeletal structure, assessment of heart risk factors and ECGs. No one who was assessed as a high risk — or who was suffering one of the many laid down conditions, or taking any of the listed drugs — should be allowed to exercise, unless on an individual programme and medically supervised[16]. A survey of 400 women in the US Army, aged between 18–29 years, showed even they lost some 13 days in an eight week programme due to injuries[17]; although 56 men aged in excess of 35 years at the US Military Academy proved to have a substantial level of fitness, the researchers still felt the need to insist that other such types should have very careful medical screening before engaging in fitness programmes in order to cut down on time lost through injury[18]. A health and aerobic fitness test of 430 members of a Canadian battalion in 1977 showed of those aged 18–24 years, 81% had a high level of aerobic fitness — the figure declined to only 31% of those over 40.[19].

The conclusions from these overseas surveys into the fitness level of Service personnel are that, though the numbers sampled may be small, and the research too recent for valid inferences, fitness is improved to any marked degree only when programmes are compulsory during initial training; thereafter, fitness levels decline; special care may need to be taken when integrating women into male orientated programmes; care *must* be taken when encouraging over 35 year olds to participate in fitness programmes; and all individuals perform better when training in ability groups rather than year or class groups.

What To Do

> 'Finally, a word of advice about training. Don't.
> It is difficult to exaggerate the harm which training causes to Coarse Rugby players. In their state of health, such violent exercise can be dangerous. The over-exertion can weaken the heart and strain the vital organs.'
>
> Michael Green[20]

Although not related, a wing commander friend of mine called John Green once said 'If you want more exercise, get a heavier beer glass.' The two Greens share the same cynical attitude to sport and exercise, but the former has the virtue of occasionally espousing truths in his anecdotes. For there appear to be no worries regarding young Service people, who tend to be fitter and carry less body fat than the oldies. Unfortunately, the oldies begin once the recruits and midshipmen leave their respective periods of initial training and begin earning their keep — and from then on, enforced physical fitness training could well be dangerous.

And here lies the rub. Employers have an interest in keeping their employees fit — pecuniary if not moral. In one ten-year study of 5584 Navy enlisted male personnel in the United States[21], the total number of non-effective days due to injury was 82,451: this is expensive as it stands, but more so when one realises that in days of restricted ceilings there are no reliefs, often, to do the jobs of the missing men — so they either do not get done, or the remaining men work twice as hard. A further benefit to employers is that improved physical fitness appears to have a significant positive effect on individual leadership traits, in that personality and behaviour change for the better.[22]

Many civilian corporations are now sponsoring and paying for exercise programmes for their employees because of the benefits of decreased absenteeism and accident rates, and increased productivity and worker satisfaction. Examples in Australia are the Hospital Contributions Fund (Sydney), Clemengers Advertising and G.J. Coles. The attraction of the company sponsored programmes is that they are run by experts in pleasant facilities (company or other commercial gymnasium); programmes are supervised and tailored for individuals and/or groups; contents are variable — ie, a mixture of activities; and times are flexible to suit individual requirements. The result is that the immense psychological barrier is being overcome: to the majority of people — the 80% in Australia who take next to no exercise — physical fitness training is hard, painful, boring and time consuming. Frequently, it is a source of embarrassment (unsightly figures, exposed to public view etc) and often it is connected in people's minds with lack of agility in school sports, and previous failures.

The Navy must face up to the results of the

growing body of research. 'In the absence of an obviously job related requirement for physical fitness, some equally persuasive argument must be advanced to convince the radar technician or filing clerk. Physical fitness and its role in preventive medicine would seem a likely candidate.'[23] 'A new rationale, one which places more emphasis on physical fitness *as part of a healthy lifestyle* is required in the modern Canadian forces.'[24] Compulsion, for other than new recruits, does not work and can be dangerous: people get fit for *the* test and there are usually no lasting benefits, because the required pre, post and, where necessary, remedial training are beyond our manpower capabilities, to say the least; tests are conducted for large numbers of mixed abilities at the same time and place — so the Coarse Sportsmen and women are embarrassed and/or alone on the track; and morale takes a plunge every time the next PEP or PTT approaches.

There are many options for the Navy, and I will offer the bare bones of only three, which can be taken separately or in any combination. However, if *anything is to be done, there need to* be clear policy directives from on high, as well as encouragement, money, time and example. Half measures will achieve next to nought; let us follow the precepts of the RAN Training System and first analyse the need. If the policy makers agree there is a need, then they should be prepared to support the programme(s) that evolve(s).

First, and this is not in priority or sequential order, the Navy could well rethink the role and purpose of the Physical Training Branch. I would suggest the PTIs become members of a Physical Education and Recreational Training branch — the former to look after the development of physical fitness programmes as per this essay, concentrating on aerobic activities and older personnel. The emphasis should be on fun, variety and lifestyle; facilities should be made attractive (I do not have to list the differences between a typical Navy gym and a Lifestyle Centre) and/or subsidies arranged at commercial enterprises; instructors should be encouraged to obtain civilian expertise and qualifications — those who have them already should be used to advise policy, and plan changes and programmes. The Recreational Trainers should continue as do to present PTIs, but, with a greater emphasis on the wider meanings of recreation — eg, team and individual games and sports, adventure training, outward bound activities. They too should be encouraged to undergo courses in recreational planning. G.J. Coles' budget for physical fitness is something like $200,000 per annum: we have the best PTIs in the business but they are still shackled by the implications of 'muscle bosun', 'springer' et al.

Secondly, those PTIs who have gained academic qualifications already should be used to form one or more Physical Fitness Liaison Teams, coupled with a doctor and a nursing sister, headed by a 'layman' to keep the experts on the narrow, jargon-free path. The teams would visit ships and bases to advise on physical fitness, give instructional talks, conduct sample tests, prepare research papers. There is considerable scope for the RAN to gain a foothold in international literature on this subject, and the National Heart Foundation would be delighted to assist and/or cooperate. The teams would not be expensive to run, would need little more equipment than a bicycle ergometer, and would have considerable benefits.

Thirdly, there is a need to involve the potential CHD patients — on a voluntary basis, of course. The US Army War College recognised the need, in a paper published in 1980, to 'intensify efforts to conserve the Army's experienced personnel resources through meaningful evaluations and fitness programmes for soldiers of every age, rank and job speciality.'[25] I suggest that the Navy sponsor an aerobic club: as members complete a medical, so they should have a heart risk factor test (as per the National Heart Foundation — a questionnaire plus a few sample tests, including blood pressure, cholesterol/triglyceride levels), be recommended for a course of aerobic training (including advice on smoking, alcohol, diet) and be given a membership card to NAK. The latter stands for Naval Aerobic Klub and was chosen as an example of an acronym which can be used to stimulate interest — it has connotations of 'knack' (expert skill) or 'knackered' as in horses so weak and exhausted that they are ready for slaughter, or NAKED, an informational bulletin. NAK would be run, perhaps, by the Physical Fitness Liaison Teams — with local representatives and regular advice, bulletins, events and meetings, rather as Weight Watchers is run. The membership cards would contain all the details of the heart risk factor test and would be updated each medical, if not before — either on doctor's orders or by patient action. Membership would be free and for life — so there would be plenty of space for records to show improvements. In fact, they could be booklets, with spaces for aerobic training programmes/results, advice on heart rates, alternatives to jogging etc. The Physical Fitness Liaison Teams could liaise with the Directors of Naval Safety, Training, Education and Health. Wives and children should be encouraged to become members, and events would be non-competitive: not like the Defence Fun Run round Lake Burley Griffin — 'The event is not a race (underlined) —

the first six participants to finish in each team will be considered for the winning team'! The emphasis would be on encouraging all naval personnel and families to huff and puff for 20 minutes at a time, three times a week — doing it in a variety of ways to suit each individual and keeping personal records (not compulsory but advised, to show improvements).

This essay is not a scientific treatise, nor is it a staff paper which poses a problem and comes up with *the* answer. Rather it is a discourse on the subject, throwing up a few ideas in passing. Alan Brecht wrote a like essay in 1977[26] and many of his ideas were incorporated in the PEP test, which I considered good in concept but lacking in practice. We have not got the manpower for all the ramifications of a PEP test programme, and the people it is designed to help are mostly antagonistic or apathetic. Voluntary programmes may or may not work. An experiment reported in January 1982, divided some 295 military personnel aged 40–53 years into three groups: inactive, moderately active, and active. The groups were to follow an unsupervised, self-administered training programme, but after six months, 40% of the inactives had not participated to any noticeable degree! I suggest that the least the Navy can do is to try something positive, and report the results, to enlarge the growing body of literature. Even a small success rate would be significant and worthwhile, when so many of the civilian community are so unfit.

Conclusion

I have been intending to write this essay in one form or another for many years, for it is as tragic to see people cut down in the prime of life through CHD and related or similar diseases, as it is to see them killed in car accidents. Both have the same psychological effect on the majority of people — they drive slower for a while, or smoke fewer cigarettes, but neither lasts for long and the crossed fingers hopefully ensure it will happen to someone else not to them. Alas! There is sometimes nothing the most careful driver can do to avoid a road accident, but we can all do something to avoid CHD.

The increasing technology and automation which have meant that fewer naval jobs *demand* a high level of physical fitness, have also meant more time has to be spent on specialist training, so paradoxically there is less time for physical training. Nevertheless, tests have shown that a high level of physical fitness does lead to better morale, general well-being and enhanced work capacity, and it does prevent coronary heart disease.

The Navy has a vital interest in maintaining the health of its employees, and a firm commitment needs to be taken. Aerobic exercise is essential for maintaining and improving physical fitness, and entails so little in the way of manpower, facilities and individual effort. However, there is a large psychological barrier to be overcome, and that may require some initial doses of experts, time, money, and, above all, Navy wide support. If there is any doubt about the need for or success of a Navy programme, it could be tried out first with key and older personnel, but only after extensive medical screening. Compulsory programmes have been tried and have failed, so perhaps we should try a voluntary programme, with education for all members, and their families, on physical fitness for life. And let us concentrate on trying to make it attractive in all respects.

'I decided I ought to train, so I turned up one Thursday . . . It was awful . . . It was heart rending to see poor fat fellows, who should have been at home with their children in front of the television, stumbling around the gymnasium with their stomachs and cheeks wobbling and sweat streaming off them. Then by contrast, there were pathetic thin little chaps being crushed against the parallel bars during some sadistic game . . .'

Michael Green[27]

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Type of diet (Q.26, Q.27, Q.28)
Q.26 Are you on a fat modified diet to control blood fat?
Q.27 Are you on a diet to control your weight?
Q.28 Are you on any other special diet?

6.7.4 ESTIMATES, AGE, SEX

All cities	*25-29 years*	*30-34 years*	*35-39 years*	*40-44 years*	*45-49 years*	*50-54 years*	*55-59 years*	*60-64 years*	*All ages*
Male									
Column percentages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fat modified diet (Q.26)									
Yes	.0	1.4	2.9	1.3	2.6	7.7	7.4	9.2	3.4
No	100.0	98.6	97.0	98.7	97.4	92.3	92.4	90.5	96.5
Weight diet (Q.27)									
Yes	3.5	6.6	5.2	5.0	7.0	7.9	10.5	9.7	6.5
No	96.5	93.2	94.8	95.0	93.0	92.1	89.3	90.1	93.4
Special diet (Q.28)									
Yes—diabetic		.6		1.5	.4	1.0	2.3	2.2	.8
Yes—salt restricted	.0		.4		.7	.2	.7	.3	.3
Yes—other	.0	.3	2.4	1.1	1.8	1.6	3.5	1.8	1.4
No	99.9	99.2	96.7	97.4	96.6	96.4	93.0	95.5	97.2
Female									
Column percentages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fat modified diet (Q.26)									
Yes	.1	1.0	.9	2.5	3.5	4.0	9.4	7.9	3.1
No	99.8	99.0	99.1	97.5	96.0	95.8	89.4	91.9	96.7
Weight diet (Q.27)									
Yes	12.5	11.4	11.0	13.9	14.1	9.6	16.1	10.8	12.4
No	87.5	88.6	88.9	86.1	85.3	89.1	83.1	89.2	87.3
Special diet (Q.28)									
Yes—diabetic				1.2	.8	.8	.2	2.1	.5
Yes—salt restricted	.0	.3	.4	.2	.2	.6	2.4	.1	.5
Yes—other	1.8	1.3	1.5	2.7	2.1	2.3	2.0	2.9	2.0
No	97.8	98.2	97.8	96.0	95.7	95.4	94.6	94.8	96.6

Q.32 Which of the following do you eat most?

6.7.12 ESTIMATES, AGE, SEX

All cities	*25-29 years*	*30-34 years*	*35-39 years*	*40-44 years*	*45-49 years*	*50-54 years*	*55-59 years*	*60-64 years*	*All ages*
Male									
Column percentages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Butter	33.1	29.5	25.5	24.2	26.8	29.9	20.6	23.8	27.3
Polyunsaturated margarine	52.6	59.6	58.9	62.6	59.1	61.4	67.0	64.8	60.0
Other table margarines	9.0	4.9	6.9	8.5	6.6	3.4	6.1	6.2	6.5
I rarely eat any of these	2.4	5.8	7.2	4.0	5.6	3.2	3.3	1.5	4.3
I don't eat any of these	2.9	.3	1.4	.7	2.0	2.0	2.9	3.7	1.9
Female									
Column percentages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Butter	30.1	25.3	24.5	25.4	30.9	21.8	25.6	25.0	26.3
Polyunsaturated margarine	58.1	63.5	65.8	61.9	59.5	65.9	64.0	67.2	62.9
Other table margarines	6.9	7.6	5.0	6.5	7.1	4.1	4.8	5.1	6.0
I rarely eat any of these	4.2	3.4	3.8	2.1	2.1	6.3	3.4	1.6	3.5
I don't eat any of these	.7	.3	1.0	4.1	.4	1.8	2.2	1.0	1.3

Extracts from the NHF Risk Factor Prevalence Study, 1980.

This paper was prepared for the 1982 Commonwealth Defence Science Organisation Seminar

THE MULTI CHOICE MENU — FRIEND OR FOE?

by Commander D.K. Saxon RAN

One of the essential requirements for victory in this war is to quit pampering tastes, whether military or civilian. In this respect we have much to learn . . .

George M. Douglas[1]
Explorers Club
August, 1942

This rather brutal war-time opinion from a veteran explorer in a letter to the Quartermaster General, US Army, in 1942 has probably been echoed in peace-time by many a Service caterer. It seems to me that in the Australian Defence Force (ADF) today we tend towards this 'pampering' as a major tool towards our goal of customer satisfaction. Many take the view that a Serviceman who may at any time be called upon to give his unquestioning contribution to the multifarious demands of Service life should surely be offered all the possible creature comforts.

In my view, the role that an effective food service system has on morale, health and fitness has never been more pronounced than it is today. It has long been recognised that a viable fighting force needs to be supplemented by an adequate and nutritionally balanced diet coupled with regular physical exercise.

Australia's Army and Air Force attempt to achieve their dietary objectives through a ration scale system of feeding. The Australian Defence Force Ration Scale (ADFRS)[2] has therefore been designed to provide a nutritionally adequate diet in a form that is most acceptable to Army and Air Force personnel, both in war and peace. In this scale, rations are provided on a 24 hour entitlement basis, or, where this is impractical or inappropriate, on a single meal basis. The scale is sufficient to provide entitled persons with a daily food intake equivalent to an energy value of about 17,000 kjs (4080 KCAL). In addition, special ration scales are issued 'as and when required' to meet specific commitments, eg, camps and field exercises and flying duties.

The ADFRS is reviewed regularly by the ADF Ration Scales Committee to which all three Services provide a representative (Navy-observer status only). Quality control of foodstuffs for the Services is maintained by the maintenance of ADF Food Specifications (ADFFS) which are monitored and updated by the ADFFS Committee. Again, as with the ADFRSC, all three Services are represented on this committee.

Overall management of the ADFRS, ADFRSC, ADFFS and ADFFSC is conducted by the Armed Forces Food Science Establishment (AFFSE) at Scottsdale, Tasmania. In broad terms, the basic charter of the AFFSE is to determine the joule (calorie) and nutrient requirements of Servicemen under the various conditions in which they might be required to operate, and to translate these into practical ration scales and ration packs for use under Service conditions. More specifically, AFFSE is involved in the following:

- a watching brief, as the scientific aim of Service feeding, over new developments in food service and the evaluation and interpretation of such information for Service use;
- development of new products for use in ration packs;
- evaluation of food specifications within the ADFFSC;
- studies into the dietary effects of foodstuffs on the health of Servicemen, such as by mass surveys;
- development of components for naval feeding systems, eg, submarines and minor war vessels; and
- consultancy on food related problems.

In the Royal Australian Navy, victualling (foodstuffs) is controlled, not by this ration scale but a daily monetary allowance.

This monetary allowance is seen to be more appropriate to the special requirements of a highly mobile warship. This monetary system of victualling allows flexibility for such aspects as the ship's customer preference, financial considerations and staff and equipment capabilities in confined working spaces.

The monetary allowance or daily victualling allowance per man per day is monitored and updated as prices of foodstuffs fluctuate. Variations in the victualling allowance accord generally with movements in the food component of the Consumer Price Index (CPI). Special rates of the daily allowance are available to cater for the various sizes and classes of ships, ie, the larger the number victualled the smaller the amount of the daily victualling allowance and vice versa. Special rates are applicable to submarines and training ships, and establishment and supplementary allowances are available for ships deployed overseas or working in an operational environment.

To ensure a degree of uniformity in the standard of meals between ships and establishments, detailed guidelines stating the minimum requirements for a nutritionally balanced diet are provided. In addition, the proposed weekly menu is approved by the Commanding Officer, on the advice of both the Medical Officer and Supply Officer. An analysis of these weekly menus indicates an average of 15,000 kjs (3,500 KCAL) provided for each man per day are invariably from the five basic food groups viz bread and cereals, vegetables and fruit, milk (includes cheese and eggs), fats and meats (includes fish and poultry).

It can be seen from this brief overview of the two feeding systems used in the ADF that the Serviceman of today is offered a well balanced and nutritionally adequate diet. Why then do we have the problem of obesity within the ADF? The following reasons are suggested.

Firstly, in their desire to please, satisfy or pamper their customers, Service caterers have introduced a variety of foodservice systems. These systems include:

- **Speed Lines.** In this system 'short order' style food is presented for the customer to eat in or take away. It invariably includes food of a high carbohydrate level and is usually cooked in oil or fat or served in a bun.
- **Brunch.** This system of foodservice combines both breakfast and lunch and is intended to provide the customer with a fresh meal 'cooked on demand' between the hours of 0800-1300 (usually only served on weekends and public holidays). Again, because of the 'short order' style of cooking, foods tends to be high in carbohydrates and cooked in oils or fats.
- **Salad/Curry Bars.** This system allows good scope for the weight conscious person and is probably the most effective from a dietary viewpoint.
- **Multi Choice Selection.** In this system the basic ingredients are produced in a variety of dishes, thereby offering a larger range of choices for the customer.

In many ships and Service establishments across the ADF these foodservice systems operate in concert with one another and are collectively termed the Multi Choice Menu.

It is suggested that the Multi Choice Menu is the contributor to obesity in the ADF. It is apparent also that alcohol consumption and life style excesses of some of our Servicemen are contributing factors. However, their influence on the high incidence of obesity is, in my view, less pronounced than the effects of the multi-choice menu. If one accepts that obesity is caused to a large degree by over eating, ie, obesity arises when the amount of food consumed each day provides more energy than the energy expended in maintaining the body's day-to-day mechanism, then it follows that the Services may be unwittingly contributing to obesity within the ADF.

In 1979, the National Health Medical Research Council (NHMRC)[3] recommended 13,200 kjs for Grade 2 activity[4] as being adequate in maintaining good health under normal working conditions and for the provision of sufficient nutrients. In the ADF, however, it will be seen from earlier comments that dietary intakes far in excess of this recommended level are consumed daily. Furthermore, the previously stated amounts of 15,000 kjs for Navy and 17,000 kjs for Army and Air Force personnel do not take into account the joule content of alcohol, pies, cakes, sweets and soft drinks which are consumed over and above normal meals.

Secondly, to compound the problem outlined above is the situation whereby the two foodservice systems operating in the ADF do not address the different work load requirements for specific jobs. In the Services you have personnel doing a wide range of jobs; some of these jobs are manual and extremely hard; others involve office or clerical work where manual effort is limited. Regardless of the work undertaken, or, of the requirement to refuel individual body needs, personnel are offered the same food and many eat a similar amount. How could the individual's food intake be controlled when he or she makes a personal selection? How can a boiled potato be made more attractive than chips, or a piece of fruit more tantalising than a cherry pie?

Lastly, the importance of physical fitness is well recognised within the ADF and is reflected in the official policy on sport and recreation. In this

regard physical fitness programmes such as the bi-ennial 'PEP' test have been introduced. Failure to meet the fitness requirements of this test may result in job, posting, promotion and medical penalties being imposed. Despite the effects these penalties may have on a person's career the incidence of obesity is on the upsurge and it is now generally accepted that the PEP test has failed.* I believe a contributing factor to this failure is that insufficient consideration was given to the relationship between the physical and dietary requirement of personnel when the PEP test was introduced.

It is suggested that what the ADF needs is a dietary system that provides for a reduced intake and an intensive training programme for caterers and customers alike to highlight the benefits of a properly balanced diet. Until this action is taken I believe that the Multi Choice Menu will be (continue to be) a foe instead of a friend in the ADF's attempts to reduce obesity to acceptable levels.

*** Footnote:**

Following an evaluation of the PEP Programme it was decided to abolish the PEP tests from January, 1982. An interim physical fitness programme has now been introduced pending the development of a new RAN Fitness Policy.

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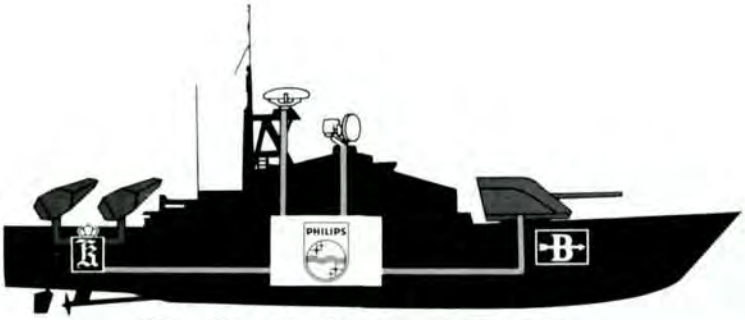
2. Department of Defence. SUPMAN 4 Australian Defence Force Ration Scale.
3. Australian Government Printer. National Health and Medical Research Council — Dietary Allowances for Use in Australia — 1979 Edition.
4. NHRMC. Grade 2 activity — Moderate activity requires reference energy allowance for sex, body mass and age plus 200 kj/10kg.

Rugby at RANC.

— Navy PR

Royal Swedish Navy has taken delivery of Hugin-class patrol boat no.14 in a series of 16.
Length: 36.4 m. Displacement: 150 tons. Speed: 30+ knots.
Complement: 18.



SCANFIRE

- Bofors all purpose gun 57 mm/ L 70.
- Kongsberg SSM Penguin Mk 2.
- Philips combat & weapon control system 9LV 200.

This powerful weapon package is proposed for the R.A.N. Freemantle class FPB.

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PHILIPS

SHIPS AND THE SEA

GREAT CIRCLE NAVIGATION

Great circles are circles, on a sphere, whose centre is the centre of the sphere. In navigation, courses and distance on arcs of great circles are determined by spherical trigonometry. The alternative to great circle navigation is along a rhumb line which cuts all meridians of longitude at the same angle. Rhumb line course and distance is determined by plane trigonometry. Meridians of longitude, and the equator, are great circles and rhumb lines. But on east and west courses in high latitudes, a considerable distance can be saved by following a great circle track in preference to rhumb lines. On a Mercator's projection, rhumb lines are straight but great circles curve towards the poles, the curve increasing with the latitude.

Sailing ships on the voyage from Europe to Australia kept to rhumb lines in the Atlantic, making the best progress permitted by the prevailing winds and the variables of Cancer until they picked up the north east trade winds, the permanent area of high pressure with anticyclonic circulation that persists between the Tropic of Cancer and the equator. Bowled along by this favourable and reliable wind, they sought the Doldrums at their narrowest, favouring the coast of South America for this purpose, until they picked up the south east trade winds for a close-hauled trek almost due south into the variables of Capricorn, a more significant area of variable winds in the South Atlantic which is known as the Horse Latitudes.

Progress was uncertain in this area until the westerlies of the high latitudes were encountered between 30° and 40° south latitude. From this position, advantage could be taken of great circle navigation, the curve to the south providing a shorter distance as well as taking advantage of the more persistent westerlies in higher latitudes. Commencing on a southeasterly course, which gradually changes to east as the vertex of the great circle is reached in about 60° latitude, the courses slowly came back to northeast as their destination came closer. But in 60° south latitude there were increased hazards from extreme cold, violent storms, and icebergs. Prudent shipmasters determined their maximum latitude, probably 50° to 55°, and followed a 'composite great circle': great circle to the maximum latitude, rhumb line along this latitude to the longitude where the original great circle intersected this latitude, then great circle again to the destination.

Ships bound for Port Phillip, whose longitude had not been accurately calculated, on the 5,000 mile trek across the Southern Ocean faced the reef-strewn southwestern shore off King Island if they were only a few miles east of their estimated longitude. A similar discrepancy westwards and their landfall would be out of range of Cape Otway lighthouse in the region where the *LOCH ARD* foundered. This was the cause of many disastrous ends to sailing ship voyages, not only in the approaches to Port Phillip but also off Kangaroo Island, the landfall for Adelaide bound ships. Homeward bound from Australia, well-found ships continued eastwards round Cape Horn. This great circle route went well into the Antarctic and a composite course was invariably followed. Cape Horn is in latitude 55° and when this was reached a rhumb line was followed due east to the landfall.

Determination of longitude by ships at sea had been a problem since world trading for merchant ships was made possible by the defeat of the Spanish Armada in 1588. The Portuguese navigator Diaz had found his way round the southern tip of Africa a hundred years earlier, naming the remarkable promontory at the south-western corner, Stormy Cape. It was renamed the Cape of Good Hope by the King of Portugal because it was the key to their long-sought sea route to the Orient. Vasco de Gama later followed the African coast to Malindi and then crossed the Indian Ocean to Calicut. Pope Alexander VI had decreed that Portugal explore eastwards and Spain westwards but Magellan, a Portuguese who had defected to Spain, discovered and named Magellan Straits in 1520 and then sailed westwards across the Pacific to the Spice Islands.

World trade by British and Dutch ships started in 1595 when four ships of the Dutch East Indian Company rounded the Cape of Good Hope to consolidate their East Indian empire. London merchants then petitioned Queen Elizabeth I to authorise a British expedition in a similar direction. The British East India Company sent four ships round the Cape in 1601, and the two East India Companies developed into a fleet of slow and cumbersome ships which required 15 to

The Author

Captain John Noble served his apprenticeship with the Bank Line before moving to New Zealand in 1936 to join the Union Steamship Company. He sailed with this Company in the south west Pacific, Australian and Asian waters until 1958, spending the last seven years in command. In 1958, he moved to Melbourne and became a Port Philip Sea Pilot from which he retired in 1979. He has written a number of books on maritime matters and now works part time as a nautical consultant.

18 months to complete a single voyage. Longitude was their most difficult navigational problem. Latitude could readily be determined by midday readings of the sun's altitude but differences in longitude between landfalls could not be determined. If a coastline could not be followed, a parallel of latitude was followed to the destination.

After rounding the Cape of Good Hope, the early East Indiamen followed the African coast to the eighth parallel of south latitude and maintained this to a landfall on the coast of Java. This was through the Doldrums where light winds and calms were responsible for the slow voyages. In 1611, Hendrik Brouwer, in a Dutch East Indiaman, varied this procedure by sailing eastwards along the parallel of the Cape of Good Hope for an estimated three thousand miles and then turned northwards for Java. Taking advantage of the westerlies of high latitudes he made the voyage in a record seven months.

Seven years later, Dirk Hartog, in the *EENDRACHT*, overshot the longitude on a similar voyage and made a landfall at what was later named Shark Bay by Dampier. Other Dutch navigators followed Brouwer's example, some of them coming to grief off West Australia's inhospitable coast, the most disastrous being the wreck of the *BATAVIA* on the Abrolhos Islands in 1629.

Although world trade developed during the ensuing 150 years, navigators still had no means of determining their longitude. A step in this direction was to ascertain the longitudes of known landfalls. Lieutenant James Cook, during his service in North America, prepared a paper on the deduction of longitude from simultaneous observations of an eclipse of the sun. By comparing observations of an eclipse in Newfoundland, with simultaneous observations taken at Greenwich Observatory, he had established the longitude of Newfoundland. With a transit of Venus across the sun predicted in 1769, the Royal Society successfully petitioned King George III to send an expedition to Tahiti to establish the longitude of what had become a focal point of Pacific exploration. Cook was well qualified to lead such an expedition. HMS *ENDEAVOUR* sailed from Plymouth on 26 August 1768 and sailed via Cape Horn to arrive at Tahiti on 11 April 1769. Point Venus was named because it was the site of Cook's observations which were completed by 13 July. Cook then sailed southwards and westwards and charted the coasts of New Zealand and Australia, to reach Batavia on 11 October 1770.

Sailing westwards, clocks are retarded by four minutes for each degree of longitude to keep the sun crossing the meridian at noon. At the 180th meridian, ship's time will therefore be 12 hours behind Greenwich time and a day should be skipped to bring ship's time 12 hours ahead of Greenwich in east longitude. But Cook continued to record his longitude as west from Greenwich after crossing the 180th meridian and did not skip a day. Consequently, the ship's date of arrival at Batavia was 10 October 1770.

During Cook's absence on this voyage, calculation of longitude by ships at sea was being improved by the introduction of chronometers. Reliable timepieces enabled ship's local time to be compared to Greenwich time, four minutes being equal to one degree of longitude. In Britain a 'Board of Longitude' had been established and a reward of £20,000 offered for a timepiece correct within 30 miles at the end of a six weeks' voyage.

John Harrison produced his first chronometer in 1728 which was similar to a grandfather clock. But a pendulum motion was useless at sea and in his second model, Harrison replaced the pendulum with a pair of straight bar balances whereby the motion of the ship accelerated the period of one balance in the same proportion as it retarded the other. Helical springs controlled the balances with brass and steel rods that altered the tension of the springs to compensate for weakening in high temperatures and strengthening in low temperatures. In his later models, these twin coupled balances were made circular, controlled by a spiral balance spring — the origin of bimetallic compensation subsequently adopted by all watchmakers.

Harrison's fourth chronometer was only five inches in diameter and proved reliable within the required limits, but another was demanded in return for the full reward of £20,000. This was completed by his son in 1770, and in 10 weeks at sea only accumulated an error of 4½ seconds. Cook took a duplicate on his second voyage in HMS *RESOLUTION* (1772-1775) which performed perfectly in all climates from the tropics to the Antarctic.

Chronometers thereafter became an essential navigation instrument, keeping Greenwich time for comparison to ship's time as calculated by astronomical observations to determine longitude with an accuracy determined by the chronometer's error. Time signals soon became a prominent feature of every established harbour. In port, shipmasters checked their instruments daily and determined their chronometer's Daily Rate. Multiplied by the number of days since the last check this produced a theoretical chronometer error on any given day.

Sailing ship voyages often exceeded 100 days and the slightest discrepancy in the Daily Rate could cause the ships to be several miles from their calculated longitude at the end of long voyages. Determination of longitude also in-

volved spherical trigonometry. Observation of the altitude of a celestial object with a simultaneous chronometer reading determined its 'Hour Angle', in time east or west of the meridian. From this is calculated the ship's mean time. The difference between ship's mean time and Greenwich mean time as determined by the chronometer reading being the longitude. Latitude must be used in calculating the Hour Angle and another feature that could be determined from the spherical triangle was the azimuth of the celestial body. A line at right angles to the azimuth is the 'position line'. If the latitude used in finding the Hour Angle was subsequently found to be incorrect, application of plane right-angled trigonometry corrects the longitude for the discrepancy in the latitude along the 'position line'.

Captain John Noble

SAILING VESSEL *POTOSI*

In a previous article for *Ships and the Sea*, I attempted to describe the largest sailing vessel in the world, the Flying 'P' Line ship *PRUESSEN*, a five masted fully rigged ship owned by Ferdinand Laeisz of Hamburg.

Prior to the emergence of *PRUESSEN*, both Laeisz and the French shipowners Ant Dom Bordes et Fils had built, owned and operated five masted barques, *FRANCE* and *POTOSI* respectively. Both traded on the Europe to Chile route engaged in the nitrate trade. Many other vessels traded to South American ports for guano and copper ore, but Laeisz and Bordes concentrated on nitrate.

Nitrate (saltpetre), in great demand in Europe, was not the easiest or most docile of cargoes. Mined in the vast salt lakes of Tarapaca, it was moved to the coast by donkey and rail and loaded at the ports of Iquique, Tocopilla, Mejillones Antofagusta and Caleta Buena. All were on the west coast of Chile. Subject to shrinkage when green, nitrate must be stowed dry and well dunnaged. It is highly flammable and when alight can be extinguished only with water in which nitrate has been dissolved. Not the nicest cargo to move, but one on which Laeisz and A.D. Bordes survived for many years.

A.D. Bordes et Fils were the first to build a five-master (*FRANCE*) in 1890. *POTOSI* was built by J.C. Teckleburg of Geestemunde and was launched and entered service in 1895. It was declared at the time by some ship-owners that Laeisz built her only to rival *FRANCE*, but time proved that *POTOSI* was by far the better vessel.

Launched in July 1895, *POTOSI* set off on her maiden voyage on the 26th of that month, arriving at Iquique Roads on 6th October, 66 days out. She had already beaten the maiden voyage of *FRANCE* by 8 days. Her best run was the two days 20/21 September when she logged 650 miles in 48 hours (13½ knots) and for one four-hour period during that time she averaged 16½ knots. Her return journey to Cuxhaven was slightly slower, 77 days, but it had proved that she was an all-rounder, sailing well on all points of the wind and able to log 16 knots in strong, fair winds.

The Field, a magazine of the early '30s, carried a graphic description of *POTOSI* as seen through the eyes of a junior officer in a steamer:

> 'At the time I was a junior officer in a 12 knot steamer bound for Hamburg. At the entrance to the English Channel we sighted a five masted barque standing in towards the Lizard to signal. It was the *POTOSI* from Iquique, also bound for Hamburg. The wind was from the south-west, freshening with driving main squalls . . .Steaming 12 knots all the way, we picked up our pilot at 2 pm on the second day after we had sighted the *POTOSI*. As we stood towards the mouth of the river our captain said "We sighted the *POTOSI* off the Lizard, pilot. There has been a fair wind ever since and she ought to be along tonight." The pilot smiled, a rather cynical smile, I thought. "The *POTOSI* passed in this morning, captain" he said.'

All told, *POTOSI* made 30 voyages under the German flag in the years 1895-1914. This may not seem many, but it should be remembered that one voyage was the round trip Europe-Chile-Europe, rounding The Horn twice per voyage. In summary, the voyages were:

- 10 voyages under the command of Captain Hilgendorf, July 1895 — November 1901;
- 2 voyages under the command of Captain Schluter, January 1902 — March 1903;
- 8 voyages under the command of Captain Nissen, April 1903 — January 1909. Captain Nissen went on to command *PRUESSEN*;
- 4 voyages under the command of Captain Fromke, April 1909 — January 1912;
- 2 voyages under Captain Niethe, March 1912 — August 1913; and
- 2 voyages, the second not completed, between October 1913 and September 1914.

With the coming of World War I, *POTOSI* took shelter in Valparaiso and remained there until the end of the war, still under Laeisz ownership and

still being maintained. Sold to Vinnen in 1918, she had to be surrendered to the French Government under the terms of the peace agreement. She remained idle until 1923 when she was bought by Gonzales Soffia and Company of Valparaiso and renamed *FLORA*.

As *FLORA*, she sailed in early 1924 for Hamburg with a cargo of nitrate, arriving there after 110 days, her worst run ever. The return trip started at Cardiff, Wales, after loading 5000 tons of patent fuel for Mejillones.

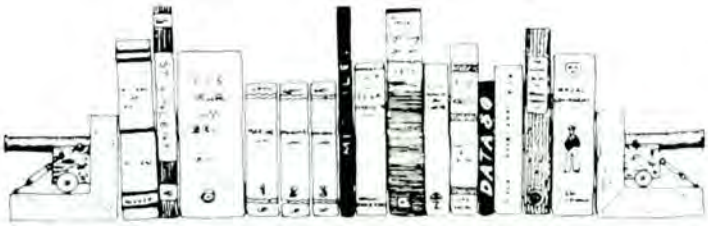
On 16 September 1925, *FLORA* was reported to be at sea but on fire, and on 18 September she anchored at Comodoro Rivadavia. The fire continued to burn despite all effort, and on 1 October two explosions rocked the barque. An attempt was made to beach her but this was unsuccessful and she drifted seawards. The end came shortly afterwards when, declared a hazard to navigation, *FLORA*, ex *POTOSI*, was sunk by gunfire by an Argentine cruiser.

The vital statistics of *POTOSI* were:

Builder	J.C. Tecklenburg, Geestemunde
Launched	July 1895
Type	steel 5 masted barque
Length	366ft 4in
Beam	49ft 8in
Tonnage	gross 4026
	dwt 6000
Sail area	approx 45,000 sq ft
Tallest mast	210 ft truck to main deck
Sails	24 square sails
	18 for and aft
Crew	46, Master, 3 officers, 2 bosuns, sailmaker, carpenter, blacksmith, cook, steward, 16 Able Seamen, 14 Ordinary Seamen and 3 Apprentices.

Robin Pennock

BOOK REVIEWS



ANTARCTICA OBSERVED. By A.G.E. Jones. Whitby (North Yorkshire), Caedmon of Whitby, 1982, 130pp., 6 maps, ill., £7.95.

Who really first sighted the Antarctic continent . . James Cook, Bill Smith, a Russian or an American? If that looks like the beginning of a weak joke, it isn't! This is a serious and valid historical question, which to date has been shrouded by mist, mirage and myth, and about which so many subjective and emotional claims have been made.

Who scientifically solved this great 'whodunnit' by objective and painstaking investigation and research? — A.G.E. Jones, in his recently released *Antarctica Observed*, which is the first book to look closely and impartially at all possible contenders for the honour of first sighting the last continent.

Who best to conduct the detailed examination than this well known maritime and polar historian? For over fifty years he has studied the subject and written numerous papers and articles, particularly on Arctic and Antarctic voyages. Surprisingly, this is his first book, but then one must appreciate that A.G.E. Jones does not write anything without a full analysis of all available original sources — ships' logs, letters and charts etc, not for him the quick and convenient story based on a few printed works. Even his long scholarship in this field is not adequate for him, except to realize what is not known about the subject and how it should be studied. Track charts of the likely voyages are meticulously reconstructed from primary logbooks and checked against other journals and records, together with a study of the weather conditions and visibility prevailing at the crucial times of sightings.

This major maritime investigation makes fascinating reading. Jones has stripped away the myths and irrelevancies of many previous works and produced the facts of the matter in his concise, interesting and inimitable style. He covers the precursors of Captain Cook, as well as the great navigator's voyages. Tracks of significant expeditions are produced, together with details of their ships and a study of their navigational instructions and methods.

Well, who did discover Antarctica? The four finalists in the field were James Cook (2nd voyage, 1774), Thaddeus Bellingshausen (1820), William Smith (aided by Edward Bransfield, 1820), and Nathaniel Palmer of New England, later in the same year. It would spoil the book to give Jones' precise conclusions. Cook was over 45 years ahead of the others, circumnavigating the entire continent and penetrating to latitude 71 degrees 10 minutes south. Bellingshausen saw the edge of the continental ice shelf, but is that Antarctica? Only three days later, Smith, on the other side of the continent, sighted the actual rocks and peaks of Trinity Land; and 20 year old Nat Palmer saw the same area, but some ten months later.

Without belittling the great discoveries of the official naval expeditions of Cook, Bellingshausen, Wilkes and others — particularly the early navigators, it is true to state that much of the subsequent exploration of the Pacific and Southern Oceans was achieved by merchant, whaler and sealer captains, mainly from Britain and America. Many had previous naval training and experience but made their discoveries in commercial vessels. The first sighting of the world's last continent followed this pattern, but it was a combination of merchant captain and naval navigator. In the chartered brig *WILLIAMS*, Edward Bransfield, Master RN, led a small naval detachment of surveyors and observers.

I have said too much. Read this fine work of maritime historical detectiveship yourself. The only slight flaws that I can find are a few apparently inescapable minor mistakes and misprints, more annoying to the author than the reader, (or perhaps A.G.E. Jones, with his puckish sense of humour, has left a few cracks to keep the many 'experts' on their toes and provide the pedants with something to grasp). However, these are of no moment compared with the mountain of misconceptions and fables that the book demolishes.

Now that Jones has cleared up the first sighting of Antarctica, and I believe that his work will be acknowledged as the authority on the subject, let the debate be renewed in the same objective way on who discovered the second last continent.

Ian Nicholson

Nobody asked me, but...

THE AGES OF A NAVAL OFFICER

The first age of a naval officer starts when he has finished his early training and joins a ship for the first time. He believes that he has been taught everything there is to know — but is not sure that he remembers it. He is looking forward to plenty of sea time to put his knowledge to the test, but is apprehensive of his ability to do so. He has just bought his first car. Because of his financial situation it is a 'bomb', so he has to become a mechanic to keep it on the road. For some reason, he has completely lost the ability to look after his appearance. He turns up to Colours looking like a scran bag — and his cabin is one! Consequently, he spends a lot of time on stoppage of leave. His sports gear takes pride of place in his kit. He actually believes the Executive Officer, when told that his duty at cocktail parties is to speak to all the guests — except single ladies! At this stage he is sure that a commander is either God or speaks directly to God.

The second age is after a naval officer has had a couple of jobs at sea. He now realises that he was not taught everything during his training, but knows that after his now vast experience there could not be any more that he could learn. He has moved on to his second car, which is flashy and was bought with a view to many successful seductions. As part of his campaign to know the opposite sex, he has acquired a splendid partial civilian wardrobe — by generous use of his uniform maintenance allowance! Consequently he is still wearing the kit he was originally issued with, and he hopes that he does not get too many officer of the guard duties. His sports gear is still useful, but he begrudges the time playing for ship's teams when he could be meeting that little blonde as she knocks off work. He now has his leave stopped because of his wine bill or because he stole the XO's 'bird' at the last cocktail party. By now he realised that even people so close to God as commanders are occasionally fallible.

The third age arrives when the officer has had enough sea time and is ready to settle down ashore. He is emphatic that younger officers do not know half of it all yet — but that he is now simply re-inventing the wheel each time he goes to sea. He is now married, or contemplating marriage, so still has this second car — which by now has lost its sex appeal. Because of an expanding waist-line, he has been forced to acquire some new uniforms, so feels quite self righteous — and wonders why younger officers are not smart any more! His sports gear has been replaced by golf shoes. The behaviour of young officers annoys him and he repeatedly expounds that they would benefit from more stoppage of leave — particularly when they 'white ant' him at cocktail parties. he wonders: however could any of that last lot have been selected for promotion to commander?

When he realises that he will never know it all, but wishes he could get back to sea and try to do so, he has reached the next age of a naval officer. As a family man, he has now moved into the two car field. While his wife drives the station waggon, he opts for a car discarded by a sub-lieutenant. He hopes that people will not notice his economising efforts of replacing only one of the stripes on his best uniform. He dusts off his sports gear for his new fitness programme, but hopes that nobody asks him to make a comeback for the ship's team. From wide experience, he has developed perfect timing at cocktail parties. Oozing charm, he is able to move in at the best moment and race off that gorgeous blonde for whom the young officers have been campaigning all night. He stops the leave of those who get in before him! He cannot believe that any of those young 'pups' could possibly be selected for promotion — for by now, he is a Commander.

V. Littlewood

CONFIDENTIAL REPORTS

With the advent of the Freedom of Information Act, reporting officers may have to be more careful in future about what they write in confidence regarding the efficiency or otherwise of the people they command. Although this may be good for Truth, I suspect it will not do much for Humour, and it will certainly spell the demise of the pithy comment which says so much in so little. There have been lists of allegedly verbatim extracts from confidential reports in the past, but readers may like to see some I have not come across before. Use them in future at your own risk!

Is sometimes prone to take advice but has made great strides to overcome this fault.

His 'country-boy come to town' approach, combined with an ever present name-brand cigar and 'buck toothed grin', has made him a mainstay for morale within the organization.

Is reluctant to having his opinion changed.

This officer can develop into a good officer; however, I prefer he continue this development elsewhere.

Repeatedly has with muddleheaded abandon, impetuously entangled himself beyond his authority, knowledge or experience, into untenable positions then vociferously wails for extrication.

His drinking habits are below minimum.

Can express a sentence in two paragraphs any time.

A quiet reticent, neat appearing officer. Industrious, tenacious, diffident, careful and neat. I do not wish to have this officer as a member of my command at any time.

He failed to demonstrate any oustanding weaknesses.

Can be depended on for a day's work each day. No more, no less.

He is frank and offensive officer.

When he applies himself he is hard to beat and when his is not interested it is best to give the job to another officer.

He accomplishes tasks rapidly with a great deal of commotion.

He can't make a decision but can offer excellent suggestions and allow his subordinates to take their choice.

When he joined this organization he was somewhat of an old woman. Since he has been with us he has aged considerably.

His only fault is his overfondness for drinking beer; however, his duty never interferes in this.

He does not deserve command duty and has not effected his present duties as well as could be expected. I think it is time he retired.

His approach to superiors is uninhibited and comradely, and I have the continuous feeling that were it not for my 'out' basket, he would brief me from a perch on the edge of my desk.

His greatest virtue is a desire to maintain high standards which combined with certain failings cause him to be overbearing, rash, and at times impossible.

I have never in my life seen an officer who can work so hard and get less done.

Has narrow set eyes and appears to be at peace with himself.

G. Cutts

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Did your last Journal turn up late, or come via another ship or establishment? If it did, then perhaps you have moved and forgotten to tell us. Similarly, if the rank was wrong then perhaps you may have forgotten to amend that too.

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HMS INDOMITABLE

Photo: A. &. J. Pavia — *Supplied by J. Mortimer*

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Journal binders are available (as illustrated) from the Treasurer, price $6.00 each including postage. Coloured blue, with gold lettering and ANI crest, each binder will hold 12 copies of the journal (3 years' supply) by means of a metal rod which is inserted simply through the middle page of the journal and held firmly at top and bottom of the binder. Plastic envelopes on the bottom of the spine enable volume numbers or years to be inserted.

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The Council of The Australian Naval Institute advises that cuff-links and mounted crests featuring the badge of the Institute are now available for purchase by Members.

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