JOURNAL OF THE AUSTRALIAN NAVAL INSTITUTE

VOLUME 6 MAY 1980 NUMBER 2

AUSTRALIAN NAVAL INSTITUTE

1. The Australian Naval Institute has been formed and 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.

c. to publish a journal.

2. The Institute is self supporting and non-profit making. The aim is to encourage freedom of 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 —

a. Regular members — Members of the Permanent Naval Forces of Australia.

b. Associate Members — (1) Members of the Reserve Naval Forces of Australia

(2) Members of the Australian Military Forces and the Royal Australian Air Force both permanent and reserve.

(3) Ex-members of the Australian Defence Forces, both permanent and reserve components, provided that they have been honourably discharged from that force.

(4) Other persons having and professing a special interest in naval and maritime affairs.

c. Honorary Members — A person who has made a distinguished contribution to the Naval or maritime profession or who has rendered distinguished service to the Institute may be elected by the Council to Honorary Membership.

4. Joining fee for Regular and Associate members is **$5**. Annual Subscription for both is **$10**.

5. Inquiries and application for membership should be directed to:-

The Secretary,
Australian Naval Institute,
P.O. Box 18,
DEAKIN, A.C.T. 2600

CONTRIBUTIONS

As the Australian Naval Institute exists for the promotion and advancement of knowledge relating to the Naval and maritime profession, all members are strongly encouraged to submit articles for publication. Only in this way will our aims be achieved.

DISCLAIMER

In writing for the Institute it must be borne in mind that the views expressed are those of the author and not necessarily those of the Department of Defence, the Chief of Naval Staff or the Institute.

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JOURNAL OF THE AUSTRALIAN NAVAL INSTITUTE (INC)

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The front cover shows the launching of the RAN's new amphibious heavy lift ship, HMAS *TOBRUK*, at Carrington's shipyard, Tomago, NSW on 1 March, 1980. *TOBRUK* will commission later this year.

— Defence Public Relations photograph

CHAPTER NEWS

CANBERRA CHAPTER

On 18 April, members and guests in the Canberra Chapter were entertained by Mr Michael Melliar-Phelps (Associate Member ANI) who journeyed from Sydney to deliver his provocative address entitled: 'Soviet Mercantile Offensive'.

The Soviet merchant fleet is aggressively and unashamedly using Western capitalist tactics to capture trade in all parts of the world, at a time when high overheads and shrinking markets are causing the collapse of shipping companies as we know them. A sobering feature of this vast Soviet merchant fleet is that all but the 'specials' are built outside the Soviet Union, despite the reality of the largest shipbuilding capacity in the world. As a consequence of this 'eco-strategy', it would appear necessary for the RAN to reassess its traditional role of 'protecting the sea lanes', or alternatively the government reviewing its policy regarding 'home-owned' merchant ships, before the day arrives when there is no allied merchant shipping left to protect. Mike's talent as a marine photographer and raconteur will be borne out in a later transcript planned to be published in the Institute Journal.

Members may also be interested in his unique book, to be published by Rigby's later this year, entitled '*A Century of Sydney Shipping*', and featuring over 200 rare and beautiful photographs covering 120 years of shipping in Sydney Harbour.

Looking to coming events, the Institute will be hosting an address by C in C Fleet, Admiral Sir James Eberle, at the Academy of Science at 1930 on Thursday 24 July (see page 5 of this Journal). Members could assist the planning of this function by indicating to the Secretary as soon as possible their likely attendance.

Correspondence

SWORDS (I)

Dear Sir,

'*Master Ned*' asked after the origins of the manner of the wearing of Naval swords. I passed the question to an Unimpeachable Authority and reproduce his reply below:

> 'Having consulted the Naval Historical Section and the Maritime Museum, neither can produce any collateral for the various myths connected with the origins of the long slings and thus the need for Naval Officers to carry their swords in their left hand.
>
> However, I am informed that there was no standard pattern of Naval sword until 1805. Before that officers wore whatever type of sword took their fancy or suited their pocket.
>
> The shoulder sword belt was worn until 1832, when William IV directed that it should be replaced by a waist belt. Since then the length of the slings has been changed on several occasions.
>
> None of the authorities I have approached can produce any rationale for that directive, but that is not to say that none exists. (It would have been late in the day for it to have been a censure for the mutinies of 1793.)'

This at least would seem to disprove some of the possible explanations put forward by '*Master Ned*'; it makes one suspect that the others are equally ill-founded. I think the best answer is the usual one given in response to questions of naval lore — it's traditional.

Yours sincerely,

D. J. Campbell,
Commander, RAN

Government House,
Canberra. 2600.

WANTED

Dear Sir,

I would like to ask through the Journal's 'Correspondence' column for assistance in obtaining back issues of the Volume 1 Number 1 and Volume 3 Number 1 Journals.

Yours faithfully,

GARRY CANNING
ABETW

Electrical Mess
HMAS HOBART
Care G.P.O. SYDNEY 2890

SWORDS (II)

Dear Sir,

I had hoped that my first contribution to the Journal would have related to a serious maritime subject. However, being an old gunnery worthy, I must pontificate in reply to MASTER NED's search for knowledge on the wearing of naval officers' swords ('Nobody asked me, but ...', Page 43, February, 1980 Journal).

The origin of the custom of wearing one's sword swung low lay in the whims of fashion. In the first half of the eighteenth century, the cutaway coat in various forms became popular, although not standard. A waistcoat was necessary with this style and the sword belt was worn under it, which in turn necessitated the sword being slung so that the hilt was below the waistcoat. To ensure that the sword hung with a slightly forward angle, different length slings were used clipped to rings on the same side of the scabbard.

During the next hundred years, various changes in sword wearing styles occurred and it was not until 1856 that an Admiralty regulation was issued determining the present length of slings and therefore the method of wearing and carrying a sword.

Nowhere can I find reference to mutinies or decrees of monarchs, except in the legend mentioned by MASTER NED.

Undoubtedly the correct method of carrying one's sword nowadays is clumsy and awkward and rarely used by senior officers, or junior officers who think the gunnery officer is not watching.

The alternatives to carrying the sword in this manner would appear to be either to wear the belt outside the jacket and support the sword in a frog or to indulge in the practice required of colour officers and greatcoat-wearers, namely having a slit in the left-hand side of the jacket.

For the benefit of readers who would care to learn more on the background history of naval officers' swords and dirks, I recommend the following three books published by Her Majesty's Stationery Office, London, in 1962, 1955 and 1970 respectively.

- for those with only five minutes to spare —

  NAVAL SWORDS AND FIREARMS by COMMANDER W. E. MAY RN and A. N. KENNARD.

- for those with thirty minutes to spare —
  THE NAVAL OFFICERS SWORD by CAPTAIN H. T. A. BOSANQUET RN.

- for those with several days to browse —
  SWORDS AND SEA SERVICE volumes I and II by COMMANDER W. E. MAY RN and P. G. W. ANNIS.

All three books are held in the reference section of the State Public Library of New South Wales and are profusely illustrated.

'A GUNNER'

SHIPLOVERS' SOCIETY OF VICTORIA

Dear Sir,

Membership of this Society is open to men and women who have a genuine interest in ships, the sea and all things maritime. Many of the members are from interstate and overseas, as well as from Victoria. There are members in England, Norway, Sweden, Holland, Canada and U.S.A.

Monthly "musters" or meetings, are held at the theatrette of the State Public Library, La Trobe Street, Melbourne, at 7.45 on the second Wednesday of every month (with the exception of January.). These meetings feature lectures, usually illustrated, of topics ranging from personal experiences to historical and current maritime subjects. Films of maritime interest are occasionally shown. Visitors are welcome at all musters.

The subscriptions are for

Metropolitan members,	$9.00
Country, interstate and overseas members	$7.00

All financial members receive a copy of *The Dog Watch* and four quarterly issues of the News Letter; these are included in the subscription.

For further information apply to the address below:

Yours faithfully,

The Hon. Secretary
Shiplovers' Society of Victoria

P.O. Box 1169K
G.P.O. Melbourne, 3001

ELIGIBILITY FOR REGULAR MEMBERSHIP

Sir,

I write with regards to correspondence in your columns concerning full membership of the Institute for members of the RANR.

The Institute's founding fathers' desire to ensure that fresh minds lead the Institute is both understood and supported. It is appreciated that retired Reserve Officers are as likely as retired PNF Officers to inhibit the availability of fresh minds to lead the Institute.

Therefore, it is suggested that Active Reservists defined as those in Lists 1, 2, 3, 4, 5, 6 and 9 be admitted to full membership of the Institute. Those on other lists, without regular training commitments, could become Associate members.

Yours faithfully,

A. W. GRAZEBROOK
Commander RANR

2 Lucifer Street,
NORTH BALWYN VIC 3104

RAN ANTARCTIC SHIPS

Dear Sir,

It is presumptuous of me, and I hesitate in doing so (not being a member of your Institute) to criticise an Article in your Volume 6 Number 1 of February 1980. But its shortcomings were brought to my attention by one of your members who requested that I comment on them.

In his article *"R.A.N. Antarctic Ships"*, Tom Strasser — perhaps because of lack of space — brushed off in a perfunctory way the achievements of *"WYATT EARP"* in the first post war efforts to revive Australian interest (and sovereignty?) in the territory we claim in Antarctica. Even the photographs used were those of the ship as she was in Lincoln Ellsworth's time. Photographs of her after her reconstruction, and wearing the White Ensign, are readily available through the Navy Office Historical Branch.

But is was unfortunate to speak of *WYATT EARP*, after leaving Melbourne on 8 February 1948 "... reaching her *objective, Macquarie Island ... on 20 March ...*"!! Six weeks to reach Macquarie Island! And for what reason? Even to the uninformed reader, such a statement doesn't add up with the earlier part of the article which said that L.S.T. 3501 was to establish a reserve fuel base for *WYATT EARP* on Kerguelen Island — which in fact she did.

In order to put straight the historical record I enclose a copy of my article on *WYATT EARP's* voyage from the Naval Historical Review, Vol. 2, No. 2 of December 1978.

You have my permission to use any part or all of the article, and I have ascertained that the Naval Historical Society similarly foregoes its copyright.

Yours faithfully,

W. F. COOK,
Captain R.A.N. (Retired)

2 Alton Street,
WOOLLAHRA 2025

I certainly apologise to Captain Cook for the apparent underrating of the Antarctic operations of HMAS WYATT EARP, the ship in which he served as First Lieutenant during the period in 1947-1948 when she was assigned the task '... to make a reconnaissance cruise of certain parts of the Antarctic coast and effect landings where possible.' The 'Ships and the Sea' article in the last Journal over summarised the WYATT EARP's story and omitted mention of her important activities in Antarctica in February-March 1948, before arriving at Macquarie Island on 20th March 1948.

The full saga of WYATT EARP as an RAN Antarctic ship is given in the article by Captain Cook mentioned in his letter. Despite Captain Cook's kind offer, the article will not be used in the ANI Journal since it is not editorial policy to republish articles from publications which could be assumed to be available to ANI members. The article is strongly recommended to members as a thoroughly entertaining account of one of the more unusual exploits by an RAN ship. Should any member have difficulty in locating a copy, I would be pleased to provide one.

A photograph of WYATT EARP under the White Ensign appears below.

The Editor

HMAS *WYATT EARP* alongside in Williamstown Dockyard December 1947.

— RAN official photograph

FROM THE EDITOR

These editorial notes commence with news from the Council of the Australian Naval Institute. Planning is proceeding for the next Institute Seminar, SEAPOWER 81, to be held in Canberra in April 1981. Further details, including firm dates, should be available for the next Journal.

Recently the Council also agreed to the establishment of a Financial Sub-Committee to have oversight of the Institute's annual budget and to make recommendations to Council regarding joining fees, annual subscription rates, etc. This prompts a reminder to members that the President's Report for 1978/79 foreshadowed possible increases in the annual subscription. Subject to the deliberations of the Financial Sub-Committee, increased subscriptions may be necessary for 1981/82.

With regard to annual subscriptions, persons contemplating membership may be interested to know that under By-Law 2.1a of the Institute, members who join in the last quarter of the financial year of the Institute have one half of their paid annual subscription credited against their annual subscription due for the following financial year.

Several RAN officers had the opportunity earlier this year of visiting the Antarctic in a variety of vessels, including US Coastguard ice-breakers and re-supply ships for the Australian Antarctic stations. This journal includes an article by one of these officers, Lieutenant Frank Doe, who relates some of his impressions after being onboard the US Coastguard ice-breakers, *POLAR SEA* and *NORTHWIND*, in Antarctica.

We also welcome to the pages of the ANI Journal the well-known naval architect and Australian naval historian, Mr Alan Payne, who has written a major article in this journal dealing with the Canadian *IROQUOIS* Class destroyers. Alan Payne's work was recently honoured by a request from Churchill College, Cambridge University, for copies of all his works for inclusion in the naval archives of that university.

The article on the *IROQUOIS* Class is in some ways a partner to the *KORTENAER* Class article in the ANI Journal of November last. Both describe ships designed and built in countries of the same order and size, in terms of population, as Australia but, as Alan Payne has reminded me, Australia has yet to build a major warship to a domestically developed design. (On the subject of destroyers, the second part of the article by Mr. Ken Hope on destroyer design considerations was not ready for publication in this journal but hopefully will be available for the next issue.)

Another major article in this journal deals with the possibility of a developing relationship between the RAN and the Japanese Maritime Self-Defence Force. The author of this article, Lieutenant Kerry Clancy, speaks with authority, having lived in Japan for over two years.

The other two major articles concern training topics — Commander Haydn Daw discusses the application of training systems theory to the RAN Staff College whilst 'Master Ned' provides an up-date on his views regarding officer training in the RAN. Finally there is a good selection of book reviews in this journal, as well as other minor articles on a wide range of topics. I especially draw attention to 'Shiphandling Corner' where the present Commanding Officer of HMAS *JERVIS BAY* talks of 'Shiphandling with a Bow-Thruster'.

• • •

ADMIRAL SIR JAMES EBERLE, KCB

Admiral Sir James Eberle, Commander-in-Chief Fleet of the Royal Navy, will visit Australia later this year. He has agreed to address the Australian Naval Institute at a meeting to be held at the Academy of Science on Thursday, 24 July commencing at 1930.

Admiral Eberle was born in Bristol in May, 1927, and educated at Clifton College, entering Britannia Royal Naval College, Dartmouth, as a cadet in 1940. He saw World War Two service in Motor Torpedo Boats and was Gunnery Officer in the cruiser HMS *BELFAST* during the Korean War. As Gunnery Officer in HMS *GIRDLENESS*, 1957-59, he was involved in the early stages of the development of naval guided weapons.

Promoted to Commander in 1959, he took command of the 100th Minesweeping Squadron, and after an appointment in the Gunnery division of the Admiralty he became Executive Officer of the Aircraft Carrier HMS *EAGLE*. Promoted to Captain while at the Joint Services Staff College (now the National Defence College), he became Deputy Director of Naval Recruiting, (responsible primarily for officers' entry, and then, after studying at the NATO Defence College,

Rome, he went back to sea in command of the Assault Ship HMS *INTREPID*. In 1970 he undertook a Defence Fellowship at University College, Oxford, and on promotion to Rear Admiral in 1972 he became Assistant Chief of Fleet support. Two years later he became Flag Officer Sea Training, and in 1975 Flag Officer Carriers and Amphibious Ships. In 1977 he was promoted Vice Admiral and became Chief of Fleet Support and a member of the Admiralty Board.

Knighted in the 1979 New Year's Honours List, he took up his duties as Commander-in-Chief Fleet at his Northwood headquarters in May, 1979.

Admiral Eberle is married with a son, who is in the Royal Navy, and two daughters. A Freeman of the City of Bristol, his hobbies include hunting (he is Joint Master of the Britannia Beagles), tennis, (having played for the Navy, he is now Vice President of the Royal Naval Lawn Tennis Association), hockey and squash (he is President of the Royal Naval Squash Rackets Association). His home is in Holne, South Devon.

The Australian Naval Institute looks forward to welcoming Admiral Eberle to Australia.

STRATEGIC AND DEFENCE STUDIES CENTRE

The Strategic and Defence Studies Centre of the Research School of Pacific Studies at the Australian National University will hold an International Conference in Canberra on 21-24 July 1980 on "The Development of Strategic Thinking in the 1970s : Prospects for the 1980s'. The registration fee is $25.

The conference will consider the notable changes during the past decade in great power balances, in the role of force in situations short of war and in the conduct of warfare itself. This will provide the background against which to look forward into the 1980s for the major problems likely to confront us during the coming decade.

Registration details may be obtained from:

The Conference Secretary,
Strategic and Defence Studies Centre,
Australian National University,
P.O. Box 4,
CANBERRA ACT 2600

THE AUSTRALIAN ASSOCIATION FOR MARITIME HISTORY

As its name indicates, the Australian Association for Maritime History is a national organisation, although its field of interest is international. The Association was formed in May 1978 and has as its main objective to encourage the study, discussion, writing and publication of maritime history, and to publish a journal and a newsletter. It is hoped that the journal, *THE GREAT CIRCLE*, will rank with the world's leading English-language maritime history journals, *The Mariner's Mirror* and *The American Neptune*. The President of the Association is Associate Professor John Bach of the University of Newcastle. The journal editor is Dr Frank Broeze of the Department of History, University of Western Australia. *The Great Circle* has been very well received both in academic and 'shiplovers' circles, and contains papers of an academic nature, including book reviews and reports of maritime conferences and seminars. The *Newsletter* is produced to give news, notices and short reviews of books of a general rather than an academic nature, and notes and queries — this latter section has already proved very popular.

Membership of the Association is open to all who have an interest in maritime history and allied subjects. The annual subscription, which entitles the member to two issues of the journal and four Newsletters a year, is $15 for individuals and $25 for 'corporate' members. Further details are available from the Honorary Secretary, Vaughan Evans, c/- Box 4149 G.P.O., Sydney, New South Wales, 2001.

Members of the Australian Naval Institute in Sydney will be most welcome as guests of the Australian Association for Maritime History at any of their meetings (arranged in conjunction with the Royal Australian Historical Society) held at 133 Macquarie Street, Sydney at 6.15 p.m. as follows:

Jul. 8	Rod Glassford	The story of the JAMES CRAIG
Oct. 14	Michael Pearson	India's mercantile and seafaring communities

For meetings of the Association in Perth, please contact Dr F. Broeze at the Department of History, University of Western Australia.

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TRAINING THE GENERAL LIST OFFICER — THREE YEARS ON

(Not to mentionSL, WRANOs, Direct Entry and a Cast of Thousands)

By 'Master Ned'

'I sometimes think that half the Navy spends its time training and the other half spends its time criticizing training.'

Lieutenant Commander (later Captain) Robert Bollinger Badger, DSC, RN.

Editor's Note — The first article by 'Master Ned', 'Training the General List Officer, Some Problems and Possibilities' was published in the November 1976 ANI Journal.

Introduction

The intention of this article, as in those which have already appeared in this journal, is to discuss developments in officer training in various areas so as to stimulate informed discussion. It is perhaps unfortunate that training is the one subject upon which each officer feels qualified to comment without having bothered to keep abreast of the multitude of changes which have been made since his or her time as a victim of the training system. Officer training is something which *has* to be got right and must be constantly watched to ensure that the very best personnel possible are being produced. To let matters slip is to risk setting a time bomb which will explode at the worst possible moment for the Navy and the Nation.

Junior Entry

The decision has been promulgated that the 1980 Junior Entry to the Royal Australian Naval College (RANC) is to be the last. Such a promise has been made a number of times before, but it seems that we will finally be seeing the end of the last pre-matriculation officer entry in the Western world. The decision will mean the eventual easing of the present chronic accommodation problem at the College to the extent of over sixty billets. It is difficult to escape the impression, in fact, that this is the major reason for the decision.

Yet it must be admitted that the maintenance of a Junior Entry would not be in keeping with the spirit of the new College. The 'British Public School' discipline which marked the RANC from its very inception and is still to a certain extent maintained at Jervis Bay does not sit well with the average 18 year old and still less with the far more mature and experienced Direct Entry. The quite proper attempts to ensure that this system does not extend to the Direct Entries has resulted in a division of the College completely out of keeping with the intention behind the amalgamation of the officer training conducted at *CERBERUS* and *RANC* into the one establishment.

Topmen

The impending demise of the Junior Entry makes almost impossible of realization one very desirable alteration in the Navy's training system. This concerns the 'Topman' scheme, presently located at HMAS *LEEUWIN*. Under this system, suitable Junior Recruits, as well as Apprentices from HMAS *NIRIMBA*, are selected as Officer Candidates to undertake

matriculation studies with a view to becoming General List or Supplementary List Officers. In this author's view, it would have been very desirable to move these officer candidates directly across to the Naval College on selection, rather than retaining them at *LEEUWIN* to gain their matriculation.

In the first place, this would have constituted a further step in the concentration of officer training which began with the removal of the Supplementary List to Jervis Bay. Proper bridging courses, which admittedly would have taken some skill to devise, could well have ensured that the Topmen and Junior Entry could have shared their syllabus and lecturers, and have resulted in a reduction in the number of instructors necessary to conduct the two courses.

Second, one of the major reasons why the Topmen were kept away from the Naval College was that an officer candidate's results in the matriculation examination decided whether he was to be General or Supplementary List. It was sensibly considered undesirable to allow an officer candidate to develop a strong attachment to one List, say, by locating him at the Naval College and then casting him out to *CERBERUS*, or vice versa. With the location of the Supplementary List Course at RANC this no longer applies.

Third, it would be far better for the officer candidates if a clean break could be made with *LEEUWIN* as early as possible. There may be some who would argue that the lower deck experience of ex-Topmen will stand them in good stead in the years to come. It does not appear, however, that once officers are out in the Fleet there is any discernible 'savoir faire' possessed by the ex-Topmen which cannot be found in the average GL or SL. It is perhaps the early inculcation of officer-like values in the proper environment which is most important and this must be very difficult to achieve at *LEEUWIN*. The Topman scheme is an admirable and indeed essential device; every seaman entry to the RAN must be carefully screened to see if any suitable material exists, but it is best to remove such material as soon as possible — best for all sides.

The qualities and behaviour required from a junior officer are not the same as those required from a junior sailor. One of the most difficult problems which a junior officer has to face is that of getting his relations with junior sailors correct, avoiding the 'Scylla' of over-familiarity and the 'Charybdis' of pomposity. This has always been a particular source of trouble for Topmen. The limbo of 'O/C-dom' is not a satisfactory position and it would be — would have been — far better if the Topmen could be brought to the Naval College and immediately gazetted as Cadet-Midshipmen, just as WRAN Officer Cadets have become Midshipmen initially 'de facto' and now 'de jure'.

Direct Entries

With the abolition of Junior Entry it should be possible to effect one relatively minor — but very necessary — change in the present routine of the Naval College. Direct Entry officers are now accommodated in the wardroom of HMAS *CRESWELL*. It would, I believe, be a great advance if they were messed and accommodated in the RANC proper. By doing this, they would most probably imbibe far more Service knowledge far faster than at present and would be able to fit into the organization in a far more satisfactory fashion. It might be noted that Britannia Royal Naval College Dartmouth runs this system in what appears to be a thoroughly successful manner.

Divisional Officers/Divisional Midshipmen

To ensure thorough success of the movement of the Direct Entries in such a way into the RANC and to remove a number of other problems a two-pronged change is suggested. The Divisional Midshipman (the new title for what was a Cadet Captain) system should be abolished. The first reason for this is that the present Divisional Midshipmen are Creswell Course students of an average age of 19. It is thus understandably difficult for Direct Entry and the older Supplementary List officers to submit to control by officers much their junior in age — as well as general experience.

The second reason is that the Divisional Midshipman system teaches the good leaders to be better but does nothing for those who are not so able. I am sure every reader who attended RANC will be well aware how easy it has always been to 'stand back and watch' while others are doing the leading. Unlike the 'real' Navy, the Naval College should not be seeking to put the best leaders in positions of responsibility — the Selection Board should already have weeded out those who will never be able to lead — but should be ensuring that all officers are trained as well as possible to be leaders.

It is proposed as a solution to these difficulties that young unmarried Lieutenants be appointed to live and mess in the Naval College with a responsibility for each division. Some will say that the officer will become only a glorified Cadet-Captain, but properly handled this should not happen. The Divisional Officer's brief will be to *watch* and to allocate responsibility and authority to those most in need. He will deal with the Direct Entries himself and ensure that no difficulties arise in that direction. It is suggested that six or seven young officers be appointed, or else a lesser number supplement-

ed by senior Lieutenants/junior Lieutenant Commanders married or living out who would act as senior Divisional Officers.

Creswell Course

With their Degree Stream contemporaries outpacing them on the academic side, and the Supplementary List getting to sea far earlier, those officers undertaking the Creswell Course are not in a happy position. The bulk of these General List officers actually wish to get to sea and on the job as soon as possible. It would be far better for the Navy and for them if they could do so. A short tertiary course can be instituted at a higher level for GL, non-degree officers (and possibly SL as well) but it is difficult to see what purpose the lengthy Creswell Course serves. It has all the defects of each of the other two major streams and few of their advantages.

WRANS

The introduction of WRAN officer training to the Naval College has been yet another change which has done nothing but good. What was in latter days described as the 'moral tone' has improved considerably. Behaviour among the officers under training is not so loutish. The phrase 'Young Gentlemen' appears to have somewhat more of an element of verisimilitude than before.

What is more, it did not take long for the WRAN officers to start topping the courses — and this has shaken up some of the more complacent male chauvinist Midshipmen no end! There has only been one unfortunate note. The first WRAN entry undertook all the professional courses which the parallel Supplementary List entry did, with one important exception. The WRANS did not embark in *JERVIS BAY* for the training cruise. Some 'old salts' may inveigh about the prospect of women at sea, but if the experiment cannot be tried in *JERVIS BAY*, with her multitude of bathrooms and cabins, it can be tried nowhere. The WRANS themselves were particularly disappointed, most especially since it meant that their efforts in the professional courses (notably navigation) went for naught. There seems to be no good reason why the WRANS could not have gone, other than they might have set a 'dangerous precedent'. Let us hope that future classes will not be so restricted.

Time Gained

The abolition of time gained has come as a mixed blessing. Certainly it was clear to see that the major reason for its removal was to prevent officers acquiring too much seniority before they had the experience to carry it, but it does appear obvious now that many officers under training are not trying so hard as before.

People need concrete rewards. Even if an officer did not have his career in mind, there was the financial element to time gained. Now one can too easily swan through and 'strive for mediocrity'. Perhaps a better solution would be to reduce the amount of 'time' which can be gained from sixteen months to eight and allot the remainder to more advanced courses. It would be interesting to see the improvement in the A/PWO results if three months seniority (or a cash bonus) rode on the outcome of the course.

Another fault which would have to be dealt with is the arbitrary nature of the old system. Let us assume, for example, that we have two officers sitting the Fleet Board as stage IIs. The first attains a mark of 81% — First Class Pass, four months time gained. The second attains a mark of 79% — Second Class Pass, two months time gained. A 2% difference equals two months in seniority. It is not surprising that considerable bitterness often resulted. Two weeks would be a far more reasonable difference.

After ADFA

If the Australian Defence Force Academy project does not proceed, it may be possible to take in hand the various works necessary for the Naval College in its expanded role. Foremost among these should be the acquisition of training craft. Two 30 metre vessels are planned, and some such craft should be put into service as soon as possible. Platforms for seamanship training are needed and the sooner the better. *BASS* and *BANKS* have been pressed into service for highly successful short cruises, but it would be unfair to the RANR Divisions to remove the two ships from their home ports as was once proposed. The Naval College needs its own craft, simple and reliable vessels of the trawler type with plenty of handling space for danbuoys and all the other paraphenalia of basic seasmanship training.

Conclusion

Comments, anyone ?

THE RAN AND THE JMSDF — PACIFIC PARTNERS?

by Lieutenant Kerry Clancy RAN

The announcement by the Japanese Government in October last year of its decision to send two destroyers and eight aircraft to the recent RIMPAC exercise off Hawaii was of great significance. It signalled a new interpretation of the Japanese Constitution in a politically sensitive area and heralded the emergence of a new government defence policy. Thus it is now time for the RAN to seriously consider the possibility of an increasingly active role by Japan in the defence of its interests in the Asian region and the Indian Ocean. The purpose of this article therefore is to examine the areas of mutual defence interest between Australia and Japan, and to consider ways in which the RAN and the Japanese Maritime Self-Defence Forces (JMSDF) might benefit by developing a closer working relationship with each other.

The Changing Environment

Firstly, what pressures forced the ruling Liberal Democratic Party to initiate a change which might have destabilized the Japanese political system? The military buildup by the Soviets in the area surrounding Japan is a grim reminder to the Japanese that they are living in the neighbourhood of a superpower. The Soviets have expanded their naval presence to a point where the US no longer has a decided military advantage, and this has had far-reaching strategic implications. The arrival of the *MINSK*, a *KIEV* class aircraft carrier, the *PETROPAVLOSK*, a *KARA* class guided missile cruiser and the *IVAN ROGOV*, an amphibious assault transport dock at Vladivostok has also posed new problems for Japan's defence planners.[1] These new ships have reinforced the Soviet Pacific Fleet qualitatively as well as quantitively, giving the Russians for the first time sea-based air cover and the ability to project their sea power beyond coastal areas. The Soviet Pacific Fleet which includes another 10 cruisers, 80 destroyers and 125 submarines, has now increased its naval tonnage to approximately 1,200,000 tons — six times that of the JMSDF.

Further, the recent construction by the Soviets of military bases on the Kunashiri and Entorofu Islands, islands claimed by Japan as being Japanese territory, and the stationing of Backfire bombers on Kamchatka have highlighted Japan's military weaknesses. It is now clear that in a general war the Russians have the ability to deny Japan military reinforcement, as well as strategic supplies of resources, and could successfully invade Hokkaido where a large part of Japan's Ground Self Defence Force is stationed.

The cornerstone of Japan's defence continues to be the US-Japan Security Treaty, yet the shape of this alliance is changing.[2] Over the last few years the US has been urging Japan to do more for its own defence, and to relieve the US of some of its burdens in the north-west Pacific region.[3] Naturally, these demands would eventually lead to a greater defence effort from the Japanese, but the visible decline of US power in the region as a whole has speeded up Japan's response.

This decline is evidenced in a number of ways. Most importantly there have been serious cutbacks in naval building by the US government, and the brunt of these cutbacks has been borne by ships essential for prolonged operations over great distances ie aircraft carriers, guided missile destroyers and support ships.[4] Naturally this deeply concerns both the RAN and the JMSDF, for the loss of such ships is most strongly felt in the Pacific Ocean. There has also been a serious decline in US personnel stationed in Asia — in 1964 there were 250,000 men stationed there, 800,000 in 1968 and in 1979 130,000, nearly a 50% decline over

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The Soviet aircraft carrier, *MINSK*, operating Flogger VTOL aircraft.

the 1964 pre-Vietnam figure. This reduction would have been even greater had President Carter continued with his withdrawal of troops from Korea. Further, since last year there have been a number of US government statements to the effect that in a crisis or a general war, the NATO area would have a higher defence priority than the Asian theatre. Accordingly units of the US Seventh Fleet would be used to meet European contingencies with the result that there would be a reduced number or no carrier-based aircraft in the Pacific.[5]

A corollary of this decline in the US Asian presence is that there is a proportionate increase in the vulnerability of Japan, the world's second biggest trading country and third largest economy, to an economic blockade. Freedom of the seas is vital, and any interruption to Japanese trade on any one of Japan's three main sea links could be catastrophic. The Japanese, of course, are particularly sensitive to the threat which the submarines of the Russian Pacific Fleet pose to their sea-lanes and being a pragmatic people, should they consider that the US can no longer protect their interests then they can be expected to gradually build up their military strength.

Expense, as well as changes in US defence thinking, has reduced the US military presence around Japan. As the Japanese yen appreciated against the US dollar, the US commitment to Japan cost more. The Japanese government, however, in order to alleviate some of the increased financial burden, has taken over a greater proportion of the costs involved, acknowledging that the stationing of US forces in Japan is the core of the Japan-US security system.[6]

The final factor to be mentioned is the political instability now present in Northern Asia. In 1978/79 there were a number of political events of great international significance which must have profoundly affected regional defence thinking. These events were the signing of the Japan-China Treaty of Peace and Friendship, the conclusion of the Treaty of Friendship and Co-operation between the USSR and Vietnam, the normalization of diplomatic relations between China and the USA, the denouncement of the Mutual Defence Treaty between the USA and Taiwan, China's giving notice of the non-extension of the Treaty of Friendship, Alliance and Mutual Assistance between itself and the USSR, the border war between China and Vietnam, the war in Cambodia and finally the assassination of President Park of South Korea. The eventual ramifications and repercussions of these events can only be conjectural, but they would certainly give every Japanese, as well as every government in the region, a great deal to ponder.

Coinciding Interests

The interests of the RAN and the JMSDF coincide in many ways, not only in regard to military matters but also in the area of general naval management. Many of the geographical problems which the RAN confronts daily, resulting from Australia being an island with an immense coastline having long lines of communication and trade, confront the Japanese as well. Thus the way in which both navies perceive their basic maritime defence situation and the way in which each navy attempts to work within the constraints imposed by defence budgets and limited resources is of mutual interest.

However it is in regard to the preservation of seaborne trade that the two navies' objectives actually coincide. At present trade between the two countries is worth nearly A$8,000 million per annum, and 35% of Australia's exports are carried in Japanese ships. Australia's shipping involvement is practically negligible.[7] Trade with Japan and the percentage of Australia's trade carried in Japanese ships will increase even more as Japan looks to Australia for energy supplies, and the increasing price of fuel oil gives the exporters of Australia's resources a further cost advantage over other nations.[8]

The Indian Ocean and Persian Gulf is another area of vital concern to both Australia and Japan. Recent events in Afghanistan have highlighted the importance of this region to both countries and each may be expected to be affected by the element of uncertainty injected by the USSR into the Middle East. Russia's military and political activity around the Indian Ocean and Persian Gulf clearly indicates a desire for a strong presence there, note the USSR's 1972 Treaty of Friendship with Iraq, support for the communist government in South Yemen and Soviet intervention in the Horn of Africa on the sides of both Somalia and Ethiopea. Should Russia eventually gain direct access to a warm water port in the Indian Ocean the effects would be far-reaching, for the Soviets would then be able to service and operate more ships for longer periods along the oil tanker routes radiating from this region.

The protection of this trade is an immense task, and the problems it would pose for the RAN alone would prove insurmountable. Accordingly Australia must investigate ways of involving Japan in the forward defence of that part of its own shipping which is on the southern Asian sea lanes. Australian strategists cannot presume that Japan will continue to be unwilling to undertake such a role, remembering that Japan has learned a great deal from World War II, when it paid dearly, militarily and economically, for leaving unescorted merchantmen to their own devices. Japan realizes that in any conflict or time of tension adequate supplies of iron ore, coal, non-ferrous metals and wool, as well as oil, are essential.

The RAN's interest in the Indian Ocean stems from the fact that a very substantial part of Australia's trade and nearly all of Australia's imported oil passes through it and a great part of Australia's off-shore resources lies under it. However, given the present state of our forces, the RAN cannot be anything more than a spectator in this arena. Should the RAN wish to play a role of some importance in the Indian Ocean, it could only be as part of a collective force, for it does not have the ships to enable it to station anything more than a token force in Western Australia.

The interest of Japan in the Indian Ocean and Persian Gulf is another thing altogether. Eighty per cent of Japan's oil comes from the Middle East, and 72% of all Japan's oil is consumed by industry. It is only too evident that Japan's economic might can be nullified and its military capability made ineffectual by cutting this liquid lifeline; considering the volume of oil involved, Japan would be unable to obtain alternative supplies in an emergency.[9] This being the case, the opinion of Admiral S.N. Kohli, former CNS Indian Navy, is worth noting. He has stated 'The use of (Japan's) 'self-defence' maritime forces to protect her vital ocean interests is a distinct possibility. This could lead to the urge for an Indian Ocean presence.'[10]

The natural question to ask is how could Japan do this? It is submitted that it would require a more elastic legal interpretation by Japanese courts of what is meant by the terms "self-defence". Should they accept the doctrine of the territoriality of a ship, which was accepted by the Permanent Court of International Justice in the case of *THE LOTUS* and hold that the JMSDF acts in Japan's self defence whenever it acts in defence of the nation's merchant shipping, then the way would be open for a Japanese naval presence in the Indian Ocean.[11] In such an event Japan, for logistic reasons and in order to avoid widespread political repercussions at home and throughout Asia, would probably wish to be part of a collective naval force.

The ASEAN region is another which concerns both the JMSDF and the RAN. The RAN's concern stems from propinquity — there are 240 million people living within a few hundred miles of Australia's northern coast and Australia shares a common sea with Indonesia. Out of necessity the RAN must show its neighbours that Australia has the ability to defend itself and protect its friends as well as the power to ensure that its interests are not ignored.

Further, both navies are aware of the strategic position of the ASEAN countries which adjoin or lie astride the principal sea routes linking the Indian and Pacific Oceans, Indonesia's position being of singular importance as it can control the Malacca Strait and alternative sea routes between the two oceans. These countries by virtue of their location can hinder direct trade between Australia and Japan and force Japan to alter its principle trade routes to the Middle East, Europe and Africa and could conceivably limit the access of both Australia and Japan to the region's valuable resources, particularly oil, tin, rubber and timber.

The Japanese navy has had a strong interest in South East Asia for most of this cen-

SOVIET PACIFIC FLEET — NEW UNITS

IVAN ROGOV — large amphibious ship (LPD) (11,000 tonnes, 159m overall, 2 76mm guns, 20 knots, and capacity for at least one battalion of naval infantry and up to 40 tanks and other supporting vehicles).

PETROPAVLOSK — *KARA* Class cruiser (8,200 tonnes, 174m overall, SSN 14, SAN 10, SAN 3 and 4 missile systems, four 76mm guns, 32 knots).

— photographs by courtesy of the Director of Naval Intelligence and Security

tury. The naval faction in Japanese politics prior to World War II fully realized the strategic importance of Singapore and the region's resources, control of which would lessen Japanese dependence on the US and free them from any possible trade restrictions.[12] During the war itself, the Malacca, Sunda and Luzon Straits acted as bottlenecks for Japanese merchantmen, and the resultant concentration of Japanese ships in their vicinity enabled American submarines to wreak havoc among them.[13]

Nowadays Japan underpins the economic stability and progress of all the ASEAN nations, being a source of capital, technology and industrial goods as well as a huge market. Indonesia has the greatest dependence on Japan as Japan takes nearly half its exports and has invested over US$6,000 million there.[14] This economic involvement in ASEAN helps to promote the internal security of Australia's nearest neighbours, and has also provided Australia with the possibility of linking trade with the Japanese with their influencing events in the region.

Australia and Japan also have a common ally in the USA. A comparison of the ANZUS treaty with the Security Treaty between the USA and Japan establishes a number of similarities and leads to the conclusion that Australia and Japan, along with Korea and the Philippines, each form a link in a treaty network establishing a defence system in Asia centred on the USA. The United States' major contribution to this defence system is the Seventh Fleet, which is the most powerful naval force in the world. Its responsibilities extend over thirty million square miles of sea, and its main objective is to maintain its ability to destroy the combat forces of any enemy. Since it is a strike force, its convoying and ASW roles are subordinate, and accordingly US policy has been to encourage America's allies to develop an ASW capability which can complement the USA's own defence of key lines of communication.[15] The JMSDF'S ASW orientation is partially a result of this.

The JMSDF's acceptance of the role of a junior partner to the Seventh Fleet is evidenced by its force structure, which is dependent upon US air superiority because its ships have on the whole a limited surface-to-air missile capability. Further the equipment and supplies it uses (eg fuel oil, RAS lines and ammunition) are compatible with those of the USN, while, a great deal of Japanese military hardware is of American design manufactured in Japan, eg DDGs, F15s, P3Cs. The conclusion to be drawn from such facts is that the JMSDF and the USN each have a need for the other, and that interoperability has given both greater flexibility plus the means to overcome in part many of the logistic problems created by the enormous distances in the Pacific.

The RAN, like the JMSDF, acknowledges the importance of having a strong relationship with the USN. As an ally, the RAN accepts responsibility for those areas which it considers to be of primary strategic concern around Australia and in this way contributes to the US global naval defence effort. In return the RAN receives many important practical advantages in the areas of intelligence, defence technology and science, naval staff contacts, the latest operational and tactical procedures, as well as the opportunity to exercise with modern and powerful naval forces. Yet the RAN does suffer from the fact that a good part of its equipment is made in America, thereby creating a dependence upon the USA for certain types of ammunition, weapons and spares. However, putting aside the strategic and financial costs, purchases of such equipment as DDGs, P3Cs etc have enabled the RAN to maintain professional and technological standards at least equal to those in the JMSDF.

Developing Closer Links

Japan is a maritime nation in the true meaning of the term, and the way in which it has developed its sea power by exploiting the world's oceans could be a worthy precedent for Australia. Japan has built up a merchant fleet of 33 million tons, its fishing fleets roam the globe and even now it possesses a large navy. Japan's shipbuilding capacity is huge, and Australians might well be ashamed that their main shipyards are now located outside Tokyo. Accepting these facts and considering the issues raised in the preceding sections, can the RAN continue to ignore the maritime might of Japan into the 1980s? It is the opinion of the author that it cannot, and that the RAN must begin now to examine ways of forging closer links with the JMSDF. Accordingly the proposals below are offered for consideration.

Initially, the Japanese language would present a real barrier to the development of any meaningful relationship between the two navies as it is one of the most difficult in the world to learn. However, as Japan has throughout this century developed its own naval doctrines and tactics, and produced such naval thinkers as Akiyama Saneyuki, Suzuki Kantaro and Sato Tetsutaro — the Asian counterparts of Mahan, Makarov and Corbett — the RAN cannot afford not to have some officers and sailors with a working knowledge of Japanese.

An exchange of personnel might formally begin a working relationship, providing both Australian and Japanese members with language practice and the opportunity to witness

The JMSDF guided missile destroyer *TACHIKAZE* completed in 1976 (3900 tonnes, 145m overall, standard missile system, two 5in. guns, ASROC, speed 32 knots).

the day to day operating procedures in each navy. Considering as well the quality of the work the Japanese have already done in marine and electrical engineering, ship designing, hydrography and oceanography, it is clear that many members of the RAN could gain immeasurable benefit from a period of study in Japan. An exchange of personnel would also promote personal contacts, which the Japanese place great store on. The Japanese Government could well agree to such an exchange, as a recent high level report commissioned by the Japanese government, the Saito Report, envisaged in its first part some cooperation "for peace and safety" between Australia and Japan during the 1980s.[17]

The exchanging of intelligence and limited military exercises would also be practical ways of developing close military ties between Australia and Japan. Australia is in a position to obtain accurate intelligence in the Indian Ocean, Papua New Guinea and the ASEAN region, whereas Japan is closer to China and the USSR. Further, the RAN could be expected to gain great benefit from regular exercises with the JMSDF. Exercises concentrating on ASW, AAW, naval control of shipping and the development of interoperability in the communications field would increase the protection available for ships trading between the two countries and enable both navies to play a stronger supporting role to the USN's Seventh Fleet.

Another matter to consider is the possibility of negotiating an agreement between the two navies for the standardization of equipment, ammunition and stores. It should be realized that Japan has for the last two years been equipping its surface combatant ships with the Harpoon missile and soon it will be fitted on all destroyer escorts, guided missile destroyers and a few submarines. Some of the 45 P3Cs being built under licence will also carry two Harpoon missiles. Further the JMSDF, like the RAN, operates DDGs and is introducing helicopters on its modern ships for ASW. Similar high technology defence equipment thus already exists in the two forces, and since this compatability in hardware will obviously continue for some years, the operational advantages to be gained from a standardisation agreement should be investigated.

The most tangible benefits for the RAN resulting from a closer relationship with the JMSDF however, would arise from joint participation in various research and development projects. At present the Japanese government is committed to the development of several new naval weapons systems which would be of interest to the RAN:

- laser and microwave radar systems,
- a new torpedo for the P3C,
- an acoustic sensor for ASW, and
- ECM systems and counter-countermeasure systems.[18]

The desire on the part of the Japanese to undertake more of their own military research and development stems from a number of factors. Firstly it is a hangover from World War II when Japan was easily defeated by a scientific and technological superpower. 'Never again must Japan go to war with a bamboo lance' was a comment made by Hashimoto Mochitsura, a former submarine commander.[19] Also, Japan as a result of its dependence on the USA for advanced military hardware has hitherto excluded itself from one of the most important frontiers of science. The industrial spin-offs from the American space and defence research and development programmes have given US industry the premier position in the areas of computers, communications, nuclear and deep sea technology. Japan can no longer allow this situation to continue if it wishes to retain its powerful economic position in the 21st century.

Given the commercial strength of the Japanese electronics industry and Japan's growing computer technology, the RAN could expect the Japanese to do excellent research work in the areas of communications, acoustics and guided weapons. Participation in such research and the later joint production of the end product would also provide the RAN and Australia's defence industries with current technology. Australia as a matter of urgency must look at such schemes, for the local electronics industry does little more than assemble component parts while the maintenance base for so much other equipment is too narrow.[20]

Overview

The issues raised in this article concern RAN policy, yet they are just one aspect of an important political question. Is Australia developing a real *modus vivendi* with its Asian neighbours? Asia is slowly but surely becoming the issue that will deeply affect every Australian. Perhaps inexorable historical forces are at work as the question of whether Caucasians can continue to live in safety and peace in regions peopled by other races is still to be answered. However, it is clear looking at Asia's problems that Australia and the will of its people is to be tested in the coming decades — could it be otherwise, living so close to over 2,000 million people?

The present leaders of the RAN can remember when our defence policies centred on those of Great Britain, and they are aware of the price we nearly paid for it. They have seen circumstances demand change. Now the time for change has come again as there is a need for Australia to play the active role in the development of friendship and cooperation throughout Asia. The possibility of the RAN and the JMSDF working together should be reviewed in such terms.

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APPLICATION OF TRAINING SYSTEMS THEORY TO THE RAN STAFF COURSE

by Commander Haydn L. Daw

'Boys, remember that every hour wasted at school means a chance of misfortune in future life.'
..... Napoleon

The reader may well ask why the author should show an interest in applying 'training systems' precepts to the RAN Staff Course and that is a very reasonable question. The first part of the answer is that the author was involved with some aspects of the Staff College Project, while working for the Director of Naval Training and hence developed a strong interest in the Staff Course. The second part of the answer is an increased awareness by the writer of the benefits from designing instruction using systematic principles. Although the systems model is sometimes thought of as being most useful for the design of new courses, there is no reason why existing courses should not be modified, improved or at least examined to see where the advice of training systems theory may be relevant and capable of application.

The comments which follow should not be construed as criticisms of the existing course but rather ideas which have resulted from thinking about the Staff Course and the systematic approach to training. It is quickly added that the author does not have first hand knowledge of the Staff Course, as it has developed, and it may be that some or all of the ideas which follow are incorporated in the present course. This paper is confined to some theoretical considerations; there may be good practical reasons why some of the conclusions may be less relevant.

It is no secret that when the present course was being developed in 1978 there were a number of constraints imposed on the Design Team who were to develop the course. They include the following:

- The length of the course had been decided. The decision to offer two courses a year had been taken and this limited the course length to something less than six months (22 weeks was the final course length).
- The Design team was faced with an opening date for the College early in January 1979, when they met early in 1978 to commence course design. When the time required to print materials and have them distributed to prospective students was subtracted, this left only about eight or nine months to design the course and produce the complete course materials. This was not sufficient time to complete all phases in the RAN Training Systems Model.
- The designers were forced to proceed without having the results of an officers job or occupational analysis to input into the design process. This difficulty was added to by having to use a set of 'Course Charter Objectives' which were written in non-behavioural terms.

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- Although the 'Design Team' had materials from similar courses available, they were not always completely relevant. The important point is that *all* learning materials for the course had to be produced by the Design Team.

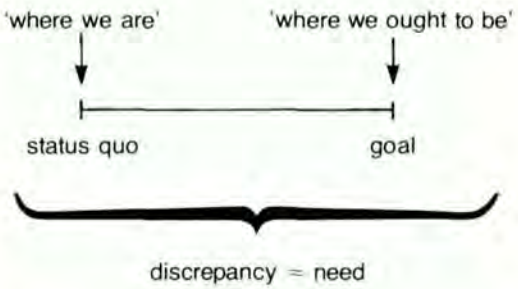
- It was impossible to include everything in the course that everyone wanted included. Obviously some things had to be left out or at least reduced in emphasis.

The rationale for a systematic approach to course design is self evident if we subscribe to training effectiveness and efficiency. In simple terms, in order to gain a measure of the quality of training we need to be able to compare training outcomes against training objectives. This can only be done if the training objectives are clear, concise and directly derived from the job. A systematic approach to course design is an objective method which, if applied, should result in a graduate who is prepared for the job. The systematic approach concentrates on learning and outcomes, rather than methods of instruction and process.

Remaining sections of this paper examine in turn, analysis of the job, formulating objectives, design, and evaluation of the Staff Course. After each topic is considered, the implications for the Staff College are briefly discussed.

Analyse the Job

The objective of this phase of course design is to answer the first of Mager's[1] three questions 'Where are we going?' This phase is sometimes called 'Needs Assessment and Goals'. The word 'need' is an important concept. In general a need exists if there is a gap between 'where we are' and where we ought to be'.



How do we measure, 'where we are' and 'where we ought to be'? There is little doubt that we can get part of the answer to both questions from a good occupational analysis. 'Where we are' can be found by testing prospective course students either before or as they arrive for the course. It may be that all students cluster around a particular level but it is probable that the students will vary with experience, specialization and education. It may also be true that the 'where we ought to be' may vary with specialization, post course employment and perhaps even the personal desires of students.[2] Unless we complete a rigorous analysis of job and student data, we shall not know with some precision the facts needed to design a course to satisfy the 'need'. After this analysis we should also be able to decide with some precision whether all officers require all the training.

Implications

As soon as the officers occupational survey outputs are available they should be used by the Staff College to aid in compiling a list of job tasks and duties for officers in relevant jobs. It will also be necessary to obtain other inputs to this list before formulating training objectives.

If officers do vary by specialization, experience, education, probable post course employment, and in personal interests, then it may be reasonable to consider modification of the principle of a common course for all. It seems doubtful that a common course is required if the inputs vary and there are different jobs to go to on graduation. Of course it is difficult to see the tailoring of the course to individual needs going very far with only 20 students but it may be possible to consider 'core', 'specialty' and 'elective' modules, for example, to attempt to cater to broad differences.

Formulate Training Objectives

The inputs to the analysis phase are job tasks but I have already indicated that they may be supplemented from other sources, such as functional directorates and staff officer supervisors. There is little doubt that the list of tasks or capabilities required to be learnt will exceed the time available for instruction. The list then needs to be ranked by some criteria so that the 'important' tasks are included and the 'less important' are left out. It may be that the tasks will be ranked on a number of factors; 'time spent' and 'consequences of inadequate performance' being two common ranking criteria.

Job analysis may not provide all the inputs required for Staff Course design. There may be reasonable goals which relate to attitudes for example, which may be difficult to derive from a job analysis. There may also be job demands in the future which should be part of today's preparation. As has already been suggested, a wide variety of sources should be sounded for possible objectives for the Staff Course.

The point that course objectives must be written in behavioural terms is important for if they are not, it is impossible to be sure if the objectives have been achieved. For example, the RAN Course Charter Objectives, which are the closest thing to course objectives the writer is aware of, contain objectives where the action verbs are 'know' and 'comprehend'. While broad course goals may be acceptable in non-behavioural terminology, course objectives are not. The difficulty with an objective such as

> "... know the roles, organizations and capabilities of the Army and Air Force."

is that it can mean different things to different people. It could mean one hour of instruction or many. How do you test whether such an objective has been achieved? Do you want the student to be able to 'state' the 'role', organization and capabilities...', or do you want him to be able to do something with this information? The distinction has important implications for instruction and assessment.

As there will not be time to teach everything, an additional aid to decision-making on what should be included, may be to consider the type of capability to be learned.[3] There are five types of learning outcomes or capabilities; intellectual skills, cognitive strategies, verbal information, attitudes and motor skills. The Staff Course is probably concerned with the first four outcomes and I will discuss briefly the first three.

Intellectual skills are concerned with concepts, rules and problem solving. The utility of this learning is that it can be applied or used in new examples. It is learning intellectual skills that teaches you how to do things. An important aspect of intellectual skills is that the learner interacts with the environment using symbols.

Cognitive strategies are skills of managing ones own learning, remembering and thinking. They are the general approaches or internal skills we develop usually over a long period of time. Cognitive strategies can be thought of as internalized (in the mind) 'tricks of the trade', tools or approaches we apply when we are called on to use our intelligence.

Learning of verbal information is concerned with being able to 'tell about something'. Information is important because we all need to know a certain number of facts which may be required for their own intrinsic value and also as an aid to other learning. Detailed information or specialized knowledge is required by an expert in any field.

The point to be made is that while information is important and required it is not the learning of information that enables us to *do* things. This involves the learning of intellectual skills and the development of powerful cognitive strategies. It is with these two types of learning that the Staff College should be most concerned. Information is not always remembered and it is often soon outdated, whereas intellectual skills and cognitive strategies are often retained and transferable to new situations.

Implications

The first and most important implication is that all objectives need to be formulated in behavioural terms. They should also be valid objectives being derived from job tasks or other duties. We cannot afford the luxury of developing skills not required on the job.

Intellectual skills and cognitive strategies with their generalizability and transfer aspects are likely to be more valuable outcomes than information which may change or become outdated. As an example of what is meant here we could consider the charter objective:

> 'comprehend the national and world affairs affecting Australia's defence interests.'

Part of this 'objective' would require the students to be aware of Australia's defence interests. One approach would be to present a list of our defence interests to the students to be learnt as verbal information. Another approach, which is more preferable, would be to confront the students with a problem to solve, ie to have them *generate* Australia's defence aims and interests. (Intellectual skill.)

To pursue this approach may mean that certain information objectives will need to be covered outside the course proper. It may be more appropriate for some of the required reading to be done prior to the course proper and for the course to concentrate more on intellectual skills and strategies.

As all possible objectives cannot be covered in a 22 week course there is a philosophical question which needs at least to be considered: 'whether to cover many objectives shallowly or to cover a few in greater depth, or strike some happy medium?' US Service Staff Colleges have been criticised for trying to cover too much and this is often the approach when there are more objectives than can be taught. We tend to list the objectives and assess the time that can be allocated to each, rather than taking the most important and the time required to learn it, then going to the next important and so on until the time is exhausted.

Design and Development (or 'How will we get there?')

Not only is it important to have a strong relationship between course objectives and the job it is also important that there be a one to one relationship between the test items and the objectives. If this is the case then the course teaches skills that will be used on the job, and also the course results should be a good predictor of success on the job. It is necessary to have all objectives, including enabling or subordinate objectives written in behavioural terms and test items developed which test the learning of that behaviour.

It has been said that the method of learning in some staff colleges can be summarized as 'guest lecturers and we teach ourselves' (pooled ignorance?) and that is often the impression gained. The appropriateness of this method of instruction is questioned. To rely on guest lecturers for much of the 'course content' or input seems to be risky as they:

- generally present information, tell you how it is, rather than teach intellectual skills,
- are not valid and reliable vehicles for teaching objectives,
- are often from the bureaucracy and present the party line on controversial subjects, and
- are not permitted to be challenged by students.

That does not mean there should be no guest lecturers but it does follow that guest lecturers should not be recruited to teach course objectives. There are more economical and effective methods which can be used. Guest speakers can of course fulfil other roles and aid in achieving other objectives. They may, for example, provide motivation, act as role models for students or improve the stature of the course.

This writer would argue that the objectives to be achieved on the Staff Course are so important that they should be achieved by expert instruction rather than by guest lecturers and seminars. Seminars and other peer learning methods are important reinforcers of good instruction but should not replace it. The Staff College requires staff who are involved in an active teaching role. There do not appear to be *a priori* arguments, for all the staff to be of a particular rank or specialization providing they are expert in the discipline in which they are going to provide instruction. There may be good young arts graduates who would be capable of providing good instruction in their field. If officers are not available to teach in all subject areas, there may be an argument for considering a civilian or two or perhaps a retired officer.

Coupled with the point made earlier regarding the 'shallow' versus 'depth' consideration of the Course is the question of structure of the Course. Should the course be highly structured with every minute of the waking day programmed for the students or should there be time for thinking, writing and reading without the pressure of a deadline. There may be some reluctance to allow students a chance to manage their own time and set their own priorities but the advice of Major General De Witt C. Smith Junior[4] seems worth considering. 'I have faith that good students, treated honestly and given a chance to think and grow will act responsibly and produce first rate work'.

The organization of the Staff College must of course support the learning that is to take place. Should a greater number of the staff take an active part in the teaching process than just the Directing Staff? Should one staff member be attached to a seminar for long periods? (the implication being that you cannot be expert in everything).

Implications

The implications for the College centre around the role of the Directing Staff. What is suggested is that the mission of the College is too important to be tackled using methods which can be inefficient and less effective than instruction by good instructors. The search for capable instructors should be widened to obtain the most suitable officers, regardless of rank or by hiring suitably qualified civilians on short term contracts. As far as pedagogy is concerned, a balanced approach is probably desirable. This could include lectures, seminars, tutorials, work groups, exercises and games. It is probably true that operational procedures are learned more efficiently through practical than theoretical approaches.

Evaluation

Mager's third question, 'How will we know when we have arrived?', is answered by the whole, 'evaluation' process. The term is used to include the internal 'course and student evaluation' and the external 'validation' procedures.

Evaluation must be concerned with how successfully course objectives were achieved. If behavioural course and subordinate objectives are developed, then evaluation of the students using instruments which are congruent with the objectives gives a valid measure of course effectiveness. All of this implies that student performance *will* be assessed, and in general, it is probably worth assessing after each objective, as, in the case of intellectual skills, the learning is hierarchical ie you need to master objective one in order to learn objective two and so on.

The College must conduct external evaluation to ensure graduates are meeting Service needs. This is the validation phase which ensures that the Course objectives are isomorphic with job tasks. This important process can be accomplished by surveying graduates and their supervisors some time (perhaps three months) after the course is completed to obtain feedback which can be analysed and used to make necessary adjustments. An important component here is that there must be a formal mechanism established to ensure action suggested by the validation procedure occurs.

Implications

Student performance on the objectives must be assessed (how else can we know they have arrived?). As an aside, it may be necessary, or desirable, to report student performance on course objectives in addition to the normal PP101. This report could consist of a list of student results on the major unit objectives of the Course.

Validation of the Staff Course must be conducted and a formal mechanism or procedure introduced to ensure course corrections are made. This may be more successful if the validation is conducted by an external agent rather than the Staff College themselves.

Conclusion

The preceding arguments have been predicated on the assumption that the RAN Staff Course is too important to be excluded from satisfying the same sort of requirements that every other course in the Navy is expected to satisfy. That involves starting with the job, developing behavioural objectives and criterion referenced tests, using the appropriate pedagogical approach so that optimum learning can occur, and to evaluate and validate the outcomes of the course.

How can all these implications be considered? The Staff College will have to take up the challenge. The Course Design and Development Section and the students themselves present two possible sources of manpower to consider the implications outlined in earlier paragraphs.

Many of the traditional staff college practices have been challenged in this paper. This is not to suggest they are wrong but to propose they are not the only way of doing things. None of these practices can be accurately evaluated until a set of behavioural objectives have been formulated and approved for the course. If this article in some way prompts that action to occur, then it will have been worth the effort.

NOTES

1. Mager R.F. *Preparing Instructional Objectives*. Palo Alto, California. Fearon. 1962.
2. The reader will observe that I have intentionally made no reference to standard of performance in these examples.
3. These capabilities or learning outcomes are described in Professor R.M. Gagne's book *'The Conditions of Learning'* Holt, Rinehart and Winston. New York Third Edition, 1977.
4. Major General Smith made this statement while Commandant of the US Army War College. Quoted by Maureen Mylander, *'The War Colleges A Wasted Resource'*. The Time Magazine. March 7, 1977.

THE DEMISE OF THE FLEET AIR ARM

CNO 137/1925 which formally established a Fleet Air Arm of the RAN was reprinted in the last ANI Journal. As will be seen from the following, the separate Arm was short-lived.

CNO 1/1929 REVISION OF NAVAL AIR ORGANISATION

The organisation of the Fleet Air arm of the Royal Australian Navy, as established by C.O.R., Article 137A, has been under consideration by the Commonwealth Government.

2. It has been decided that a distinct Fleet Air Arm, organised on lines similar to those governing the Fleet Air Arm of the Royal Navy, is not to be maintained in connexion with the Royal Australian Navy, and it had been laid down that the responsibility for the provision and training of Personnel for Naval Air work shall in future be allocated as follows;-

(a) Observers and Telegraphist Air Gunners, required for Aircraft for the Australian Seaplane Carrier and Cruisers, will be provided by the R.A.N. The Naval Board will be responsible for making the necessary arrangements for their training.

(b) Pilots and other Personnel required for maintaining and operating Aircraft for the Carrier and Cruisers will be provided and trained by the R.A.A.F. Such personnel, while on duty with the R.A.N. will be under the command and control of the Naval Board.

3. The Navy will continue to second Officers to the Air Force for training and service as Pilots, a proportion of these, if volunteers, transferring permanently to the Air Force, and the balance returning to the Navy. Up to four Officers a year will be provided by the Navy, if practicable.

4. The Air Board will appropriate for Air duties with the Naval Forces preferably ex-Naval or seconded Naval Officers, as far as numbers permit.

5. The details of the new system for the secondment and transfer of Naval Officers to the R.A.A.F. are set out hereunder:-

(i) A Naval Officer of the Executive Branch, if a volunteer and considered in all respects suitable, may be seconded to the Air Force for a period of three years; he will have the option of extending the period of secondment to four years, subject to the mutual agreement of the Naval and Air Boards.

(ii) A volunteer must be of the rank of Sub-Lieutenant or Lieutenant, and must not, as a rule, be above the age of 25 on the 1st of January in the year in which he is seconded. A sub-Lieutenant must have obtained his Watchkeeping Certificate.

(iii) An Officer who is unsuitable will be returned to the Navy at any time.

(iv) A proportion of the Officers seconded to the Air Force, if volunteering and found suitable, will be finally transferred to the Air Force, such transfer taking place at any time during the period of secondment; Officers not transferred will return to the Navy at the end of the three or four year period, and will not normally again be seconded to the Air Force, but will be eligible to specialize as Observers.

(v) A Naval Officer seconded to the R.A.A.F. will be granted Air Force rank, the initial substantive rank granted being that of Flying Officer; he will be eligible for advancement in the R.A.A.F. irrespective of his rank in the R.A.N. His advancement in Air Force rank will be determined by the Air Board.

Honorary Air Force rank, equivalent to his relative Naval rank, will be granted to a Naval Officer, while seconded, in every case where the Naval rank held is relatively superior to his substantive Air Force rank. He will take precedence (but not command) amongst other Officers, in accordance with his Naval rank.

Temporary R.A.A.F. commissions will be issued to Naval Officers whilst seconded.

(vi) A seconded Officer will wear the Naval uniform of his rank until he has qualified as Pilot. Thereafter, the Air Force uniform of his honorary rank will be worn, towards the cost of which an Outfit Allowance of £30 will be made.

On occasions when Ball Dress, Mess Dress, or Mess Undress is worn, a seconded Officer will invariably wear the appropriate Naval uniform.

(vii) A seconded Naval Officer will receive the Active Pay and Deferred Pay and Allowances of the substantive Air Force rank to which he is appointed.

Deferred Pay credited during the period of secondment will be transferred to the Navy Office on the Officer's reversion for payment to the credit of his deferred Pay account. In the case of an Officer permanently transferred from the Navy to the Air Force, Deferred Pay accrued up to the date of transfer will be paid to him on discharge from the Naval Service, if he elects to come under the provisions of the Superannuation Act in respect of Air Officers; or if he does not so elect, his Naval Deferred Pay will be transferred to the Air Force for payment to the credit of his Deferred Pay account.

(viii) The new system will be brought into operation as from the 1st July, 1928, from which date all Pay and Allowances of seconded Naval Officers will be chargeable to Air Force funds.

In the case of Officers who, previous to this date, were serving with the R.A.A.F. arrangement have been made that, on transfer to the new system, they should not be placed under conditions, in regard to Pay and Allowances, less advantageous than those under which they, in the first instance, volunteered for Air Service.

6. The relative Regulations and Instructions will be amended accordingly in due course.

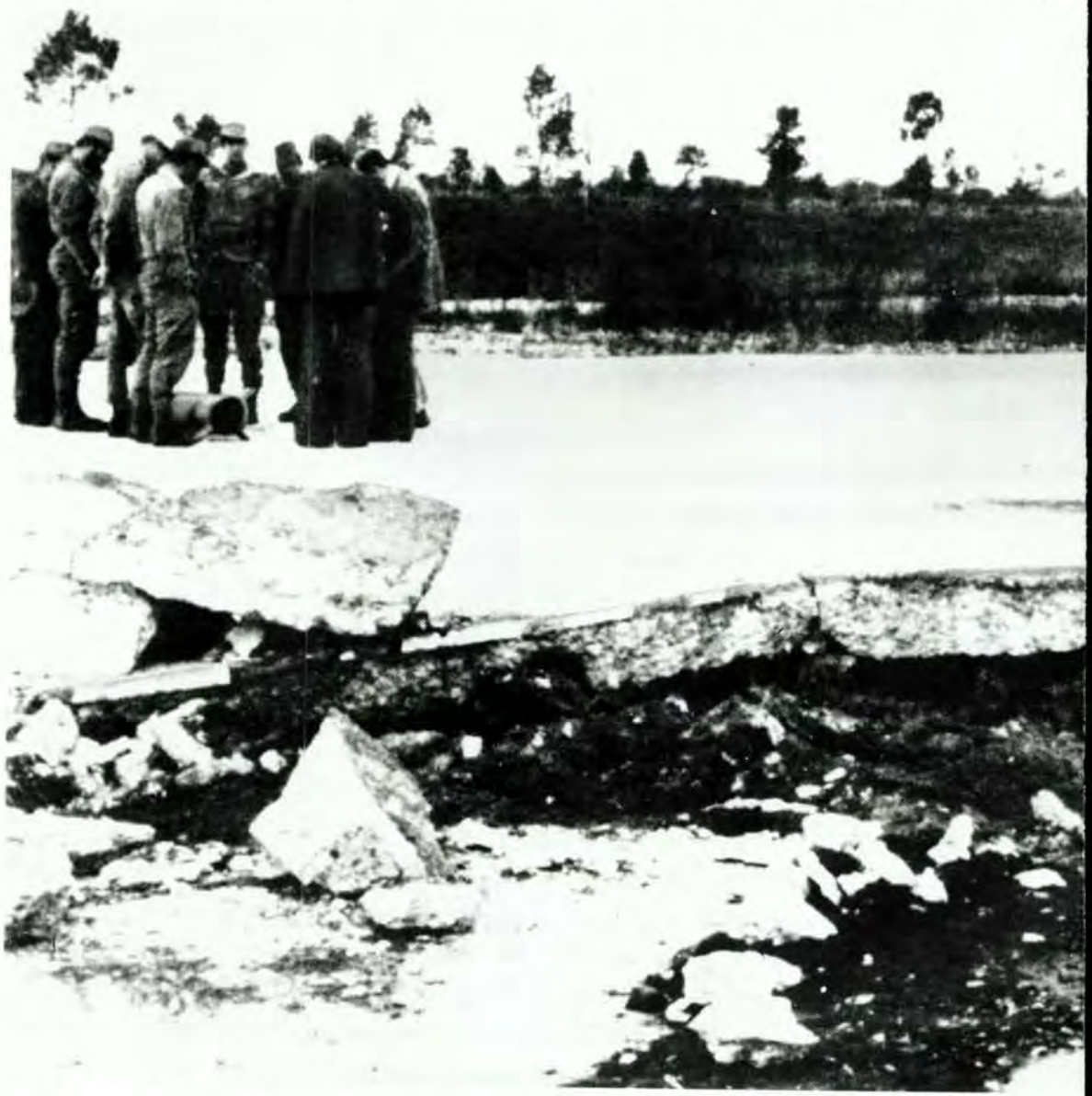
LAND BASED AIR POWER

Neutralising an adversary's airpower by attacking his runways is basic war tactics. Remember the Middle East in 1967?

With today's anti-airfield weapons, any advantage of protecting aircraft in shelters and hiding vital facilities underground is lost.

Rocket-driven bombs delivered at low level can penetrate 40 cm of reinforced concrete to produce craters about 5 metres wide and raised and cracked areas of damage larger than 250 m^2. These weapons are in service now. A fighter can carry six of them. A single successful pass can put a runway out of action. Land-based airpower is more vulnerable than ever.

Fixed-wing jet airpower at sea is more flexible than ever ... with V/STOL. Greater numbers of smaller, less expensive V/STOL ships can disperse and can position tactical



SOME IMPRESSIONS OF ANTARCTIC OPERATIONS

by Lieutenant Frank Doe RAN

Antarctica is the coldest, driest, windiest, highest continent on Earth. It has fascinated explorers and scientists since rumour of its existence in about 650 A.D. Captain Cook RN was the first to cross the Antarctic Circle in 1773, but the mainland was not sighted until 1820 by the Russian, Bellinghausen.

Even after some 300 expeditions to the mainland of Antarctica, only recently have permanent stations been established:

- 1947 Argentina and Chile established permanent weather stations;
- 1948-53 French research station in Terre Adelie;
- 1955 American McMurdo Station;

It was the International Geophysical Year (1957-58) that initiated the full thrust of scientific investigation and exploration, and hence the establishment of many permanent bases and staging points. Now there are more than 20 stations manned year-round; Australian, Argentinian, New Zealand, South African, British, American, Russian, Japanese, French and Chilean.

In order to develop a core of experienced officers for future employment in a possible Australian Antarctic ship (AAS), the Royal Australian Navy desired to expose officers to navigational and ship handling procedures used in the Antarctic region. Two officers were selected in late 1979 to observe operations of the United States Coast Guard during the annual icebreaker pilgrimage to McMurdo Sound. Other officers joined Lauritzen Line ships for experience around the Australian stations on the icy continent — Mawson, Davis and Casey.

Ice-breaker Operations

The US Coast Guard operates a large fleet of icebreakers but the USCGC *POLAR SEA* is the newest, largest ship of the inventory. The *POLAR SEA*, or 'Building Eleven', as she is more affectionately known, is an impressive ship; 1¾ and 1½ inch specially treated steel hull, together with closely spaced v-shaped construction members very easily add up to make the 13,000 + tons. With 1.3 million gallons of fuel onboard, she has a cruising range of 28,000 miles at 13 knots. Her combination of diesel or gas (CODOG) propulsion system uses six Alco V16 diesels each producing 3,000 shaft horse power or three Pratt and Whitney gas turbines each of 20,000 h.p. What makes the *POLAR SEA* and her sister ship the *POLAR STAR* so incredible, and a unique class, is that not only are they diesel-electric (DE) and turbine-geared (GT) but they have variable pitch propellors. This overall propulsion power ensures that acceleration is exciting — at times even dangerous.

Apart from having what could only be described as 'superior' accommodation (although essential in an icebreaker), the *POLAR SEA* carries two helicopters, three oceanographic laboratories, fully fitted out hospital and dental surgeries, a photographic section, a gymnasium and of course, a piano and 'soda fountain'.

THE AUTHOR

Lieutenant Frank Doe entered the RAN as an aircrew trainee in 1968. After new entry courses, he undertook observer training in Australia and at the RN Air Station Lossiemouth in the United Kingdom. Besides operational flying postings with ASW Tracker aircraft in VC851 and VS816 squadrons, he has had a staff posting in the Directorate of Naval Aviation Policy in Navy Office Canberra and has completed advanced acoustic analysis training in Canada. He is now serving in the Australian Joint Anti-Submarine School at NAS Nowra.

Even given her massive size, the *POLAR SEA* rolls like any other icebreaker — extremely uncomfortably. Because the hull needs to be rather round and smooth for work in the ice, icebreakers' hulls may be likened to the bottom half of a football. Allied to this is the large amount of weight very low in the ship's structure compared with other ships of similar tonnage. Both these facts make an icebreaker roll 'if a row-boat goes past'. While we recorded rolls of 47 degrees, other smaller ships recorded 58 degrees with about a 10 second period — most uncomfortable!

This incessant rolling highlighted our problem of newly designed, wide uncluttered bridges; there is not much to grab hold to if unexpectedly pitched off one's feet. The Quartermaster of the *POLAR SEA* suffered bodily injury when an unexpected larger than normal roll dislodged him from the chart table and hurled him about 60 feet into the port side lookout station. Then back again, together with the lookout in tow, the 80 feet across the bridge into the starboard side. They were finally 'caught' on the third bounce!

Midway between New Zealand and McMurdo, huge fog banks create an aura of foreboding and are strangely eerie. This fog would close in very quickly and reduce visibility markedly; even in winds of up to 25-30 knots. In a modern ship, fog signalling is made easy by automation, but in older vessels the boatswain's mate was kept extremely busy.

Icebergs are classified according to size, the three most common of which are:

- iceberg — about ship size;
- bergy-bit — about cottage size; and
- growler — about piano size.

The largest iceberg recorded was about 140 miles long and 40 miles wide, while the highest latitude to which they have been found (in the southern hemisphere), is about that of Brisbane.

Negotiating the ship around icebergs or through large fields of bergs created no real problems although even large bergs are sometimes difficult to detect either by radar or visually. In 24 hour daylight too, eye strain incurred during a normal bridge watch becomes most tiring and sunglasses or skiing goggles are a necessity.

While much has been written about navigation in both Arctic and Antarctic regions, apart from the special hazard offered by growlers and bergs during periods of low visibility and fog, the basic problems remain essentially the same as those encountered when operating over extended periods in lower latitudes. Simply put,

USCGC *POLAR SEA* (WAGB 11) Antarctica January 1980.

POLAR SEA's wide bridge offers ample room but can be dangerous during heavy rolls.

navigation in high latitudes is difficult because of:

- the presence of icebergs and floes;
- abnormal refraction;
- very few aids to navigation;
- the sun appears infrequently (we managed two astro fixes and six sun lines in four weeks);
- the false horizon caused by the ice;
- magnetic variations change rapidly; and
- speed determination in ice is extremely limited.

Overcoming many of these problems however is the satellite navigation system (SATNAV) — the single, most reliable and accurate system for polar navigation. The SATNAV system fitted in US Coast Guard ships is the Magnavox Mx 1107, which proved very accurate, robust, and extremely reliable. Even though the *POLAR SEA* experienced extreme vibration whilst actually in the ice, the SATNAV continued to function perfectly.

Icebreaker life is not very restful. In the open ocean, they roll incredibly; in the ice they vibrate dramatically. Initially, to ride in a 13,000 ton ship under 60,000 hp through ice three to four feet thick was quite exhilarating. In the much thicker fast ice however (fast ice is ice made fast to a landmass), the feeling of exhilaration gradually changes to tiredness and frustration. In the *POLAR SEA* in ice less than six feet thick, very little finesse is required. She nicely powers her way through. In more than six feet thick ice, however, backing and ramming is required — ahead, stop, back, stop, ahead again — all through which the ice creaks, groans, squeals, screeches and cracks while the ship shudders, vibrates, knocks, bumps, brushes and shatters her way a little further. A process as hard on the crew as it is on the ship; especially when large blocks of ice are 'milled' through the propellors.

For the crew during actual icebreaking there is little rest. They cannot sleep because of the noise; if not the turbine whine or supercharger roar then the incessant bang and crack of the ice. Even lying on a bunk, one is physically assaulted by the vibration. It is near impossible to stand on either forecastle or quarterdeck because the deck plating ripples and heaves so much.

Notwithstanding all the trauma, the *POLAR SEA* completed the 16.5 mile break-in through up to 10 feet of fast ice in 17 hours 45 minutes, slashing the previous record by days. This was not without cost however; some of the damage was that:

The onset of snow denies visual reference to the horizon and distance perception becomes difficult.

The ice wharf at McMurdo Base is covered with earth in summer to slow the melting process but too much earth will cause the wharf to sink.

- both anemometers were vibrated from the mast (much to the consternation of the top-side lookout!);
- hydraulic lines were fractured;
- an oil distribution box for the VPP system was wrenched from its mountings;
- printed circuitry and computer wiring cracked;
- an aft syntron shaft seal fractured;
- some propellor hub studs were sheared off;
- ropeguards were either ripped off or bent; and
- the rudder post and pintle bearing was bent and cracked.

If one considers the environment in which icebreaker sailors live and work, together with being away from home for five month cruises (always of course at Christmas), it becomes essential that accommodation onboard be the best possible.

Antarctica

The Antarctic is at the end of the world and at both extremes in description: it is enormous, it is horrifying; it is beautiful yet awesome; magnificent yet dangerous. It has been called everything from 'incredible' to 'accursed'. Admiral Byrd who pioneered aviation in the Antarctic, wrote as he flew over the Axel Heiberg Glacier, 'an air of drama foreshadowed every mile of progress; north, south, east and west, everything was untrodden and unknown. There was the ice age in childhood. Here to was great beauty, in the way that things which are terrible can sometimes also be beautiful.'

As an enormous unknown, the Antarctic seems to emit an aura of power: man is tolerated being there — but only just! One always has the feeling of being very small and the Antarctic always has the upper hand. Some of the dangers which exist include:

- Glaciers and crevasses — glaciers too numerous to mention and crevasses deep enough so as to not be able to retrieve that which (or who) falls to the bottom.

USCGC *NORTHWIND* backing and ramming through ice four feet thick. Mt. Erebus in the background is 12,477 feet high and nearly 40 miles distant.

- Sastugi — frozen waves of snow terraced ice. Extremely sharp edged and 'always' going in the opposite direction to that of one's intended travel.
- Blizzards — ice 'needles' flailing through the air seemingly attacking one's body.
- Cold — sufficiently cold for steel to become brittle, and then shatter if dropped. The coldest ever recorded was minus 127°F at Vostok Station in 1960.
- Wind — katabatic winds have been recorded in excess of 200 mph at Commonwealth Bay.
- Whiteouts — a phenomenon caused by light reflecting from ice to cloud to ice to cloud to ice etc. which causes a complete loss of surface definition, horizon and distance perception. Without vertical references, people tend to stagger and fall.
- Fire — because water is so scarce, fire prevention is of paramount importance.
- High altitude — the average height of the entire continent is 6,000 feet and lack of oxygen affects many travellers.

Some of the place names perhaps best describe what the early explorers thought of the area:

— Mount Terror,
— Devil's Ballroom,
— Cape Disaster,
— Cape Catrastophe,
— Hell's Gate,
— Satan's Glacier.

Most explorers saw great beauty there as well. Sir Edmund Hillary, on his ascent of the Shelton Glacier in 1957, wrote

'I looked out on a strangely beautiful scene. To the south the sun was a molten ball of fire on the horizon and its rays brought into sharp relief the jagged sastugi, and transformed their hills and hollows into a patchwork of flame and shadow. The sky glowed a delicate purple, while the great peaks standing all around us were dressed in crimsom coats. We were swimming along in a sea of glorious colour — and for a while I forgot the cold and discomfort.'

No matter what the early explorers thought of it, my real concern is what future explorers or travellers may think. For the crew of the proposed AAS, it will be a rough and boring time getting down there; a hard and cold task when there; and a long time getting back. In spite of all that, they will be able to see the Antarctic, live with it, experience it — and **that** is payment tenfold!

NOTE:

The quotations by Admiral Byrd and Sir Edmund Hillary are from *Antarctica*, 1st ed., by Charles Neider (Random House, New York, 1972).

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CANADIAN IROQUOIS CLASS ANTI-SUBMARINE DESTROYERS

by Alan Payne

The four helicopter destroyers of the Canadian *IROQUOIS* class are unique in the world. Although the first Canadian designed warship, the frigate *ST. LAURENT* was not completed until 1965, the Canadian Navy with their DDH-280 was the first Western Navy to complete an all-gas turbine warship. The *IROQUOIS* class are also the best anti-submarine destroyers available to NATO for service in the stormy waters of the North Atlantic. To date no other country in the British Commonwealth has designed and built any warships of the frigate or destroyer type; in fact the Royal Australian Navy has not designed and built any major fighting ship since its inception in 1911.

Design and Development

The Soviet Navy took a striking lead in warship design by fitting all gas turbine machinery in their DDGs of the *KASHIN* class, the first of 19 being completed in 1962. In Britain the small frigate *EXMOUTH* had her turbines replaced by gas turbines in 1968 in order to carry out extensive tests prior to the installation of gas turbines in the County class destroyers as an addition to the normal geared turbines. The first all gas turbine ships in the Royal Navy were the Type 42 destroyers, the first of which, the *SHEFFIELD* completed in 1975.

In the early 1960s, it became evident that all warships designed for the next decade would have to carry missiles for air defence. This requirement, coupled with demands for greatly increased endurance and generally more versatility, demanded a considerably larger ship than the *ST. LAURENT*.

During the period 1960-64 over 30 sketch designs were produced, ranging from 1500 ton frigates to 10,000 ton helicopter cruisers. The most promising design proved to be a 4,000 ton general purpose destroyer capable of a versatile range of armaments including missiles. This design was developed in detail, but was not accepted in the end due mainly to the financial climate and the expense of the missile system. However it provided much of the design experience for the DDH-280 class.

The proposals had been made to power the 1964 general purpose frigate with normal turbines and to fit both short and long range missiles with a twin 5 inch gun forward; the ship was also to carry a small helicopter. The full load displacement of 3,800 tons was nearly a thousand tons heavier than *ST. LAURENT*. In spite of high freeboard, the profile of this design had a most clean and pleasing appearance with the after end almost bare and with no hangar.

It was fortunate that the 1964 frigate design did not materialise, as in 1964 revised Staff Requirements were formulated for a bigger and more advanced helicopter destroyer. Using the experience gained with the previous design, the work progressed rapidly over the next eighteen months. The overall length of the new design was ten feet longer and the beam two feet more than the previous one, but it had seven feet more depth. The displacement was 4,100 tons.

A summary of the more important features of the DDH-280 has been given by the designer Captain K.P. Farrell, RCN:[1]

> 'A clean overall design in our tradition to maintain a good speed in the North Atlantic. Pressurised gas citadel for defence against nuclear fallout, bacteria, and chemical agents; sophisticated acoustic and shock measures for maximum anti-submarine warfare effectiveness; Canadian standards of accommodation including maximum facility for carrying personnel under training; advanced form of gas-turbine plant both for propulsion and electric power;

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Alan Payne is a retired naval architect who has written extensively on naval subjects. He served at the Admiralty for most of World War II. He is the co-founder of the Naval Historical Society of Australia, an Honorary Life Member of the Society and editor of the *Naval Historical Review*. He is the author or co-author of the histories of RAN ships published by the Naval Historical Society — including HMAS *Australia* 1928-1955 and HMAS *Canberra*.

bridge control of propulsion plant; operational flying facilities for two Sea King helicopters; advanced integrated hull and towed sonar sets; surface and air weapon system (SAWS 280), combining Dutch radars and fire control, an Italian gun, a Canadian missile launcher; American missiles and a Swedish illuminating rocket launcher; advanced intership, aircraft and data link communication system; a digital data command and control system (CCS 280) to integrate ship control, aircraft control, weapons control, radar, sonar and communications data and to present processed results on the command consoles'.

About the only major item that Captain Farrell did not mention in his summary was the Flume type anti-roll tanks used to stabilise the ship during flight operations. Fin type stabilisers were not fitted because they are not effective at slow speeds and it was considered vital for a helicopter carrier to have a reliable means of stabilising the ship at low speeds. A tank stabiliser has several advantages over external fins: it is simpler, cheaper and can also be used if required as a reserve fresh water tank.

Captain Farrell also wrote —

'This combination of systems has been a large task for our relatively small number of engineers, but we firmly believe that a nation, like its individuals, only learns by doing. I estimate that this design has occupied the energies of some 1,000 designers and planners both in the Service and under contract for about six years. The manufacture of equipments and building the ships represents the efforts of some 6,000 craftsmen for, say, three years. All told, this comprises an invaluable stimulation of technological knowledge in Canada. Thus we will not only improve our capability for the defence and surveillance of our coastal waters, but we will also be able to make better positive contributions to our allies, and it has undoubtedly increased the competitive strength of our Canadian industries.'

Weapon Systems

The offensive and defensive weapon capability of the DDH-280 class is provided by the most cosmopolitan weapon and control installation ever fitted to a warship. The Canadian Sea Sparrow point missile system combines the American Sea Sparrow missile with a launching system designed by Raytheon Canada; the dual purpose automatic 5 inch/54 gun is an OTO Melara of Italy and was the first planned installation of this weapon to go into service; the gun/missile control system is the Dutch M22; the flare rocket launchers are from the Swedish Bofors company. The anti-submarine weapons comprise two Mk 32 triple torpedo launchers, firing Mk 46 torpedoes and a single triple-barrelled Mk NC-10 A/S mortar. Last but most important of the A/S weapons are two CHSS-2 Sea King helicopters.

No Navy in the world has matched the helicopter-destroyer concept, pioneered by the Canadians with the result that the DDH-280 carries two large helicopters. This has only been made prctical by the Canadian developed 'bear trap' haul-down system, which pulls the helicopter down onto the flight deck. The system incorporates two shuttles, each operating in its own traversing trough recessed in the flight deck, which incorporates a rapid securing device to capture the helicopter immediately on touchdown.

Canadian Seaking helicopter using the Bearcat recovery gear onboard a *IROQUOIS* class destroyer.

HMCS *IROQUOIS*

— by courtesy of Jane's Fighting Ships

Machinery Installation

The commissioning of HMCS *IROQUOIS* saw the entry into service of the first all gas turbine ship in the Canadian Navy and the first in any Western Navy. The four destroyers of the class are powered by a COGOG propulsion system on two screws, comprising two Pratt and Whitney main engines each of 25,000 shp and two units as cruising turbines each of 3,700 shp.

In order to give a deep load speed of 29 knots, the main gas turbine produce 50,000 shp at 4,200 tons displacement. At 3,600 rpm the gas turbines are coupled to two five-bladed controllable-pitch propellers through a double-reduction gear box. The cruising turbines are mounted outboard of the main engines to minimise the support structure weight. When running on the main engines with the shaft speed of 230 rpm and 133 rpm on the cruise turbines, the maximum speed is 20 knots.

The engines and propeller pitch are capable of being operated by remote control from either the bridge or the machinery control room and also at local operating positions. Control functions are transmitted pneumatically and monitoring is processed electrically by a digital system which also monitors the auxiliary machinery.

The principal auxiliary machinery consists of three 750-Kw gas turbo generator sets and one 500-Kw diesel generator set. Primary electrical power is supplied by three single shaft gas turbines, each driving a 750 Kw generator, and a 500 Kw unit driven by a diesel engine. One of the gas turbine-powered units is situated forward, above the waterline for emergency duty, and the other two turbo-generators and the diesel-engined unit are arranged in the auxiliary machineroom. The two gas turbo generators in the auxiliary machinery room are each equipped with a waste-heat boiler, which improves the overall efficiency. These waste-heat boilers provide the steam generating plant.

Displays and Sensors.

The heart of the ship is the Litton CCS-280 Command and Control System, the first operational micro-electronic tactical data system for shipboard situation assessment and control — this resembles the NCDS fitted in *PERTH*. The CCS-280 system provides an automatic and fast data collection, processing, recording, display and routing for all necessary target data from communicating links and sensors (radars, sonar, radio etc.).

Principal Particulars

Length overall	425ft 10 in
Length between perpendiculars	398 ft 0 in
Beam	50ft 0 in
Depth	37ft 9 in
Design draught	14ft 6 in
Designed Load Displacement	4,200 tons
Complement	310
Armament	One 5-inch DP Oto-Melara gun
	One "Limbo" Mortar
	Two triple A/S torpedo tubes
	Two quadruple Sea Sparrow missiles
	Two A/S Sea King helicopters

Overview

Four destroyers of the DDH-280 class were built, *IROQUOIS*, *HURON*, *ATHABASKAN* and *ALGONQUIN*, all except the last being named after Tribal class destroyers of World War II. All four destroyers were laid down in 1969 and completed 1972/73. *IROQUOIS* was the first to be completed in July 1972.

'Although the DDH-280 class is 10 feet shorter than the DDG-2, the Canadian ships are three feet wider, do not have the pronounced sheer forward, and tend to be slab-sided,' wrote an RAN observer.[2] 'The impression of greater enclosed volume above the waterline is primarily caused by the large double hangar abaft the Vee-ed funnels, but once onboard I realised how roomy *ATHABASKAN* is. For those of us familiar with the struggle of a fore and aft transit of the DDGs or early RIVER-class, *ATHABASKAN's* main passageway seems like the Warringah Expressway!'

'Spaciousness is the dominant impression one gets of the DDH-280. That physical contact game "Living in a DDG" is an unpleasant memory in the DDH; all the living and working spaces seem large by comparison and, even with the full helicopter detachment embarked, there are 55 fewer souls competing for the space'.

The American DDGs are excellent general purpose GM destroyers and have been built for West Germany and Australia, but their ASW capabilities were very limited until the Australian ships were fitted with Ikara ASW missiles. Accommodation in the DDGs is rather cramped and no helicopters are fitted.

The DDH has almost the same dimenas the Dutch frigate *KORTENAER* and the same type of machinery and of the same power. The main differences are due to their different roles. While the DDH carries two Sea King helicopters, a 5 inch automatic gun, an ASW mortar, six torpedo tubes and eight Sea Sparrow missiles the *KORTENAER* carries a 76mm automatic gun, six torpedo tubes, four Sea Sparrow missiles and at present three Harpoon surface to surface missiles, which may later be increased to eight.

The Canadian DDH 208 is certainly one of the three best ASW destroyers or frigates in the world. The choice among gas turbine driven ships would appear to lie between the 7,000 ton American *SPRUANCE* class armed with ASROC and triple torpedo tubes; the French C-70 class which carries two helicopters, ten torpedo tubes and apart from missles has also variable depth sonar in addition to bow sonar; the very fast Italian *LUPO* class of 2200 tons standard displacement, which carries a helicopter, Sea Sparrow missiles and also eight surface to surface missiles and six torpedo tubes as well as a 5 inch gun. As regards frigates or destroyers with conventional turbines, the British *LEANDER* is by far the best ASW ship of her tonnage. Some *LEANDERs* have been rearmed to take the Australian Ikara which will give them a most powerful anti-submarine armament, as in addition to Ikara, the ships will have an ASW helicopter and a mortar.

The Canadian *IROQUOIS* Class scores heavily in the versatility of its anti-submarine capabilities. It can operate both helicopters at the same time and is the only GM destroyer that can operate two large helicopters like the Sea King. It has a 5 inch dual purpose automatic gun, two triple torpedo tubes, a "Limbo" mortar and both bow and stern sonar. In addition it has quadruple Sea Sparrow missiles. Designed for the North Atlantic, it must be considered supreme in its class.

NOTES:

1. *Navy International*, September, 1972.
2. *Navy News*, 16 January, 1976.

JOURNAL BACK ISSUES

Stocks of the following back issues of the Journal are available:

Vol 1 No 2 November, 1975
Vol 2 No 1 February, 1976
Vol 2 No 2 May, 1976
Vol 2 No 3 August, 1976
Vol 2 No 4 November, 1976
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Vol 5 No 1 February, 1979
Vol 5 No 2 May, 1979
Vol 5 No 3 August, 1979
Vol 5 No 4 November, 1979
Vol 6 No 1 February, 1980

Vol 1 No 1 (August, 1975) and Vol 3 No 1 (February, 1977) are out of stock.

Back copies may be purchased from the Institute at $2.50 each, which price includes postage. Write to the Treasurer, Australian Naval Institute, PO Box 18, Deakin, ACT, 2600.

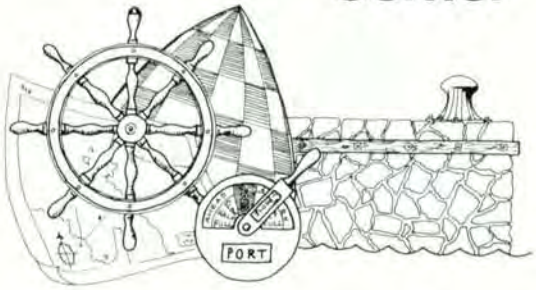
HMAS FREMANTLE — TWO GENERATIONS

HMAS *FREMANTLE* (I) arriving in Sydney to pay-off May 1958

HMAS *FREMANTLE* (II) on sea trials off Lowestoft UK late 1979

— Defence Public Relations photograph

Shiphandling Corner



SHIPHANDLING WITH A BOWTHRUSTER

During my sea ride, before taking command of HMAS *JERVIS BAY*, I asked my predecessor what were his thoughts about bowthrusters. His reply was 'everyone should have one': a sentiment with which, after experience, I wholeheartedly concur.

Bowthruster Details

JERVIS BAY is fitted with a Stone-Kamewa, motor-driven, bowthruster. It is an electrically-driven, constant speed, variable pitch propeller (approximately six feet in diameter) — located 20 feet forward of the Bridge, in a cross-tunnel six to seven feet below the waterline (see photograph 1). An interlock system on the main switchboard prevents power being available for the thruster until three alternators are on load (the ship has four alternators). Normal useage current for the thruster is restricted to 770 amps (415 volt, 50 cycle, 3 phase) producing 650 HP at 290 r.p.m. If the current drain exceeds 1000 amps for more than five seconds there is a preferential breaker drop-off sequence to enable the bow thruster availability to be protected.

An instrument panel situated on the Bridge provides master control for starting/stopping. The panel provides indication that power is available and that the lubricating oil pump is running and pressure is adequate (see photograph 2). The thruster motor will not start if the lubricating oil pressure is insufficient, or if the propeller is not in zero pitch. A local control panel is situated in the bow thruster motor compartment — located above the thruster.

Manoeuvring control of the bow thruster is by simple joystick on an operating pedestal.

Port side view of cross tunnel and propeller

There are three parallelled pedestals, located on the Bridge: one, centre-front and one on each wing. The bow moves in the direction of the joystick control pointer; an ammeter registering current and horsepower (see photograph 3) is fitted on each pedestal.

Shiphandling

The effectiveness of the bow thruster in *JERVIS BAY* is maximum when the ship has no fore and aft movement: the limit is reached when speed through the water is 4-6 knots. The wind speed limit for effective use is about 20 knots.

The bow thruster, in effect, provides you with an in-built tug — without the disadvantages. It is a very effective aid to shiphandling; particularly when used in conjunction with (as in *JERVIS BAY*) twin propellors with twin rudders in stream. It permits a finely graduated response — at the time it is wanted. The delay of assessing the requirement, transmitting to a tug, waiting for the tug response and the consequent frustration, so oft occurring, of not getting just what you want does not occur.

You may say it takes all the skill out of shiphandling. Not so. Availability of a bowthruster does not degrade the shiphandling act or skill required: rather, it adds another dimension to the art, particularly with low / relatively low-powered ships. The bowthruster fitted in *JERVIS BAY* (bear in mind that at 7,100 tons, 445 feet in length, and with an average draught of about 18 feet, it is the fourth largest ship in the RAN) enables an independent approach to shiphandling that provides a real challenge. Such an opportunity is not granted the Captain of HMAS *STALWART*. For example — with her dependence on tugs in close manoeuvring.

Some of the uses for the bowthruster are:

- **to steer with** — moving ahead or astern it is extremely useful once steerage way is lost. Used in conjunction with the rudders at slow speed it is very useful particularly during a sternboard;
- **to move on/off a berth** — using the thruster in conjunction with main engines and rudders the ship can be walked sideways and by variation of amount of helm and thrust the attitude of the ship to the berth can be quite finely controlled;
- **to turn** — at rest the rate of turn can be increased significantly, or at slow speed a reduced turn can be achieved both of which are of particular value in very confined waters, particularly with a ship affected quickly by the wind; and
- **to control bow movement** — during any very slow speed evolution (again, particularly with a ship which has high windage) such as:

  anchoring,
  weighing,
  securing to / slipping from a buoy,
  recovering a danbuoy,
  taking up / casting off a tow,

  the thruster enables fine control over bow movement.

Availability of a bowthruster reduces the shiphandlers' dependence upon tugs to a minimum. In 14 months, *JERVIS BAY* has connected a tug on only four occasions: one was because of a breakdown of the thruster and one was when, with 30 knots of wind pushing the ship off whilst berthing at Station Pier in Melbourne, two tugs were connected. This is not to say that a requirement for tugs does not exist at all. It would be imprudent for a ship the size of *JERVIS BAY* not to have a tug available. The normal practice is to have one tug stand by off the berth for call in if necessary.

Bridge bow propeller instrument panel

Some Thoughts to Ponder

There are, therefore, two main factors to consider:

- The availability of a bow thruster, in reducing dependence upon tugs, reduces asso-

ciated costs. In the case of *JERVIS BAY* it is 50%, and when you consider such costs as:

Bunbury (November 1979) — one tug standing by for berthing and unberthing cost $1,126;

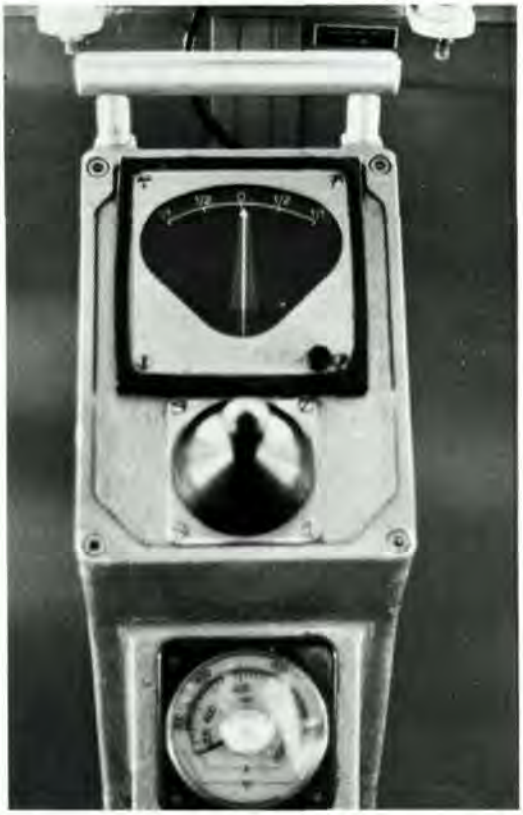
Fremantle (November/December 1979) —three tug bookings at a total cost of approximately $3,000; and

Hobart (January 1980) — one tug standing by for berthing and unberthing cost approximately $2,000;

then the bowthruster is without a doubt a cost-reduction piece of equipment.

- The availability of a bowthruster gives the ship-handler (certainly this shiphandler) confidence when having to manoeuvre without tug availability.

Leading from this point, it follows that a bowthruster could be useful in any ship, and that in ships of comparable or greater size than *JERVIS BAY* its value is unquestionable. I believe that for *any* new construction, serious consideration for fitting of a bowthruster should be mandatory. For example, I consider that any intent to build the AOR *without* a bowthruster would be an exercise in futility. I trust such a situation is not seriously contemplated. I also consider that fitting of a bowthruster in single-screw destroyer or equivalent is sound thinking. In this I should remind you that when examining the new FFG design, the letters A.P.U. *do not* stand for 'Bow Thruster': the Auxiliary Propulsion Unit is designed for a purpose, and it is *most suitable* for that purpose alone.



Bridge operating pedestal

Although I would not entitle this article 'In defence of the bowthruster', there may be some who, reading my views expressed above, consider it this way. Should this be so, I refer them to Proverbs Chapter 3 verse 27.

C.J. LITTLETON

Nobody asked me, but...

THE DEATH OF JUDAS

Now that Chaplain Costigan (Vol. 5 Number 4) has set Judas (Vol. 5 Number 2) straight on the role of a chaplain in the RAN, I think it is about time for a young sailor on the other side of the fence to cast a few lines.

Having spent four and a half years in the Navy (three and a half years under training) and joining at the early age of 16 years, the need for moral guidance and counselling has, for me, been great! The Navy is a large and frightening world for a newcomer, especially one just out of school who has not yet experienced the cruelty of the 'outside world'. In its foresight, the Navy appoints its Divisional Officers to the task of parental fostering of new recruits. However, this task usually leads to the educating into the Naval environment and does not cater for the

individual person's needs as far as moral and spiritual guidance are concerned.

Fortunately in its wisdom, the Navy provides us with the services of a Chaplain, whose sole purpose is to deal in the lives of human beings as individuals without primary concern for the Navy, an 'expert' who can be confided in by members whether they be 'rawbones' or salty tars.

I shall not endeavour to outline all the tasks that a Chaplain performs, however, two specific ideas come to mind; marriages and deaths. Concerning marriage, a Chaplain is provided as a consultant, and it's nice to know that he is available, if problems occur (and they always do). With regard to death, be it member of family, notification by the member's Chaplain is a much more softened blow than that of a Divisional Officer or telegram; that would be rather like a policeman knocking on your front door at 4 o'clock in the morning, I should imagine.

In his role as a priest, the need of a Chaplain warrants little explanation to the everyday Christian. In my instance, the visit from the 'holy helo' (they usually come by helo-transfer) at sea is a much needed and looked-forward to chance to boost our faith and to receive the Blessed Sacrament(s). This irreplaceable chance to take Mass does not often occur, and without it our faith would not be complete.

So Judas, the answer lies in the fact that the Navy DOES want and need 'our' Chaplains, which I'm sure is not a sweeping generalisation.

G.B. CANNING
ABETW HOBART

CHAIN OF COMMAND

- **ADMIRAL**
  Leaps tall buildings with a single bound
  Is more powerful than a locomotive
  Is faster than a speeding bullet
  Walks on water
  Gives policy guidance to God.

- **CAPTAIN:**
  Leaps short buildings with a single bound
  Is more powerful than a switch engine
  Is just as fast as a speeding bullet
  Walks on water if the sea state is less than 11
  Talks to God.

- **COMMANDER:**
  Leaps short buildings with a running start and favorable winds
  Is almost as powerful as a switch engine
  Is faster than a speeding DD
  Walks on water in indoor swimming pools
  Talks with God if special request chit is approved.

- **LIEUTENANT COMMANDER:**
  Can barely clear Quonset Huts
  Loses tug-of-war with locomotive
  Can fire a speeding bullet
  Swims well
  Is occasionally addressed by God.

- **LIEUTENANT:**
  Makes high mark when trying to leap buildings
  Is run over by locomotives
  Can sometimes handle a gun without inflicting self-injury
  Dog paddles
  Talks to animals.

- **SUB-LIEUTENANT:**
  Runs into buildings
  Recognises locomotives two times out of three
  Is not issued live ammunition
  Can stay afloat if properly instructed in the use of the Mae West
  Talks to walls.

MIDSHIPMAN:
Falls over doorsteps when trying to enter buildings
Says, "Look at the Choo-Choo"
Wets himself with water pistol
Plays in mud puddles
Mumbles to himself.

- **WARRANT OFFICER:**
  Lifts buildings and walks under them
  Kicks locomotives off tracks
  Catches speeding bullets in his teeth and chews them up
  Freezes water with a single glance
  He is God!

ANON

SHIPS AND THE SEA

SAILING VESSEL *PREUSSEN*

Built in 1902 the five masted full rigged ship *PREUSSEN* is considered by many to be the ultimate development in sailing ships, even the greatest ship ever built.

PREUSSEN was owned and operated by the Laesz Flying "P" Line of Hamburg and employed mainly on the Iquique to Hamburg run with nitrate as the cargo.

The best speed recorded by *PREUSSEN* was a shade over seventeen knots but her main feature was the fact that she could lift large tonnages of cargo at an average service speed of 6 to 8 knots.

Consider these statistics:

A steel built ship of length 407 ft 9 in (433 feet including the bowsprit) and a beam of 53 ft 7 in. Displacement was over 11,000 tons and cargo capacity 8,000 tons. Each of the five masts was some 200 ft tall with six square sails per mast. The total sail plan was 60,000 square feet of canvas made up of 30 square sails and up to 18 fore and aft sails. (Of note is the fact that the main yard was over 100 feet in length).

The end came to *PREUSSEN* in November 1910 when she was involved in a collision with a steamship and subsequently wrecked on the South Foreland. Captain Alan Villiers described *PREUSSEN's* end thus:

"Her career was brief, for a blundering steamer, unable to judge speeds or to comply with the International Rule of the Road, knocked her down at the Channel mouth when she was outward bound".

Finally, three more points to consider:

Firstly — the total crew of *PREUSSEN* was 47 officers and men.

Secondly — Her best consistent sailing effort was during a voyage to the Far East. 3020 nautical miles in eleven consecutive days. That's an average speed of almost 11½ knots!

Lastly — tank tests conducted on a model of *PREUSSEN* in later years showed that to achieve a speed of 17 knots her sails developed the equivalent of 6000 horsepower.

R.J.R. PENNOCK

The mighty *PREUSSEN*

BOOK REVIEWS

BATTLESHIP. By Martin Middlebrook and Patrick Mahoney. Penguin Books. First published 1977, this edition 1979. Recommended retail price $4.95.

When, or — for the benefit of optimists and defence academics — if, there is next a major war at sea it is quite certain that great ships will be destroyed.

The truth behind their destruction will lie in a balance of material failure and human error, technical mistakes and faulty past equipment decisions. Strategic blunder or misjudgment may play a part. Luck will certainly intervene at some stage, to greater or lesser degree. I suspect that history will continue to find it difficult to ascribe the true balance of causes; a sea battle is hard to reconstruct in retrospect, and whilst the errors of the vanquished magnify, the fortunate moments of the victor are usually passed off lightly.

BATTLESHIP is an honest, dispassionate and thoughtful account of the loss of the *PRINCE OF WALES* and *REPULSE*, seen primarily through British eyes. Apart from those who do not trust a history unless it is dull and those who are bored by anything less superficial than anecdotes, it should grip readers with an interest in fighting ships and maritime war. It is convincing and exciting. Relevant pre-war events are summarised, as are the Japanese moves and motives before Pearl Harbour. The context of Malaya and Singapore is set. The living entities that were *PRINCE OF WALES* and *REPULSE* are firmly established, and the weeks leading up to their destruction within the space of an hour achieve clarity, pace and inevitability. The aftermath is explored. The book is well constructed and complete.

The key to its tone is in the introduction, in the sentence '... An attempt will also be made to tell the reader not just what happened ... but what it was like for the men involved'. Woven through in harmony with, and without interruption to, the narrative are participants' own accounts of particular events or moments as they saw them.

Because people are allowed their full importance many things are brought into a focus which is absent from accounts which are preoccupied with events alone. For example, both *REPULSE* and *PRINCE OF WALES* had for two years been fully committed in war; most of that time in the dour surroundings of the North Atlantic. Barely ten weeks before arriving in Singapore, *PRINCE OF WALES* had fought a convoy through the Mediterranean to Malta. Yet when they arrived in Singapore, the two ships' companies went ashore to an entertaining tropical city geared for enjoyment and remote from war. They must have relaxed very quickly and quite comprehensively, as ships' companies still do, but then with more cause. A week later they were suddenly in a different war and more than a quarter of them were dead.

The different spirit evident in the two ships is perhaps the most fascinating aspect of the book. It is treated sensitively and without judgement: *PRINCE OF WALES*, forbidding, well armed and new, but with an unlucky reputation in the Fleet and giving an impression that there was a lack of human cohesion, and a remoteness in authority; *REPULSE*, a well loved obsolescent warrior without adequate fire control and weapons but with a prewar ship's company meshing smoothly and happily together. The vulnerability of *REPULSE* seemed inevitable but *PRINCE OF WALES* concluded her ill fortune by the mortal nature of her early damage and the consequential quick loss of effective fire power.

Both ships sank so this made no ultimate difference. But even though *REPULSE* had higher casualties, I was left with the feeling that more men in *PRINCE OF WALES* were alone when they died.

It is not irrelevant that the Commander of *PRINCE OF WALES* whilst his ship was being abandoned 'was attempting to repair the steering ... and was last seen continuing to work alone at this impossible task'. Nor is it without significance that the *REPULSE* ship's company were clearly often told from the bridge what was happening, but that the accounts of *PRINCE OF WALES* survivors commonly indicate that their memories were limited to the confines of their working space and ultimate escape routes.

The book is generous with personalities. It pays tribute where it is due but makes no facile judgments. Admiral Phillips for this reason remains to some extent an enigma. His credentials were impeccable. Clearly he was a brilliant Staff Officer and planner, yet in his first action as a Commander he failed. There are two photographs of him and in each he is expressionless. It seems likely that he was autocratic and a hard master to argue with. If right, his determination could have assured success against severe odds. If wrong, single minded and autocratic direction unleavened by doubts or the advice of others can lead to catastrophe. Perhaps on this occasion it did. The enormity of the professional disaster for which he was totally responsible must have crushed an intelligent man in the last moments of his life but there is no record that he gave any verbal sign or lost his impassivity.

The description of the action occupies about a third of this 350 page book. It is a tribute to the construction of the narrative that even though it covers both British and Japanese movements, incidents and cameos, there is no perceptible digression from the main thread, or awkwardness in returning to it.

There are sufficient track charts, and they are clear. The few photographs are enough to remind you of the power of the ships and put faces to the main participants, and a high proportion were taken during the action.

Neither of the authors is naval, nor do the credentials of either stem from expertise in naval history, but they do not put a foot wrong. Their absorption with their subject is clear and for me at least they have succeeded brilliantly. The book is genuinely difficult to put down.

If I have one criticism it is that the title is ascribed in the introduction to the conventional wisdom that the battleship was a dodo by 1941. Here we come back to the luck I mentioned in the second paragraph. If the monsoon overcast had in the critical hours been as heavy as it often is in December, if the Japanese had not diverted a squadron of torpedo bombers from the Philippines, if *INDOMITABLE* had not gone aground half a world away, if the Japanese covering force had been seen and brought to action when at a range of five miles, if the force had got amongst the Japanese transports..... A lot of 'ifs', and none went the right way. Perhaps they did not deserve to: *PRINCE OF WALES* and *REPULSE* were in the wrong place at the wrong time by deliberate decision. In such circumstances any type of ship is vulnerable; strategists, designers and planners cannot assure invincibility.

I really do recommend this book.

BRIAN SPARK

THE WIND COMMANDS: SAILORS AND SAILING SHIPS IN THE PACIFIC. By Harry Morton, John McIndoe, Dunedin and University of British Columbia Press, Vancouver, 1975. xxvii, 498 pp. Illust. Bibl. Index. NZ $31.50.

Rum, sodomy and the lash, said Winston Churchill, were the traditions of the Royal Navy in an aphorism beloved of cynics. Here is a book for the cynical, the romantic and the *detached scholar, which comes as close to being an 'every*thing you ever wanted to know' book about man's love-hate relationship with the sea as is ever likely to be put between *two covers.*

The Wind Commands is a history of men at sea, and of the technologies and techniques which they devised, borrowed *and discarded to take them to sea, and bring them home* again. Its scope is ambitious, from primitive rafts to the famous Joseph Conrad, from caravels to windjammers; and *its successful accomplishment has established Dr Harry* Morton, Associate Professor of History in the University of Otago, New Zealand, as an authority on maritime history.

The book is not merely authoritative (industry and longevity can accomplish that); it is nothing less than a masterpiece, for Dr Morton has achieved the unusual feat of producing an authoritative, accurate, and comprehensive book which is delightfully readable. It can be read with both pleasure and interest whether one's approach is from cover to cover, or to browse through individual chapters chosen at random. In a style which entertains as it instructs the author explains the many variables which contribute to successful voyaging: ship design, rigging, personal relations, navigation, ship maintenance, nutrition and health at sea to mention the most obvious. All of these things were, of course, changing; voyaging in the sixteenth century was a radically different experience from voyaging in the nineteenth and it is the historian's job to record, understand and explain that evolution, and relate it to the societies in which it took place.

This, of course, is what maritime history should be. But why the Pacific, so far from the centres of power which contributed most to nautical evolution in the last millenium or so? The answer is two-fold: first, the Pacific has seen almost every kind of watercraft devised by mankind; most of these were known elsewhere, some were not. Arab dhows and galleons belong to the Pacific just as much as does the outrigger canoe. Second, the Pacific Ocean, covering one third of the earth's surface, is arguably 'the most awesome of all the things in nature' and its very size posed problems for seafarers which were not known elsewhere, or at least were known on such a smaller scale as to amount to a qualitative difference. The Pacific Ocean itself had an important role to play in the definition and solution of seafaring problems. For example, scurvy in the Atlantic was a nuisance: debilitating and incapacitating. In the Pacific it was a scourge, a threat to the survival of every expedition. Its prevention was imperative. Anson lost about half of his men to scurvy in the 1740s, and in his battle with the Spanish Manila galleon only 7% of his men were fit to fight, under a very generous criterion of fitness. One way to reduce the toll of scurvy was to make land, but until position at sea could be fixed accurately there was a fair element of guesswork in land finding. A wrong guess by Anson kept his men at sea for nine extra days during which time seventy or eighty of them died. A chronometer would have saved their lives as effectively as a cargo of oranges.

Every problem was magnified by the vastness of the Pacific: discipline, command, morale, rigging, shipworm, rats, lice, food, the weather ... so that it is true to claim that the history of the Pacific is the history of the sea.

Many of the problems were solved theoretically decades before a practical solution was found. With longitude the difficulty was not in understanding the principle, but in constructing a chronometer which was both accurate and robust. Conversely, some sailors knew in 1600 that citrus fruits were an antidote for scurvy, yet Cook, who did not lose a man through scurvy had little faith in citrus. His lack of enthusiasm discouraged its use.

Dr Morton has not only brought a breadth of vision to his subject which makes it comprehensive and comprehensible, but he has also built it on a solid foundation of detailed knowledge. Who knows, for instance, what the New England *whale-men owed to the Basques, what principle of construc*tion does a Viking long-ship share with a Maori canoe, and how do both differ from a Chinese junk? How does a barque *rig differ from a ship rig? What is a main lower topsail?* Was hair an effective treatment for shipworm?

Detailed fact and sweeping sythesis are allied in this *book. Its structure is logical and coherent, its exposition* a model of clarity, a bridge over the gap between specialist and layman. The text is generously supported with illustrations *and diagrams, and a glossary of nautical terms for which the* layman will be grateful, and from which a yachtsman might learn a thing or two.

Books of this quality are rare, and one cannot ask much more of an author than Dr Morton has provided here. In its field this book is preeminent, and in 1976 won the Sir James *Wattie New Zealand Book of the Year Award. In Morton's* own assessment, 'What I had intended to show was the beauty, grace and ingenuity built into the ships and canoes; *what I have learned was the extent of men's courage and* their will to live .... Although the wind still commands wherever it can reach, men have learned that — within obedience *— they can win a subtle victory.'*

This book is a credit to its publisher, a triumph for its author, and an adornment to the awareness of anyone interested in the history of mankind and of the sea.

I.C. CAMPBELL

(The reviewer is a historian at the University of Adelaide, and has specialised in Australian and Pacific History.)

LAST QUARTER — THE NEXT TWENTY FIVE YEARS IN ASIA by Malcolm Booker. Melbourne University Press 1978. pp. 228. $14.80.

I expect it is a bit unfair to the author to review a book some fifteen months after its publication which, among other things, forecasts the political, economic and strategic circumstances which are likely to exist in Asia and the Pacific in the next twenty five years. There have been some significant changes to the strategic environment already in the region during these months, which Malcolm Booker did not predict. Nevertheless, in his latest book, *Last Quarter*, Malcolm Booker has endeavoured to set the likely strategic scene in Australia's area of interest and to recommend economic, defence and foreign policies best suited to Australia's interests in these circumstances.

For the most part, I thought the 'regional' chapters in his book were knowledgeable and informative, and the postulations well argued and generally credible. The increasing power and influence of the Soviet Union is undeniable and the suggestion that our security is inescapably bound up with our neighbours in South East Asia cannot be refuted. His 'if rape is inevitable lie down and enjoy it' philosophy, however, is totally unpalatable to me and, I suggest, to most of the nation, and his South East Asia Collective Security suggestion, fraught with problems which he has not identified and which would be unlikely to ever eventuate without a superpower partner.

I think most readers will find much to agree with in the chapter entitled Land of Missed Opportunities which looks at the economy of the country and compares Australia's situation to Sweden's, but I found little in his chapter on Defence to suggest that Mr Booker understands very much about this subject, particularly Naval matters; he advocates the abandonment of the Naval Base at Cockburn Sound and yet wants flotillas of submarines and destroyers able to be summoned quickly to investigate signs of hostile activity and intervene if necessary; he propounds strongly forward defence and yet considers that the *MELBOURNE* or a replacement carrier a conspicuous extravagance.

In summary, *Last Quarter* is a readable and generally interesting book, but I doubt it has or will contribute much to Defence or Foreign Policy debate in this country.

JOHN MERRILLEES

PORTRAITS OF POWER. A selection of articles by writers of the New York Times on some of the men and women who have shaped the twentieth century. Compiled by Jeremy Murray-Brown. Octopus Books Limited, 1979. Recommended price $9.95.

Jeremy Murray-Brown has compiled a collection of essays on nineteen people who have helped shape the twentieth century. The subjects of the essays are in order, Hitler, Churchill, Gandhi, Roosevelt, Stalin, Truman, Hirohito, Franco, Adenauer, de Gaulle, Eisenhower, Tito, Nasser, Ben Gurion, Khrushchev, Kennedy, Elizabeth II, the Shah of Iran and Mao Tse-Tung. The authors include such well known political journalists as Drew Middleton, Turner Catledge and Harrison E. Salisbury. The book is well illustrated with photographs and contemporary press clippings.

The essays are arranged in an order which brings out the dramatic interaction of men and events upon each other: 'like actors in a play each one has his role, his moment of destiny as it were, which determines the timing of his appearance' (Preface). One theme which weaves its way through much of the book is the demise of the British Empire.

Each author attempts to trace the circumstances and motivations which caused the rise to power of their subject and to highlight prominent incidents which reflect the style of leadership and the manner in which power was exercised. They are not comprehensive biographies, indeed they tend to be superficial, but they do comply with the title of the volume — *Portraits of Power* — and collectively they provide an interesting and easily read 'potted' history of the period between the end of World War I and the present.

In the preface, Jeremy Murray-Brown defines political power as the power of rulers of all kinds: 'Kings and queens, presidents and politicians, pontiffs and mullahs, generals and general secretaries, the power of the assembly and the power of the mob. Political power is that which is recognised with the eyes as distinct from the power of the intellect or the power of the spirit'. The essays illuminate the wide differences in background and method of operation of each individual. The author shows that a common denominator is that acquisition of power is a matter of choice and that no one comes by power accidentally or holds it without a purpose. That those who pursue power find good reason for doing so, and, for the most part, they believe in themselves. That ultimate power, such as is exercised by totalitarian states or by almost any state in time of war, recognises no distinction between right and wrong, truth and falsehood, but only between victor and vanquished.

Portraits of Power is easily read and provides useful sketches of how power has been obtained and used by contemporary personalities. The sketches highlight many interesting and little known facets of the portrayed persons, their intentions, their beliefs and their actions. Due to the superficial coverage the book gives to the individuals it cannot be classed as a reference book but would be a handy addition to a home library.

BRIAN WILSON

NAVAL POWER IN THE INDIAN OCEAN: Threats, Bluffs & Fantasies. By Philip Towle, The Strategic and Defence Studies Centre, ANU Press, Canberra, 1979. 121 pp. Recommended price $6.00.

When reading most books on Naval Strategy in the Indian Ocean one comes away with a reasonably clear picture of the activities and aims of the Soviet and US forces. The political aspirations of most of the littoral states are generally ignored except in the context of the superpower confrontation. In popular discussions the regional states are further neglected. To many western people, the Indian Ocean littoral consists of South Africa, the Gulf States, India and Pakistan. The other states are anonymously grouped under the title of the 'Third World'. Towle's book is important in that it places the superpower conflict in perspective and does not ignore the aspirations of the individual littoral states themselves.

Dr Towle is the Senior Research Fellow in the Strategic and Defence Studies Centre at the Australian National University. Towle's qualifications for writing this book are listed as: a PhD in War Studies from Kings College, London; working experience with the Foreign Office and Reuters; a lectureship at the Royal Naval College Dartmouth and the authorship of several works on military history and strategic studies.

After the introduction, Towle devotes a chapter to each of the following:

- The origins of the Indian Ocean problem.
- The interests and conflicts of the Super Powers.
- The Strategic Interests of the Littoral States.
- Arms Control in the Indian Ocean.
- Nuclear Problems.
- Conventional Arms Problems.

Towle identifies the competition for scarce resources and population pressures as the main cause of instability in the region and feels the superpower presence is incidental to the real threats to peace in the area. In fact he considers the superpower presence a stabilising factor. He points out that even the might of a US Amphibious Task Force could not seriously threaten the integrity of any but the smallest of the littoral states. Certainly they could reinforce and support friendly forces and inflict severe disciplinary actions on any states they wished. But as Britain found in the Dardanelles naval power alone is not enough to overcome land forces. The military strength in the region is quite high: there being more men under arms in the Indian Ocean littoral states than in the combined armed services of the Soviet Union and the United States. Certainly the superpowers could easily overwhelm any power in the littoral but not by using conventional naval forces alone. Here lies one of the major problems with Soviet occupation of Afghanistan as the Soviet army has direct access to the littoral states of Iran and Pakistan. This alters one of Towle's basic premises and, in doing so, puts the Afghanistan adventure into a terrifying perspective. Although the book was written before Afghanistan, it is still very useful in interpreting the possible ramifications of the event. The book also helps explain the rather intransient attitude of India towards military aid to Pakistan.

Towle's dealings with the foreign policies of the littoral states gives little hope for the establishment of an Indian Ocean Zone of Peace (IOZP). Efforts by Sri Lanka were frustrated by regional powers, particularly India and Pakistan. Some powers support the concept in order to abuse the superpowers, but their real interest is to dominate the area themselves. Witness India's objections to Australia's annoucement that her naval presence in the Indian Ocean would be increased.

Similarly, any hopes to ban nuclear weapons from the Indian Ocean is doomed to failure due to regional politics. The attitudes of India, Pakistan, South Africa and the black South African States effectively rule out any hope of a nuclear free zone irrespective of the policies of the superpowers.

Towle does not ignore the superpower's influence in the area and his chapter on their strategic interests and conflicts offers much interesting data and a few speculations on the effects of deployment of forces in the Indian Ocean during a maritime war between the East and West. He sees the Soviet surface units in the area as a disadvantage to the Soviets. In spite of the political advantage of surface ships in the crisis preceeding general conflict, the lack of concentration of force in the Atlantic during the critical period of mobilising US forces and supplying Europe can only be a disadvantage. The Suez and the northern straits to the Pacific can easily be blocked. The Soviet surface ships are left the task of sailing around Australia or the Cape of Good Hope. They can cut oil supplies for a brief period while their weapons last; however, this will not be as critical to the West during the first month of war as disruption of the Atlantic supply routes. After Europe is initially built up, he maintains the West could defeat the Soviet Indian Ocean forces in detail. This of course presupposes that general nuclear war is not declared immediately. Towle's arguments are logical and emphasise the Soviet problem of needing two distinct fleets, a problem

which cost them dearly in 1905. Given this purely maritime scenario, a role for the RAN is obvious: ensure the Soviet Indian Ocean squadron does not escape into the Pacific, protect the oil trade as far as able and later, to join offensive action in the Indian Ocean.

Naval Power In The Indian Ocean is not a large book but very little content is wasted. The book is well written and English English is used rather than the American version. Facts and figures are given as part of the text rather than in chart form which helps the arguments but lessen the value as a reference book. This is not considered a great deficiency as there are ample orders of battle available elsewhere. There are adequate footnotes from the references listed in the bibliography, the popular press and such journals as *Proceedings, India Quarterly* and the *South East Asia Review*. A select bibliography of 23 books is given. One major deficiency is the lack of adequate maps. There is one incomplete map which only identifies 18 locations. Unless expert in the geography of the region, the reader will require a large map or atlas to get the most benefit from the work. Apart from these omissions, a word on the presentation of the books produced by the Strategic and Defence Studies Centre is in order. These books are produced with a minimum of frills. In the one in question there are no pictures and all are produced as paperbacks. The result is a book which sells for $6.00 instead of the $14.00 plus normally charged for the smallest books on any topic of a scholarly or esoteric nature. The Centre deserves great credit for presenting books relevant to defence at such a price and criticisms of lack of maps must be read in this context.

In summary, Towle's book is an excellent publication for its price. Even those who disagree with some of the author's conclusions will benefit from the book and if its only benefit was to remind the reader that the regional powers have interests and policies of their own, it would be worthwhile. Towle achieves much more than this and at $6.00 his book is too good to miss.

S. P. LEMON

THE MILITARY AND AUSTRALIA'S DEFENCE. *Edited by* F. A. Mediansky. Longman Cheshire, Australia 1979. 165 pp. Recommended price $6.95.

Recently, I was attempting to explain to a long retired fairly senior naval officer the current procedure for equipment acquisition and project management. Naturally I introduced him to the idea of the Strategic Basis and Policy Objectives, and then, lest his interest wane, moved quickly onto capability documents, staff requirements, Five Year Defence Plans and the Defence Committee System. I plunged on into the techniques of project management — DP1's, Equipment Acquisition Strategies, newworks, computer studies, systems analysis, operations research. I was by this time in full oratorical flight, but the old war-horse's face was growing longer and blacker and fiery lights glinted in his eyes. Eventually, it all became too much for him and he exploded in a voice which rattled the rafters, 'Good Lord! And after all this, they expect you to be Naval officers too!'

He stormed off whilst I attempted to explain how many things are changing in the Services. Thinking back on the old gentleman's outburst, the obvious truth of his point was inescapable. Things certainly are changing in the Defence Forces, and in the midst of such change, yes, 'they' certainly do expect us to be military officers too — that is, military officers in the traditional, fighting sense. It is a point which should be borne carefully in mind by readers of this excellent collection of essays entitled *The Military and Australia's Defence*.

This is an important book which deserves a wide readership by all who are concerned with Australia's defence, because whilst it offers a firm theoretical base, it also offers well reasoned and sound comment on the more practical aspects of defence planning. In recent years there have indeed been far-reaching changes in both the world and specifically Australian strategic situations. The re-organisation of the Department of Defence has brought with it the demand for a greatly increased contribution by the military at all stages of Defence policy formulation and implementation. The escalating costs of defence equipment have also emphasized the need for the military to justify in great detail every aspect of their hardware preferences.

To a large extent, it seems, these changes have caught the military unprepared. Until comparatively recently Australia's defence policies and equipment acquisitions were largely tailored to fit in to those of greater powers. Thus there was little demand for the military to meet the challenges now posed by our newly enforced independence. The challenges are now upon us. The nature of the military profession is changing rapidly, much more rapidly, this book suggests, than the many training and education systems available to its officers can accommodate. Perhaps the most significant amongst the demands now made upon the military is that of the acquisition of knowledge and experience in areas once thought to be outside the military province — political science, economics, the social sciences and detailed managerial studies in both the behavioural and analytical areas. If this book has a single major theme, it is the critical need in the military for the further, wider education of its officers.

The Military and Australia's Defence is divided into two sections. The first looks at the formulation of defence policy and in particular at the roles played by military officers in making policy decisions. The authors of this first series of essays are well known academics and recognised authorities in the area of defence writing — Hugh Smith, F. A. Mediansky and Desmond Ball.

Smith's opening essay on the Determinants of Defence Policy comprehensively sets the scene. The nature of the external determinants, once called *The Threat*, has changed to the extent that the idea of the battle has lost its centrality. In its stead has emerged a constabularly role with an emphasis on deterence, and a form in such activities as surveillance, military assistance and peace-keeping. The dilemma for the military lies in apportioning its hardware and training to both the traditional fighting role and the newly acquired constabulary role.

In the internal context, the military must conduct its deliberations within the constraints imposed by the increasing political and social awareness of the community. The demands on the military are, as they ever were, for responsibility and accountability, but these demands are now sharpened not only by an increasing resistance to violence as a solution to conflict but also by the realistic concern that the defence dollar is well spent. The meaning of 'mega-bucks' is getting through.

The next chapter is entitled 'The Role of the Military in Strategic Policy'. The author, F. A. Mediansky clearly achieves a double purpose. Firstly, and very adequately he fulfils the promise of the title. He notes that '... the military are involved in the process from the early drafting stages — at the intelligence assessment level and draft contributions from the Military Staff, through the middle clearing stages up to the highest interdepartmental stage — clearance by the Defence Committee'. From his description he draws conclusions which in summary emphasize not so much the extent of the military input, but the quality of the input and the civilian-dominated context in which such inputs are made. This enables the author to lead, particularly his military readers, rather tactfully into his second point which is basically that the military are not yet very good at making that contribution. His theme here is the now widely perceived lack of breadth in the education of military officers, who find themselves unable to offer the wider, non-military perspective which their increasing contribution to policy-making demands. His theme is taken up in more detail in the second section of the book.

In the chapter entitled 'The Role of the Military in Defence Hardware Procurement', Desmond Ball offers what is probably as lucid an explanation of the process as is available. His description provides an invaluable introduction to newcomers to the hardware procurement business, and will probably also help many of the old hands. He also provides a well-reasoned critique of both the procedures and the military's attitudes which are reflected in the results of the procurement processes, or lack thereof. His criticisms will not be news to readers of the Katter Committee Report, but are no

less valid for their re-iteration. The author's points might have made more impact had he noted that none of these well-known criticisms has yet been adequately answered.

'The Role of the Military in Mobilization' again by Desmond Ball, is something of a disappointment, simply because his basic contention — that the Department of Defence is doing nothing to prepare for mobilization — is simply not true. There is also a disparity between his assumption and his theme. He specifies that his discussion is primarily concerned with the '... full mobilization of the military ...', having previously accepted the assumption that such an eventuality is unlikely. He further assumes that since there is no public debate on the subject, nothing is going on. As I have said this is not true. Nevertheless, his article may provoke some discussion.

Section 2 of the book contains three articles written by serving Army officers. They are all Majors and have all achieved high academic qualifications. They would seem therefore to be well-qualified to discuss the educational theme mentioned earlier. I will discuss my use of the word 'seem' later.

Major Paul Mench opens the discussion with a well researched article on 'The Education of Officers: Problems and Praxis'. Despite what has been said before, the subject of officer education is not new, and Mench provides a very good summary and critique of the many philosophies and methods which have been applied both in Australia and overseas.

The next article 'The Requirements of the Australian Military Profession Today' co-authored by Majors G. L. Cheeseman and K. R Sydney develops the educational theme by noting that '... under the combined efforts of strategic technological and social change ... officers today are required to be experts in new and complex fields ...' The solution, they suggest lies in the adoption of new career development and management policies which result in effect in career streaming of officers into more restricted areas of specialisation and employment.

This theme is taken up and developed by Major N. A. Jans in his article entitled 'Generalism, Specialism and Career Development of Army Officers'. He argues against both Generalism and Specialism career development models as being too broad and too narrow respectively. He argues well in favour of what he calls the dual specialist model, one 'leg' of which is based in a primarily operations-oriented area, the other in a supporting area. He suggests that alternating postings between the primary area and the same recurring support area will enable specialist skills in both areas to be developed effectively to meet both military and personal career goals.

In the closing chapter of this section, Robert O'Neill sums up both the section and the book by tracing the history of the military's involvement in Australia's Defence and then by commenting, generally in favour of the career planning suggestions set forward by the five Service authors. I said earlier that these authors would 'seem' to be well qualified to write on officers' education. My only objection to their suggestions is well put by Robert O'Neill. '... all large organizations require leaders who have a broad familiarity with the problems faced by each of component elements of their enterprise.' Career planning and education are certainly needed. Pure generalism and pure specialism are certainly not workable options, but neither, I would suggest is dual specialism. The restriction is too tight for my free-ranging career predilections.

The book is already in the Staff Colleges. It deserves the widest possible readership within the Defence community, for here in a single volume is a comprehensive, constructive and timely discussion of what must surely be a fundamental aspect of the military's thinking — the nature and quality of their contribution to Australia's defence. Things certainly ain't what they used to be, but they still expect you to fight the war, too.

TONY HOWLAND

FIVE CENTURIES OF FAMOUS SHIPS. From the SANTA MARIA to the GLOMAR EXPLORER. By Robert G. Albion. Published by McGraw-Hill Book Company. 1978. 435 pp. Recommended Price $21.95.

The *SANTA MARIA* — flagship of Christopher Columbus — made, arguably, one of the most important sea voyages in history. It was from her deck in the early morning of October 12, 1492 that Columbus first saw the New World; he want ashore later in the day and took possession in the name of Ferdinand and Isabella of Spain. The Santa Maria was destined not to survive that famous day for a mere 10 weeks later, she became a total loss off the coral reefs off Hispaniola. In contrast, the 'cloak and dagger' exploits of *GLOMAR EXPLORER* are equally enthralling and almost defy credibility. In 1974, this amazing and unique vessel raised part of a sunken Soviet submarine from the ocean floor of the Pacific at a depth of almost three miles.

Based in Vladivostok, the 4000-ton submarine was about 750 miles northwest of Hawaii, when a number of explosions sent her to the bottom with all hands. Although she was 18 years-old, her hull was a valuable source of information and although the secret code books and cypher equipment were not recovered, the salvage showed that she had been fitted to carry three atomic missiles in addition to nuclear-tipped torpedoes.

To illustrate five centuries of maritime development from 1492 to the present day, the distinguished and knowledgeable historical author, Robert Albion, has selected just over 160 vessels and their stories.

His selection has been made on the basis of the ship's contribution to maritime history and this of course covers a number of facets and employs different yardsticks. In some cases, ships achieved fame by carrying a pioneer of some epic of exploration while others participated in a critical battle. Some vessels were included because their design introduced a significant innovation; others because they represented an important class of type and still others because they featured in a major disaster at sea — usually with heavy loss of life.

I could criticise the author for placing undue emphasis on American developments and not being dispassionate in his selection. Then again, one could argue for a number of vessels such as *AMETHYST* or *FLYING ENTERPRISE* that deserve mention and have been omitted, but we all have our favourite ships and enjoy the romanticism that goes with them in our memory.

Albion has tackled a mammoth task with thoroughness and competence to provide a very readable, interesting and factual history. Famous ships' names punctuate the narrative of development and the stories of *JERVIS BAY, MARIE CELESTE, LUSITANIA, MEDUSA* and *SCHARNHORST* whet the appetite and capture the imagination. By reading through this book and its essays, one can gain a very real impression of the hazards, triumphs and disasters that attended the development and progress of the modern ship and of man's struggle against the seas.

The book is a useful guide and carries a comprehensive index for ready reference, but I pondered as I closed the book and shut the door on nearly 500 years of maritime development. I wonder what will happen in the next 500 years? Albion reveals the enormous progress in the twentieth century where steel and fibreglass have largely replaced wood for hulls, merchant ships have become larger, warships more lethal, steam and speed have conquered sail and sluggishness, but what of tomorrow? Will the clock turn back and reveal a new breed of sailing ships when the oil runs out? Albion has given us only the facts of yesterday and the reality of today, but his readable story prompts great interest and leaves us to ponder on the dreams of tomorrow.

MICHAEL APPS

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