

Registered by Australian Post
Publication No. NBP 0282

ISSN 0312-5807



VOLUME 15
NOVEMBER 1989
NUMBER 4

JOURNAL OF THE AUSTRALIAN NAVAL INSTITUTE



AUSTRALIAN NAVAL INSTITUTE INC

The Australian Naval Institute Inc was formed and incorporated in the Australian Capital Territory in 1975. The main objects of the Institute are:

- a. to encourage and promote the advancement of knowledge related to the Navy and the maritime profession,
- b. to provide a forum for the exchange of ideas concerning subjects related to the Navy and the maritime profession, and
- c. to publish a journal.

The Institute is self-supporting and non-profit-making. All publication of the Institute will stress that the authors of articles express their own views and opinions and that these are not necessarily those of the Department of Defence, the Chief of Naval Staff or the Institute. The aim is to encourage discussion, dissemination of information, comment and opinion and the advancement of professional knowledge concerning naval and maritime matters.

The membership of the Institute is open to:

- a. Regular Members. Regular membership is open to members of the RAN or RANR and persons who having qualified for Regular membership, subsequently leave the Service.
- b. Associate Members. Associate membership is open to all other persons not qualified to be Regular Members, who profess an interest in the aims of the Institute.
- c. Honorary Members. Honorary membership is open to persons who have made a distinguished contribution to the Navy or the maritime profession, or by past service, to the Institute.

DISCLAIMER

Views expressed in this journal are those of the authors, and not necessarily those of the Department of Defence, the Chief of Naval Staff or the Institute.

CONTENTS

TITLE	PAGE
From the President	2
From the Editor	3
Guide for Authors	4
Letters to the Editor	5
Key Concepts in Australian Strategy	
by the Minister for Defence to the Australian Naval Institute	13
Indonesia's Perception of SLOC in Southeast Asia	
by Major General Subijakto	27
Surveillance Tasks	
by Rear Admiral (retired) Yasuo Ito	33
Churchill Fellows Headed Overseas	38
The Evolution of the RAN Intelligence Service — Part one — 1907-1918	
by Wayne Gobert	39
Book Reviews	44,50
Control of Piracy and Maritime Terrorism	
by Tun Hwa Ko	45
The Modernisation of Ports	
by Commander I.T. Croser, C.J. Davidson, M.G. Harvey	51
Draining the Swamp	
by Commander C.J. Davidson BSc (ENG) RANEM	55
Notice of Annual General Meeting	59
Nomination Form for Election of Office Bearers and Ordinary Councillors for 1989/90	60
Naval Institute Insignia	61
Australian Naval Institute Council Members	62
Application for ANI Membership/Insignia Orders	63
Advertising Information	64

Articles or condensations are not to be reprinted or reproduced without the permission of the Institute. Extracts may be quoted for the purposes of research, review or comment provided the source is acknowledge.



*Cover Photo:
HMA Ships SUCCESS and
HOBART undertaking a RAS
during a recent exercise.*

FROM THE PRESIDENT



The Defence Minister, Mr Kim Beazley's delivery of the Vernon Parker Oration on 6 September was a most successful Institute occasion. Once again the Military Theatre at the Defence Academy was filled near to its capacity. Mr Beazley's address is the lead article in this issue.

Representatives of the Friends of the Naval Institute were present for the Oration (see photo on page 14). At a small reception for them beforehand, I welcomed the Friends and presented their special membership certificates. In 1990 I intend a Naval Institute Dinner in the March/April period and at least an Oration. The Friends will again be our guests at both these functions. They are a most enthusiastic group and I value their support.

For some time the Council has been considering a proposal that it publish a manuscript written by a Chaplain Vivien Thompson during the 1920s, titled "History of Garden Island 1788-1922". The difficulty has been that the draft requires extensive editing and re-writing before it is in a form suitable for publication, and no way of carrying out this task could be found. Following Council consideration of the matter earlier this year however, Lieutenant Tom Frame volunteered to progress the task and in September the Council agreed in principle to publish the manuscript. This will be in the form of a good quality book to be titled "The Garden of Neptune". Discussions with interested publishers are continuing and I will keep you informed of their progress.

Although I cannot promise such support for all our authors, writing for the Journal can be a rewarding experience (see the notice on page 4). Please think about it.

Sincerely,

Ian Callaway



FROM THE EDITOR

As indicated in the previous ANI Journal, the lead article for this issue is the Vernon Parker address by the Minister of Defence, Mr Kim Beasley. The first awards to authors for articles written expressly for the ANI Journal have been earned by Lieutenant R.J. Griggs (\$20) and M.A. Head (\$36) for their articles published in the August Journal. For further details of the award please refer to page 4.

The late issue of the Journal is regretted but by way of consolation the quality of the Journal is being kept at the August level.

If you are in doubt as to contributing an article for publishing please reconsider and submit. More articles are required for the February issue.

Finally, I would like to take the opportunity of thanking all those authors who submitted articles for publication during 1989. As you are now aware not all articles received can be published — but most are. A thank you is also due to those councillors who have proof-read the Journal articles — it is very much appreciated. And to all readers I wish you a healthy and prosperous 1990.

Sincerely,

Don Agar

MEMBERSHIP RENEWAL

If your membership expires on 31 December this year you will find enclosed an invoice to assist in the return of your remittance. Payment must be sent to the ANI postal address or to Russell Offices, A-B-08.

Multi-year membership is available at reduced rates and is detailed on the invoice.

Personnel not wishing to renew their membership are reminded of their obligation under the constitution to submit their resignation.

GUIDE FOR AUTHORS

In order to achieve the stated aims of the Institute, all readers, both members and non-members, are encouraged to submit articles for publication. The following guide outlines the major points most authors would need to know in order to publish a quality article in the Journal. A more comprehensive guide is available from the Editor.

Type of article

Articles should deal with interesting recent developments in matters relating to maritime matters which directly or indirectly impinge upon the naval profession. Overseas contributions are also encouraged. To be eligible for prizes, original articles must be accompanied by statements that they have been written expressly for the ANI. The editor reserves the right to reject or amend articles for publication. **The ANI will pay the authors of articles, specially written for the Journal and accepted for publication, \$10 per 1000 words commencing from the August 1989 edition of the Journal. An annual prize of \$25 for the best book review will continue. These payments will not be made to the authors of articles such as staff college prize essays and Peter Mitchell competition entries.**

Length of Articles

As a broad guide, articles should range from 2500 to 6000 words. This is between 9 and 21 pages of double spaced typing on A4 size sheets. Short articles are also welcome.

Subdividing the Article

- Three major types of headings are used:
- **MAJOR HEADING** — Bold Capitals
- **Secondary Heading** — Bold Capitals and Lower Case
- Tertiary Heading — Capitals and Lower Case

Abstract

An abstract of 75 words at the most is desirable when an article is proposed. It should state the scope of the article and its main features.

The Text

The text should be in an impersonal, semi-formal manner. Consistency in spelling, headings, symbols, capitalisation etc is essential.

References

References should be numbered consecutively and listed at the end of the paper. The preferred format is:

1. Smith, R. & Jones, A., "Marketing Videotex", Journal of Marketing in Australia, Vol. 20, No. 3, June 1985, pp.36-40.

Photographs

Black and white glossy prints and colour prints are acceptable. Clearly identify photographic prints with figure number written on separate slips of paper attached with adhesive tape to the back of the prints. Captions for the photographs must be provided.

Tables, Diagrams and Graphs

Tables must be typed on separate sheets and presented so that they may be set by the printer. Use diagrams, graphs and illustrations to improve the general presentation of the article. Illustrations, etc., are referred to in the text by figure numbers, consecutively.

Copyright

Authors must complete a "Copyright Declaration" (see below) and attach this with their final typescript.

Clearance to Publish

Authors should get clearance from their employers if the articles contain sensitive information such as costs, unapproved policies, critical statements, etc. There is no objection to authors stating personal views on subjects where at variance with a corporate view, but their viewpoint must be put in perspective so that readers, including those overseas, do not gain a false impression of the status of the subject.

The Final Typescript

Articles should be typed on A4 paper. Good near letter quality (NLQ) dot-matrix print is acceptable. Three copies of the typescript should be sent to the Editor, PO Box 80, Campbell, ACT 2601. The complete package will comprise, on separate sheets:

- Cover sheet
 - Title of article — Author's name (or pseudonym) and qualifications
 - Present position — Telephone number — Address
- Recent photograph and biography of the author (less than 200 words)
- Abstract — less than 75 words
- The text
- Tables, each on a separate sheet
- Illustrations
- Photographs, clearly identified
- List of captions for tables, photographs & illustrations.

For More Information

The Editor can be contacted either via the aforementioned postal address or by phone on (062) 652020.

COPYRIGHT DECLARATION

If your paper has not previously been published, either in whole or in part, you are asked to assign a non-exclusive licence to the Australian Naval Institute, as a condition of publication. Such assignment would not restrict you from publishing the paper elsewhere as long as acknowledgement of the original source is given. If your paper has previously been published, either in whole or in part, you are reminded that it is your responsibility to bring this to the notice of the Institute so that full acknowledgement may be made.

1. TITLE OF PAPER
2. I AM WILLING, AS A CONDITION OF PUBLICATION, TO ASSIGN A NON-EXCLUSIVE LICENCE TO REPRODUCE THE ABOVE PAPER, TO THE AUSTRALIAN NAVAL INSTITUTE
3. THE ABOVE PAPER HAS PREVIOUSLY BEEN PUBLISHED IN
4. NAME OF PERSON RESPONSIBLE FOR CORRESPONDENCE WITH THE INSTITUTE
5. ADDRESS
6. SIGNATURE TELEPHONE NO.

LETTERS TO THE EDITOR

Sir,

Bravo Zulu, Lieutenant Griggs on an excellent article countering Commander Allica's article for a Sail Training Ship in the RAN.

Having read Commander Allica's article I was impressed with the thought "Since 1988, Naval circles in Australia have been inundated with cries for a Sail Training Ship". Why, prior to arrival of the tall ships in Australia for the Bicentenary, nobody even considered it worthwhile procuring a STS. Are people getting carried away by the idea that — "they've got one, why shouldn't we".

Commander Allica's article gave me the impression that he thought junior officers today were a "bunch of wimps" and that acquisition of a STS would toughen them up.

Being a product of the recent training system I can only defend its worth against the possible acquisition of a STS.

Having conducted the training cruises in HMAS JERVIS BAY and spent time albeit a short one in HMAS TOBRUK, I can say that the accommodation onboard is no better than that of a Destroyer Escort, I recently had the honour to serve in.

Lieutenant Griggs is quite right in stating a trainee will be in awe of the sea no matter what ship he goes to sea in first. I was, when onboard JERVIS BAY in 1986 when passing through the tail end of Cyclone Winifred off the North Queensland coast, and again in 1988 in the Cook Strait, when JERVIS BAY rescued twelve Korean fishermen from the DONG CHANG 3 which had foundered in heavy seas.

A STS may toughen up the young officer of today, but will it teach him the necessary skills that Lieutenant Griggs refers to. A STS will not operate in company with other RAN warships, as OOW manoeuvres would be impossible to carry out.

In the RAN today, a ship must be paid off, before another comes into service to replace it, e.g. WESTRALIA for STALWART. The resources are just not available for a training ship such as JERVIS BAY and a STS.

JERVIS BAY provides essential training for Junior Officers at the RAN and is also a valuable vessel for joint service operations because of its cargo carrying ability. A STS could not be used in a cargo carrying role, in the way that JERVIS BAY is.

Lets not waste resources on romantic ideas of a Sail Training Ship. JERVIS BAY fulfils two roles — training and sea transport. A STS could only provide training, maybe?

Sub-Lieutenant Greg Swinden, RAN

The Editor
Journal of the Australian Naval Institute
PO Box 80
Campbell ACT 2600

Sir,

As a resident of Australia's southern state I infrequently visit Canberra and have only recently seen the National Naval Memorial. When I did examine the memorial I was considerably impressed by the symbolism of the centrepiece sculpture and by the main plaque announcing that this was the nation's tribute to naval personnel 'who have created the naval heritage of Australia'.

In a memorial sympathetically portraying the diversity of naval activity I was surprised to find that the battle honours shown pay scant attention to the First World War and therefore do not accurately reflect the historical range of RAN exploits. Action in the Dardanelles and against the *Emden* are acknowledged but years of worthwhile service between 1914 and 1918

in the Mediterranean, North Sea, Atlantic, South East Asia and Netherlands East Indies (now Indonesia) are ignored.

This general failing is difficult to understand but to ignore the RAN's exploits in German New Guinea in August and September 1914 is inexplicable. In a few short weeks the RAN was instrumental in driving the German East Asia Squadron from the south-west Pacific and preventing it from attacking shipping in Australian waters. As well, the RAN played a major part in destroying the German strategic wireless chain in the region, and escorted the Australian Naval and Military Expeditionary Force (containing RANR members) to Rabaul and New Guinea where Australian administration was established at gun point.

From a historians viewpoint this action is important because it justified the establishment of the RAN. At the first opportunity the infant navy, formed at considerable expense, was fulfilling its planned role of protecting Australian interest. The action is also historically interesting because it was the occasion of the first Australian naval personnel being killed in action and the first loss of an RAN vessel on active service (AEI). It was also the occasion of the first decorations being awarded to members of the Australian Navy — a Distinguished Service Order to Lieutenant T.A. Bond, RANR, five mentioned-in-despatches to RAN and RANR personnel (and additional mentioned-in-despatches to Royal Navy personnel then serving with the RAN).

Historical importance of an event does not necessarily mean that a battle honour should be awarded but there are excellent grounds for believing that the action around Rabaul qualifies for the award of a battle honour to those RAN units involved. According to Alfred Festberg, in his authoritative work *Heraldry in the Royal Australian Navy*, (pp125-126), battle honours are awarded for 'successful war service' and successful operations are those which 'resulted in the more or less complete frustration of the enemy's intention at the time, although no warship may have been sunk'. By any standard, naval activities in the south-west Pacific in August and September 1914 meet those criteria.

So I remain puzzled. Why are there so few battle honours for the First World War? And why does not 'Rabaul 1914' appear among them? I cannot help but feel that, until there is adequate recognition of RAN activity during the First World War, the Naval Memorial will be a less than complete tribute to Australia's naval personnel.

Ray Jones

Commodore Ian Calloway, R.A.N.
President
Australian Naval Institute
Canberra, Australia

Dear Ian,

Continuing the conversation we began during your too brief visit to the U.S. Naval Institute, permit me to express some additional thoughts about our respective countries, peoples, navies, and naval institutes.

Like most Americans — even before the coming of Crocodile Dundee — I viewed most male Australians the way Kipling viewed Royal Marines: "They come from our lot, they was brothers to us; they was beggars we'd met and knew; Yes, barrin' an' inch in the chest an' the arm, they was doubles o' me an' you."

No, you didn't really come from our lot. There were no shackled Americans on the eleven ships that transported the first 776 English convicts to Sydney in 1787-88. Nor were there any among the 168,000 convicts that followed before transporting was abolished in 1868. But you were like beggars we'd met and knew. We liked your looks — thin lips, thinning hair, stringy muscles, squinty eyes — and the way you spoke our language, sort of, with your trademark "Mate" that sounds like "might" instead of "hate" (which you blokes pronounce "height").

Growing up loving Kipling, how could I not not love the Australians he immortalized when, in 1914, the outcast sons of convicts answered the mother country's cry — "The Hun is at the Gate!" — and "Secretly, swiftly from their ports they came, so that before half earth had heard their name, Half earth had learned to speak of them with fear."

Throughout my 21 years of enlisted service in the Marine Corps, I watched the Aussies come to the ports from the cities, the bush, and the outback to fight beside us and their Commonwealth cousins in World War II and Korea. And in the warm glow of campfires beside a billabong, they taught us the fair dinkum meaning of "Waltzing Matilda" and we taught them our own national anthem "Mares Eat Oats, And Does Eat Oats ..."

Imagine my pleasure when, in 1977, the editor of the Australian Naval Institute's journal wrote to me. Having served for eleven years as managing editor of the U.S. Naval Institute *Proceedings*, I was then in my fourth year as editor-in-chief and he wanted to borrow both the title and concept of a feature I had created called "Nobody Asked Me, But ...". I gave him permission and decided to keep an eye on this publication that might or might not become a clone of our own.

In what ways are your journal and our magazine alike? In October 1873, a baker's dozen discontented officers met one night at Annapolis to form a society they hoped would pluck their service out of the doldrums that followed our Civil War. Exactly a century later, a pair of RAN officers — Commodore Vernon Parker and Captain John Robertson — met one night in Canberra and proposed a similar society which might provide for their navy an azimuth out of the malaise that followed Vietnam. Both societies pledged the "advancement of knowledge" through the publication of a quarterly journal that would serve as "A forum for the exchange of ideas related to the naval profession."

Both USNI and ANI began with a President, Vice President, and a governing body totally committed to freedom of speech — particularly for the junior officers. The offices have endured, but the commitment has not always been steadfast in the face of overt or covert pressure from Navy officialdom. Knees have been known to buckle and eyes to water in Annapolis and Canberra when the head of either Navy wrote something like, "Overall, you are doing a good job, but you should strive for more balance. You should at all costs avoid controversy-for-the-sake-of-controversy [by which he meant any kind of controversy] and ad hominem attacks, particularly with regard to official policies."

In what ways are we different? *Proceedings* is now neither a quarterly nor a journal while you are still both. An editorial board composed mostly of high ranking officers decides what articles will be published in *Proceedings* — but the editor decides when. Your editor alone decides what and when to publish. *Proceedings* receives thousands more submissions per year than the ANI Journal and pays much more per word, all of which has to do with the elemental difference: ours is a 116-year-old publication serving a 115,000-membership whose main focus is a 500,000-man Navy. Your 14-year-old, 600-member society serves a 16,000-man Navy that could fit comfortably in just four of our carriers.

One of your co-founders, Captain Robertson, might have reacted to such patronizing patter by telling the story of the elephant and the mouse. "Don't you feel insignificant standing next to me," the elephant asked the mouse, "where I am so powerful and you are so weak?" "Yeah," replied the mouse, "but I've been sick." Robertson's delicious sense of humour, often bordering on the ribald, might have asserted itself by humbly concluding that

"Ours is a sick society."

Robertson's lively writing adds sparkle to whatever issue he writes in or on. What *Proceedings* author (other than our irreplaceable VAdm Chick Hayward) would begin a February 1983 analysis of the Falklands War as Robertson did with a risqué anecdote about Prince Orloff, Catherine the Great's "favourite?" No less gifted was co-founder Commodore Parker who preceded Robertson as President until Parker's voluntary retirement from the Navy in 1977 forced him to relinquish the presidency.

But let's get back to this junior officer thing. To get your Jay-Ohs to write, you offered them the anonymity that "Master Ned" and a handful of other young guys employed. Did you know that *Proceedings* went through its first century guided by the Colonel Blimpish dictum that "We're not going to have anybody stand up in our forum wearing a Halloween mask!" Our present publisher, Captain Jim Barber, pretty much skewered that one when he was a Board member by observing that the *nom de plume* has been around a lot longer than the Naval Institute has.

Thus, all our junior officers (or any aspiring author) now can wrap themselves in the pen name cloak. But almost none do. That they don't have to is a tribute to all Board members over the years — but especially to a relatively new breed, the junior officer board member — who have taken the heat their thankless jobs often generates. At about the time the ANI was starting out, the U.S. Naval Institute hierarchy decided to appoint a junior officer representative to the Board of Control/Editorial Board. Because of his ex officio status, he would have no vote. Everyone, or nearly everyone, soon realized that not allowing the guy to vote was like not allowing Enrico Caruso to sing, especially in light of the caliber of the first appointees.

They have all been cut from the same sturdy bolt of navy blue and gold cloth manufactured at the Severn River plant. All but one. Never mind where Lieutenant Commander Dennis Fargo matriculated; he turned out well. Dennis knew right from wrong and burned barrels of midnight oil before reaching his decision on a program, a policy, or a *Proceedings* article. His invisible checklist included "Is this right for the naval institute, right for the Navy, and right for the nation?" — but never "Is this 'right' for Dennis Fargo?" Still, reaching a decision and casting an open vote can be two different things when your seniors seem to be counting your pores and that affable admiral down at

the end of the table who says so little and takes so many notes is the personal representative of the Chief of Naval Operations. But the Dennis Fargos and the Crocodile Dundees of the world can't be intimidated.

But why am I telling you things you already know about the value of a few good young men to an organisation. One of your council members, Commander W.A.G. Dovers, said all I am saying in far fewer words in his open letter of the August 1988 issue: "The most important challenge facing the ANI today is to attract more young members. . . . The ANI is not an organ of the Royal Australian Navy. It was not formed to echo Service policy. If it is to progress in the longer term we must get off our high horses, stimulate a free thinking debate and truly welcome the input of younger members. Maybe then we will attract the fresh blood that the ANI so badly needs."

No maybes about it, Dovers. When I assumed the editorship in 1973, a privately commissioned study had reached exactly the same conclusions about us. I hired a couple of what my publisher called "Young Bucks," Naval Reservists Fred Rainbow and Paul Stillwell and, although they're both getting long in tooth and short in wind they remain among the freshest, strongest voices on the Naval Institute staff. My YBs and I also went looking for some middle-aged guys to add to the mix and we found them in a trio of retired captains named Paul Schratz, Ned Beach, and Gerry O'Rourke, all of whom might have attained flag rank had they not written for the *Proceedings*. But that ain't necessarily so: Four equally able wordsmiths — Chick Hayward, Bill Mack, Jim Calvert, and Gerry Miller — all wrote for us and retired as vice admirals. Hell, Elmo Zumwalt wrote regularly as a young man and he made CNO.

All of the authors I've mentioned thus far, and a thousand others I haven't mentioned, including today's shooting star Captain John Byron, are unreasonable rascals if we believe George Bernard Shaw's definition: "The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man." They are all potential killers, too, for, as Shaw tells us, "Nothing is ever done until men are prepared to kill one another if it is not done."

An incident involving John Byron is instructive. He wrote for us a "Nobody Asked Me, But . . ." about Canada that almost started a war. Things got out of hand when the head of their Navy called ours, who is traditionally the Naval Institute's president, and told him that most Canadian officers felt that anything published in a service journal by a serving

officer obviously represented the official government point of view. Our President could have and should have straightened him out on this vital point, but he didn't. By allowing that false impression to prevail, that CNO joined the company of a predecessor who, testifying before a congressional committee, reportedly was told "Admiral, what you are telling us today contradicts what appeared in your *Proceedings* last month." Had the CNO simply said, "Sir, that's not my magazine. I never know what those clowns are going to print," we on the staff would have renamed our babies after him, we would have written songs about him, and named our driveways and garden paths in his honour. But he didn't.

You know how important freedom of speech is. "It is," one of our giants wrote, "the freedom from which all our other freedoms flow." From the very beginning, your journal has tried, as *Proceedings* does, to maintain its independence from its country's and its navy's "party line." Otherwise, you would not have printed, as you did in May 1977, that fine article by five of your serving officers who tried to predict "The Needs of the R.A.N., 1985 to 2000." Among the several things they were right about was the need for the best and the brightest of R.A.N. officers to serve a "short term (three months?) on ministerial staffs and other departments such as Foreign Affairs." Had Oliver North and John Poindexter served only three months in mufti, their service careers might have had different endings.

Having twice mentioned the estimable Chick Hayward, the former enlisted man who fought as hard for the Naval Institute as he so often fought for his country, let me conclude with a third recollection to suggest that the fiercest of fights can take place among friends behind closed doors. Chick wants to be reincarnated as a fly on the wall so he can attend the always lively monthly USNI board meetings unnoticed.

Finally, the optimist has always been my kind of guy. I know he is your kind of guy, too, judging from what many of us think is Australia's national motto: "She'll be right, mate." That's what I think when I look back a century to when we were the mouse and England was the elephant. That's what I think when I look ahead to the inevitable day when — you pick the mouse — Australia will be the elephant.

That's what I think when I look at our respective societies and the recurring, seemingly unsolvable problems that beset them on the hard road they have chosen to follow: "She'll be right, mate!"

**Most respectfully,
Clay Barrow**

Dear Sir,

The section Nexus in Michael Head's article, *No War For Ten Years*, drew attention to the large number of starred officers and colonel equivalents serving in Canberra.

This prompted a check at the Seagoing Officers of the R.A.N. listed in the Navy List of October, 1945 when we had a naval strength of over 39,000 members. The Captains numbered ten including one acting as Rear Admiral in the Sydney Area and three acting as Commodores, one Commanding the Australians Squadron, one as the Second Naval Member and the third as C.S.T. at Flinders Naval Depot.

The Commanders list was thirty strong with eight being Acting Captains and there were forty Lieutenant Commanders listed plus a page and a half of Lieutenants.

We did have an Admiral, an Engineer Rear Admiral plus three Engineer Captains and sixteen Engineer Commanders or Commanders (E). The senior officers in the Supply Branch numbered two Captains (S) and ten Commanders (S).

The RANR(S) had four Commanders and the RANR had one Acting Commander whilst the RANVR listed the newly promoted Commander Stanley Darling with his three DSCs from the Atlantic.

Technically the present Navy is a far cry from the 1945 wartime Navy with its hundreds of comparatively simple ships and a host of shore establishments but it does make you wonder whether we are a trifle top heavy these days.

LCDR E. Bryden-Brown, RANR (Ret)

Dear Sir,

In the article "No War for Ten Years" in your August edition, M.A. Head criticizes me strongly. I have become almost inured to criticism, but not totally so, especially when the criticism is not based on fact and when that ill-founded criticism appears in a professional journal.

I was advised quite early in life to be sceptical of newspaper reporting. I offer that advice to M.A. Head. Also, I consider that one should be careful in checking one's facts before attacking a serving Chief of Staff in a professional journal. The potential damage surely warrants at least that small consideration.

M.A. Head did not even quote correctly from his (or her) reference. That, however, is not of great significance. Of more importance is that his reference, "The Australian" of 4 May 1989, quoted me incorrectly, something which

I have come to accept as a normal practice for newspapers.

On the basis of a thin and incorrect report in "The Australian", M.A. Head proceeds to castigate me. He also maintains that I have made certain assumptions, assumptions in which I am said to have more faith than he, M.A. Head, does. I can assure M.A. Head that any assumptions in his article are his not mine.

I have in my records a video-tape of the entire press conference on which "The Australian" article was based. That article in turn, provided the basis of M.A. Head's criticism. The press conference was held to counter criticism of the RAAF's operational capability and of the state of morale within the Service; it was not held on the topic of warning time or threat perception. Those topics did, however, arise briefly during the question and answer section of the press conference. Let me put before you what did occur in the press conference. In answer to a question on our capability to sustain operations I had this to say:

"I don't think it's any secret that the combat stamina of the Australian Defence Force would be sorely tested if certain credible contingencies which might occur in the future were to occur now. The point is that they cannot occur now, the strategic circumstances which would lead up to those sorts of contingencies are just not in place. We expect warning time, and we expect to be able to react in ways within that warning time which will ensure that we can handle that credible contingency."

I then expanded on that issue by talking about the nice judgements which have to be made in providing for both current preparedness and future capabilities within a finite Defence budget. I spoke also of the balance that must be struck in working with the zero-sum equation that contains current preparedness and future capabilities. On warning time, I drew attention to the fact that the whole issue had been well covered in the Defence Policy Information Paper of March 1987.

Later in the interview I was asked the following question: "Are you saying that war isn't likely within the next five years or ten years?" To which I replied:

"Yes I am saying that, and if anyone would like to debate me on that subject we can hold a separate press conference. But why I am here is to tell you that the Royal Australian Air Force, right now, is in a quite different shape from that which is being publicly portrayed and that is what I want to correct."

The rest of the press conference remained on the subject for which it had been convened.

I chose my words carefully and, in particular, I was careful in my use of the terms war and credible contingency. I stand by those words in the context in which they were spoken. Moreover, they are no different in content from those which have been used frequently on these subjects at senior levels of government and the ADF over many years.

In a later stage of his article but on a different subject, M.A. Head makes a statement which I cannot allow to pass without comment. He states "perhaps we could seriously consider abolishing the RAAF. The Air Force is and always will remain a supporting command. Give the training, transport and support aircraft to the Army, the F111s and Orions to the Navy and they can toss for the Fighter Wing." If M.A. Head wishes to contribute in any substantial way to the defence discussion in this country, I would suggest that he stop being silly and treat the subject with the deep seriousness it deserves. Quite apart from his major premise being demonstrably fallacious, one would have to be concerned at the thinking behind the proposition he advances. To advocate that the command of the fighter assets of the Australian Defence Force should be decided by a toss of the coin is to approach the very limits of stupidity in Defence discussion.

Air Marshal R.G. Funnell, AC

Dear Sir,

I was delighted to see that my article, "A Sail Training Ship For The RAN", sparked some interest and prompted Lieutenant Grigg's response in the August edition of the Journal, "In Defence of Car Ferries Painted Grey". From the tenor of his article it appears that Lieutenant Griggs was offended by my off hand reference to a ship in which he has pride. Whilst I endorse Lieutenant Griggs sentiment of pride in the vessel in which he serves, he should not allow this to get in the way of the issue at hand, nor to prevent him from indulging in a little lateral thinking.

I do not accept his response and consider that he has missed (or chosen to ignore) the main point of my article, that officer training in a sail training ship can be conducted at very significantly reduced costs in terms of both fuel and manpower.

As I pointed out in my article, the acquisition of HMAS JERVIS BAY was a political decision, to a degree accidental, and Navy has made best use of this windfall asset. Nevertheless, she was not purpose built for the training role which she inherited and the "logistic support

and administrative sea transport role" was an after thought; a capability requirement which was not incorporated into a Naval Staff Requirement (NSR) to justify the vessel's initial acquisition, but was recognised after the acquisition and to a certain degree, to justify the continued retention of a vessel of her size and type in the RAN inventory.

I do not deny her usefulness in this role, but I suggest that it is a capability that can be maintained in Australia's merchant fleet and if this role is really required in an operational contingency, it can be assumed by vessels taken up from trade.

In this regard I have difficulty in accepting Navy's recent decision to pay off HMAS STALWART in lieu of HMAS JERVIS BAY, the former has unique purpose built capabilities and should be available in the core force, rather than the latter whose capabilities are available in the Australian merchant fleet.

The assertion that HMAS JERVIS BAY is able to embark and operate an ASW helicopter from the ship is misleading. Whilst the ship has a flightdeck, its lack of hanger and adequate maintenance and support facilities dictates that a helicopter can be embarked for a limited period only.

The purpose of my article however was not to deprecate the very good job that JERVIS BAY has been doing, but to have the readers of the ANI Journal consider an alternative method of training which has other additional attributes and can be achieved at far less cost. I still maintain that a sail training ship is an economic and viable solution which will result in trainees who are motivated, self confident, capable of using their own initiative and who are well prepared for service in RAN Fleet units. Perhaps the first three of these attributes are better achieved in a sail training ship and the last is at no disadvantage. The fact that a large number of navies throughout the world use sail training ships for officer training supports this contention.

A sail training ship, like all ships, would need to be designed to the task it was to undertake. This would include the provision of chartroom facilities for trainees to prepare their chartwork. Similarly blind pilotage facilities would be an advantage. The ship would not need a separate training bridge as in JERVIS BAY. There would be no other conflicting role and the small staff crew would result in few being on the bridge during pilotage runs.

Not all training would be conducted under sail, indeed pilotage runs could be considered under power much in the same manner as is practised in JERVIS BAY. The ship would need to be fitted with a single diesel powered main

engine and a variable pitch propeller capable of driving the ship at speeds up to 18 knots. This is a relatively simple requirement which would allow the ships to proceed at speeds in pilotage waters which equates to that of fleet units. The variable pitch propeller would reduce screw drag when under sail. Normal operations would be under sail which would not only result in significant economies in fuel but add an extra dimension in the training of junior officers.

The size of the vessel would be determined by the training throughput. A vessel the size of STS LEEUWIN or the SPIRIT OF ADVENTURE can accommodate 40 trainees. With expeditious course programming this would allow for adequate throughput. A vessel the size of the USCGC EAGLE would not be required.

I accept that a sailing vessel is not capable of operating in company with Fleet units but this is not required to be undertaken in the JOCT nor EXAC courses. This training is more correctly conducted later during stage 4 training in Fleet units. The statement that "a STS is incapable of conducting the plethora of seamanship evolutions that warships engage in" is untrue and displays a lack of understanding of the basis of seamanship training. Whilst it may not be possible to conduct an underway replenishment or a jackstay transfer, this shortfall can be made good at a later date. Mastering the basics of seamanship is a practical exercise, which is largely one of commonsense, safety and practical hands on experience. Once mastered, this knowledge is transportable to a wide variety of at sea situations. Seamanship training in a square rigged vessel is one of the most profound learning areas.

When citing an advantage of a sail training ship as being able to embark female trainees, I did not mean to imply that HMAS JERVIS BAY did not have the same advantage.

I still maintain that service in HMAS JERVIS BAY is more akin to life in a merchant ship but with few attending hardships and certainly very limited responsibility being delegated to the trainee. It does not give trainees the impression of life on a messdeck and first hand experience of the manner in which most RAN sailors are required to live at sea. This should be an important element of the JOCT.

The ship departmental organisation could operate in a similar manner to that practised in RAN Fleet units, with trainees forming part of these departments but involved with hands on experience. This is a much better form of training and any shortfall in comparison with Fleet departmental organisation would be

more than offset by the active participation of trainees in the departmental role.

I take issue at Lieutenant Grigg's assertion, which is at best sophistic, that JERVIS BAY "isolated at sea in the middle of a Tasman in a gale is more awe inspiring than watching the afternoon sea breeze spring up whilst sailing the inner Barrier Reef". STS YOUNG ENDEAVOUR is programmed to operate in Southern waters in summer and in Northern waters during winter. Whilst the aim is to minimize the impact of the weather on training, it does not obviate the effects of weather altogether, in fact, far from it. I would invite Lieutenant Griggs to sail in YOUNG ENDEAVOUR and hand the topgallant at night during the passage of a 40 knot squall and see which impression is the more profound.

Again I recommend that consideration be given to the RAN acquiring a sail training ship to undertake the training of junior officers on the grounds of very significant cost savings, with the most likely output being a better trained, better motivated, more practical officer who has confidence in his/her own ability and who has developed initiative under training.

**F.A. Allica,
Commander, RAN**



LOST MEMBERS?

We often receive Journals back endorsed 'not known at this address'. In the case of serving members we can often find their work address through the system. With civilian members it is not so easy. Please advise any change of address early to:

- ensure you get your Journal;
- save costs; and
- save the work load on our voluntary labour force.

Would anyone knowing the whereabouts of:

Mr J.R.C. Tanner — formerly of
6 Falkner Place
MACARTHUR ACT 2904

please advise the Secretary or Senior Vice President. Mr Tanner is a current member but his last two Journals have been returned marked 'not known at this address'.



One of the Navy's quiet achievers — the 110 tonne naval tug QUOKKA which is based at the HMAS STIRLING fleet support facility with the 265 tonne medium naval tug TAMMAR. Both tugs are Navy-manned.

Photo: Vic Jeffery, Navy Public Relations (WA)



The USNS ANDREW J. HIGGINS (TAO 190) underway in Cockburn Sound, Western Australia, on 10 November, 1989. The ship was visiting as part of the USS MIDWAY Carrier Group for seven days R & R.

Photo: LS Phil Steele, RAN

KEY CONCEPTS IN AUSTRALIA'S STRATEGY

Address by the Minister for Defence to the Australian Naval Institute

— THE VERNON PARKER ORATION —

Canberra — 6 September 1989

It is an honour for me to have been invited by the Australian Naval Institute to give the second Vernon Parker Oration. One of the great pleasures which derive from being a Minister is the indulgence given to one's natural inclination to "talk shop". It is not exactly a secret that I do enjoy the opportunity to discuss defence issues — in which I have an abiding intellectual interest as well as a political one — with professionally informed groups such as yourselves. Nor is it a secret that the members of the Australian Naval Institute have a corporate professionalism which goes far beyond a narrowly technical approach to naval matters to encompass the broader economic and strategic underpinnings of naval power.

I thought it might be useful tonight if I outlined a number of ideas which reflect generally on the sea and on the ships, not perhaps from the viewpoint to which most of you are professionally accustomed as seafarers, but from the point of view of strategy. However, before I do so I thought that I might step back slightly from these matters and say a few words about defence spending and the impact of it on wider defence policy.

As the Minister responsible for Defence for close to five years it has become increasingly obvious to me that basically my job is about looking at budgets. It is about trying to come to grips with the often extraordinary consequences of decisions we make in the financial area.

To some extent this is a new phenomenon; we have an enormously more difficult task in economic management than we have ever had before. For example ten years ago we would have bought the Seahawk and Blackhawk helicopters through the US Foreign Military Sales System. Now we buy them direct from the manufacturers and negotiate arrangements that keep a substantial amount of the expenditure in Australia. Consequently the financial

and industrial aspects of defence are now at the forefront, with all the problems, and promises, that that entails. It imposes extraordinary disciplines on defence ministers to make sure the system operates efficiently.

The onus of managing this system will rest more with the Navy than the other two services.

The fact of the matter is that for the next 10 to 15 years the Navy is going to dominate the capital equipment program. So our capacity to deliver an efficient defence capability is in no small measure going to be dependent on those who find themselves not so much commanding ships but commanding projects.

Those involved in planning arrangements and financial arrangements both inside the Royal Australian Navy and at headquarters ADF will bear a far greater responsibility than has traditionally been the case. Everything I subsequently say about naval strategy, where the faults lie, what the possibilities are, must be viewed against this background.

Let me detail this background a bit further by concentrating on the financial area. There are a number of ways of looking at figures on defence spending. One way is to point out that we are now down to our lowest percentage of expenditure of GDP on defence since World War II. Another way is to point out that we are still at 9.6 per cent of the government's budget which is 0.2 per cent up on the Fraser year averages. What these two figures suggest is this: the tolerance in this country is basically at an end. In other words, we are capable of sustaining and even slightly improving our share of the government spending cake, but that cake is going to be a shrinking one.

However it is important to realise that our economy is growing at well over 2.5 per cent per annum in GDP terms. So assuming a continuation of this growth and a reasonably stable currency, you automatically have a



Back Row (Left to Right): 1. CMDR Lemon; 2. RADM Carwardine; 3. John McMahon (ADI); 4. CMDR Agar; 5. Keith Snell (SMA); 6. Owen Culley (SMA); 7. CMDR Bloomfield; 8. CMDR Dowsing.
 Third Row: 9. LT Delamont; 10. George Greaves; 11. Barry Nicholas (Stanilite); 12. RADM Lynam (Retd).
 Second Row: 13. CAPT Noble; 14. CMDR Tapley; 15. Bob Spencer (CSA); 16. Garry Seaborne (AMECON); 17. Peter Rowe (Rockwell SAIP Systems); 18. Allan Page (CSA); 19. LCDR Hawke.
 Front Row: 20. CMDR Torrens; 21. Samus O'Farrell (Aviologistics); 22. Alan Simons (GEC Marconi); 23. VADM Hudson; 24. CDRE Calloway; 25. David Harvey (Thompson Sintra Pacific); 26. CMDR Coles; 27. LCDR Barnes.

continuing decline in the defence vote as a percentage of GDP.

Our ability to be realistic in the financial side of defence is but one of the areas where we are able to display a growing confidence in meeting the very substantial challenges we have before us. This is as true in the development of our defence policy as it is in the development of our foreign policy, economic policy or commercial and trade policies. The initiatives currently being pursued by my ministerial colleagues Keating, Evans, Duffy and Kerin, not to mention by the Prime Minister himself, are evidence of a robust and confident approach to the promotion of our national interests.

In developing the maritime dimension of our national strategy, for example, it is evident that we are coming to terms with the fact that our maritime strategy has two distinct but completely interrelated aspects:

- the self-reliant defence of our maritime approaches; and
- the cooperative promotion of our maritime interests.

Though this may appear to be a statement of the blindingly obvious, the ability to see beyond the reactive dimension of national strategy to the need to promote the security of our strategic environment, in concert with our friends and allies, affords us insights into how we can best handle the changes occurring around us. There is no doubt that Australia's area of primary strategic interest is undergoing massive changes now and that change will be its characteristic for the next decade or more. Cooperative promotion of our national interests is a new and to my mind exciting dimension to Australia's national strategy.

This is perhaps nowhere more true than in the development and employment of our naval and air capabilities. Our concentration on the formidable operational demands of the sea/air gap to our north has led us to realise that our strategic security depends as much on our ability to inhibit threats from arising as it does on our ability to respond comprehensively to threats if they do arise.

In developing a military strategy for the self-reliant defence of Australia, the factor which has emerged most clearly is the critical importance of effective operations in our seas and air approaches to the security of Australia and its direct interests. While those lengthy approaches provide substantial natural protection, Australia has significant interests in its offshore territories and maritime resources and in maintaining trade and communication links through those areas. Even more fundamentally, it is the ability to conduct and sustain

operations there which make the defence of the mainland manageable in any level of conflict.

Naval strategy now is far different from what it was at the end of World War II and during the forward defence era. In a sense having carriers made force structure planning all too easy for the Navy after World War II. Carriers were an outstandingly successful type of ship in World War II and continued this relevance in the era of forward defence which stressed force projection and a capacity for major inter-allied operations in areas immediately adjacent to us. Probably no element of our force structure was more dependent on the requirement that our principle allies remained forward and active in our region than the Royal Australian Navy. Consequently a decision by our principle allies to lower priorities in the region — in the case of the British to move out altogether — left the Navy's force structure far more exposed than was the force structure of the other two armed services.

So the carrier debate of the 70s and 80s had an air of terrible futility about it. Whether or not it was advisable for the fleet to have organic airpower was largely meaningless if you only had one carrier which was the only carrier operating in the region. There is basically no commonsense argument that could justify a naval force structure based on a carrier in the post forward defence era. The debate about whether there should be a carrier in the navy was a debate that failed to acknowledge fundamental shifts in our strategic circumstances of the previous 10 years.

The carrier on its own fell between two extremes. You could never have enough of them in the context of a country operating alone. South-east Asia anyway as an area of operations with a carrier without allies was too foolhardy, and paradoxically the South Pacific was too easy. Either way the priority for operations in both areas, while by no means negligible, could not be a principle driver of our force structure.

However, more importantly, what the carrier debate distorted and obscured were two critical developments that were taking place at the same time. The first was the emergence of a clear set of maritime priorities in an era of self reliance and the second was a very substantial naval re-equipment program.

Our strategy for the independent defence of Australia, set out clearly in the *Defence of Australia 1987* policy paper, demands that we have:

- surveillance and intelligence capabilities able

to identify changes in our strategic environment and to provide detailed information on activities in the maritime approaches;

- maritime patrol and response forces able to respond to credible forms of military pressure and to deny an adversary operational freedom in the sea and air approaches; and
- flexible, rapid reaction ground forces able to respond to any incursions onto Australian territory.

The influence of the maritime environment on this approach is all too clear.

Furthermore, while our strategy is essentially defensive in nature, it is by no means simply reactive and it does not exclude the use of tactical offence as an element in self defence:

- it calls for an appropriate mix of defensive and offensive capabilities;
- it acknowledges the importance, where possible, of meeting an adversary well forward in the sea and air approaches;
- it provides Australia with the flexibility to choose, as far as possible, the time and place of engagement with the adversary.

The importance of maintaining air superiority together with the possession of significant maritime and some strategic strike capabilities is clearly acknowledged. So too is the priority accorded to the protection of maritime focal areas and choke points. It is there that an adversary would have the greatest opportunity and capability to threaten our trade and to strike at strategically significant targets in the adjacent littoral area.

Some people consider that focal choke points are areas vaguely 12 miles off shore from Cairns, and 12 miles off shore from Tasmania.

In fact that is not the case. When we look at the physical basis of Australian trade such choke points could be seen as encompassing an area of more than 1,000 miles around the northern part of Australia and New Guinea, as well as out into the Tasman Sea and the Coral Sea, and into the Indian Ocean in both a southerly and northerly direction. They are critical choke points because they present any enemy with the greatest opportunity to threaten our trade in an unambiguously anti-Australian manner and would present an efficient ratio of targets to effort. So while it is sometimes erroneously argued that the navy ought to have the capacity to go anywhere there is a ship doing business with Australia, the reality is that for an enemy to operate much outside our own focal choke points involves an enemy in a course of action which will inevitably involve other powers.

Given the vastness of our maritime approaches and the range of interests which we may need to protect, the implementation

of an effective maritime strategy imposes great demands on the Australian defence force. The absolute prime requirement is the ability of the navy and the air force to operate together in a completely integrated way, reflecting the fact that the sea and the air constitute a single operating environment in the sorts of contingencies which we might credibly face.

A couple of years ago, the Government set in train some profound changes to the traditional command and control arrangements. In the context of tonight's oration, two of these changes are especially important:

- the appointment of the chief of the defence force to command the Australian defence force; and
- the appointment of the joint force commanders.

These changes not only reflected a recognition of the need to draw together our defence capabilities in a more integrated and — dare I say it — synergistic way, but also depended on the growing recognition of the unity of our strategic approach.

These changes were given a pretty thorough work-out during Kangaroo-89. K-89 was a most impressive and valuable exercise. It demonstrated the competence and skills of the ADF in our northern environment, and the enormous strides which the ADF has taken in recent years in gearing itself to the demands of credible defence contingencies. There will no doubt be many "lessons" learnt, and some of these will indicate areas where further improvements can be made. The exercise would be less the useful if it didn't! But, overall, K-89 was a most successful exercise and, as the CDF has said, "excellent value for money".

From my point of view, I thought that the test which K-89 provided for our new command and control arrangements was extremely valuable. Basically, the new structures worked well, especially at the "implementation" level. I thought that our younger officers displayed a thoroughly businesslike and professional approach to the conduct of joint and combined operations, often in physically uncomfortable and difficult circumstances. At a senior staff level too, the arrangements demonstrated how much more effective the ADF can be when operational tasks are viewed corporately. I know, of course, that there are still improvements to be made, and that the artificialities which an exercise scenario imposes would dissipate quickly in any real situation. Nonetheless, we are headed in the right direction, and the ability of navy and air force to operate jointly in the maritime environment was clearly demonstrated.

Changes in command control arrangements are, of course, only one aspect of improved "jointness". The further development of the ADF as a unified defence capability depends also on important attitudinal changes. This was one area where K-89 proved conclusively just how far we have come in so short a time. The rivalries which characterised inter-service relationships in the past now exist only in the inter-service sporting arenas, where they properly belong! The capacity displayed by upwards of 25,000 personnel to make the ADF work speaks volumes for the goodwill and common-sense of our current ADF leadership and membership. Their ability to transcend narrow institutional loyalties fills me with great optimism for the future.

To ensure that we can give effect to our defence strategy, the government has embarked upon a major re-equipment program to develop the balanced forces necessary to meet these priority tasks. Importantly, despite general economic constraints, we have not shied away from the firm decisions necessary to realise those objectives in an appropriate timescale.

We have achieved a position in naval shipbuilding where, in the context of the sort of budgetary constraints I have talked about, we can have confidence in our capability to construct the sort of navy that we need.

One of the reasons governments in the past tended to approve programs on a one or two-ships basis was a total lack of confidence that the Australian shipbuilding industry could deliver ships on time and at cost. These fears were probably well founded, and it is only very recently, and as a result of the enormous reforms that have taken place in our ship building industry over the last two or three years, that we are able to realistically start major ship programs.

The key capabilities being developed, with which you will be familiar include:

- the new construction submarines which can undertake surveillance, sea control and strategic strike operations;
- the two additional FFG's and the ANZAC frigates. These will bring the number of major surface combatants into line with our vast maritime surrounds and provide far more comprehensive focal area protection, particularly with embarked ASW and surveillance helicopters;
- an enhanced mine countermeasures capability drawing upon innovative concepts such as Australian developed sweeps on craft of opportunity and the locally built inshore minehunting catamaran.

Importantly, emphasis is being given to addressing capability in its widest sense — not just possessing portfolio equipments but the ability to maximise and sustain their operational effectiveness.

Major developments in relation to naval operations include:

- the two-ocean navy concept, supported by HMAS Stirling and acquisition of HMAS Westralia;
- development of indigenous industry support, particularly ability to adapt to environment, carry out repairs and maintenance — the new capacity for this on the west coast being particularly valuable;
- use of reserve to fulfil specialist roles (eg, MCM, NCS procedures) — freeing the regular forces and major combat elements for other roles.

These naval force developments are being complemented by the surveillance and air-borne capability specifically directed at protecting the sea and air approaches. These include the proposed network of over the horizon radars, and the introduction of an air-to-air refuelling capability and construction of new northern airfields to support operations by the RAAF's F/A-18, F-111 and P3C aircraft.

Taken together, these developments maximise the flexibility and capacity of the ADF to conduct and sustain effective operations in our sea and air approaches. They are an essential cornerstone for the defence of Australia as a whole.

The importance of possessing an effective maritime strategy and the capabilities to implement it are underlined by recent developments within the Asia-Pacific region. We are facing a strategic situation which is in some respects more fluid and complex than it was in the decades following World War II when there were less players.

The role of the superpowers is changing. Their long standing competition for global strategic influence based on military force has become focussed largely in Europe and the North Pacific. Beyond these, economic pressures have forced a significant change in Soviet policies. Glasnost and Perestroika signal a desire at least to exert influence through a more balanced involvement in global affairs, not simply through the projection of military power.

This new Soviet image, together with the economic burden of extended global military commitments, is in turn placing pressure on the United States to redefine its regional roles. Not only are there calls from within the United States for its friends and allies to assume a

greater part of the western security responsibility but tensions are emerging between the nationalist sentiments of some regional countries and the US interest in access to basing and support facilities there.

While the US remains committed to the security of South-east Asia, the form of that commitment may change in the future. The possibility of a US withdrawal from the Philippines raises particular concern. Without similar support facilities in the region, the effectiveness of the US presence may decline. The value of that presence in supporting stability in the region and limiting the potential for involvement by external powers with different strategic priorities should not be underestimated.

At the same time, there has been strong economic growth among a number of medium size powers bordering the Indian and Pacific Oceans. It has been accompanied by the emergence of greater confidence in their national strength and, in some cases, a concern to exert more comprehensive influence beyond their immediate borders.

Importantly, from the point of view of Australia and our neighbours, it is in the maritime environment that this new found confidence is being displayed. We are looking at a system of multiple centres of power not dissimilar, except for its scale and geographic character, from the European state system of the early 19th century.

The three key players to emerge have been India, China and Japan. Despite problems of poverty and a huge population, India has emerged as a substantial industrial power. It has developed the financial, industrial and technical resources to maintain armed forces that are large and effective. It has a vision of its place as the pre-eminent power in South Asia and the adjacent Indian Ocean and a concern to ensure that its interests and influence are fully protected.

Particularly notable has been the growth in India's maritime capabilities. While not ignoring its traditional land rivalries with Pakistan and China, India has developed an impressive blue water navy equipped with modern destroyers and frigates, conventional and nuclear powered submarines and two aircraft carriers. Support is provided by maritime patrol and strike aircraft. Its willingness to use these capabilities was demonstrated by its recent speedy thwarting of the attempted coup in the Maldives.

China too, despite its recent domestic political turmoil, is moving steadily to modernise its military forces. It is developing maritime capabilities able to protect its interests well into

the South China Sea. As its dispute with Vietnam over sovereignty in the Spratley Islands made clear, China has the potential to exercise significant influence within Australia's own region. While economic problems may slow its development, the concern to match its perceived regional role with appropriate military capabilities is unlikely to change.

The substantial size and capability of Japan's defence forces, has, until recently, been obscured by their strong emphasis on immediate defensive needs and the long accepted 1% cap on defence spending. It is, however, the third largest defence spender in the world by virtue of its overall economic strength and plays an essential role in western strategic power in the North Pacific.

While Japan's capabilities for extended power projection remain limited, its maritime capabilities are substantial — particularly in regional terms. It could be expected to be concerned should another power attempt to exert influence which threatened its economic interests elsewhere in the Pacific.

These developments have not been without consequences closer to Australia. Regional governments have expressed concern about the motives behind India's naval expansion. Lee Kuan Yew of Singapore has raised the prospect of a potential struggle for influence among external powers should the United States withdraw from South-east Asia. Recognition of the substantial natural resources available in maritime areas has similarly focussed the attention of our neighbours on the importance of their sea and air approaches.

Regional force structures, which have traditionally given priority to ground forces, are changing emphasis. Among the ASEAN nations, Malaysia is purchasing more than \$2.5 billion of defence equipment from Britain, including an Oberon class submarine for crew familiarisation and ASW training, WASP helicopters and maritime strike aircraft. Thailand took delivery in 1987 of two US-built harpoon-equipped frigates and plans to acquire additional frigates, mine countermeasures vessels and ASW Corvettes. Indonesia has recently acquired four harpoon-equipped frigates and two mine countermeasures vessels. Regional air defence capabilities are similarly being upgraded.

We need to recognise — or I should say more accurately, re-recognise, that the stability and strategic cohesion of the region contributes directly to our own security. Strategic planning has acknowledged for many years that any significant hostilities against Australia would need to develop through the maritime approaches to our north. Our security is closely

tied in with the stability of the ASEAN States in particular.

Australia is a substantial power in military terms in our region. We should not shy away from this, but we do need to accept that it creates certain expectations of US — particularly when responses to shared security concerns are under consideration.

We also need to recognise that our highest priority, maintaining military capabilities for the defence of Australia, is very costly and demanding. The more constructively we can contribute to a favourable strategic environment the more manageable our own defence requirements become, particularly in resource terms.

These points are not a prescription for Australia taking a major military role well forward of our shores. The old concepts of forward defence were based on very different premises. They involved not cooperative activities with regional countries but the substitution of our own capabilities for indigenous forces. Our primary combat forces were based well forward, together with those of our major allies, in regional countries. We did not have the capability to defend Australia ourselves.

That approach no longer has any strategic legitimacy. It is beyond available resources, does not accord with regional strategic realities, and would be contrary to the priority we attach to defence self-reliance. What they do highlight is the need for Australia to be prepared to contribute constructively within the region. It is the important proactive element of our defence strategy which I referred to earlier.

That we should consider Australia has an important role to play in this regard should come as no surprise. The all-too-stark distinction which has tended to be drawn in recent years between the defence of Australia and forward defence has, however, tended to obscure the quite substantial defence cooperation which has taken place between Australia and its neighbours.

Not only has Australia made a major contribution to the five power defence arrangements with Malaysia and Singapore, but it has provided significant support on a bilateral basis to the other ASEAN countries, including Indonesia and Thailand. Until recently, the focus of this cooperation has been on materiel assistance aimed at enhancing the ability of regional countries to provide for their own security.

The impressive progress they have made in this regard, supported by buoyant economics, has in recent years, however, brought about

a significant adjustment. With the development of more advanced capabilities and the indigenous capability to maintain them. The emphasis is squarely on cooperative activities and exercises of mutual benefit to both countries. Arrangements developed in another era have been remoulded to meet current needs and to recognise the common interests Australia has with its neighbours in ensuring that external powers do not have opportunities to affect strategic cohesion and stability within the region.

Changes to the five power defence arrangements illustrate clearly how traditional links are being given contemporary relevance. The deployment of advanced F/A-18 and F-111 aircraft to Malaysia and Singapore on a rotational basis represents a substantial enhancement of the training value of those exercises. The deployment of a major RAN surface vessel to South-east Asian waters to compliment these has provided the basis for a wide range of maritime exercises and training.

More generally, Australia has continued to conduct extensive maritime surveillance operations with P3C LRMP aircraft operating through Butterworth in Malaysia. The monitoring of the important sea lanes in the South China Sea and the Straits of Malaysia is a valuable contribution to regional surveillance efforts. Exchanges of information on issues of common security concern are, with changing strategic circumstances, assuming greater significance.

In PNG and the South Pacific, Australia's potential strategic role assumes a wider dimension. As the largest power, economically, military and geographically, our actions are a primary determinant of the direction and nature of strategic cooperation and a major influence on regional stability. At the same time, while the island nations value our contribution, they have a strong sense of their independence and an expectation that we will remain sensitive to their concerns and priorities.

The new security commitment concluded with Papua New Guinea in 1987 brought that relationship into line with the five power defence arrangements with Malaysia and Singapore. It recognises the special strategic relationship which exists between Australia and Papua New Guinea. Our significant areas of common security concern, and the mutual benefits arising from close defence cooperation.

Supporting Papua New Guinea's ability to provide for the security of its own territory and surrounding maritime areas and to manage its own affairs is of direct benefit to our own

security. Accordingly, cooperative defence activities are now focussed on a number of key areas. The provision of additional patrol boats to the PNG defence force has been complimented by increased P3 surveillance and naval patrol deployments. On land, projects are currently directed towards developing defence related infrastructure and improving the tactical mobility of the PNG defence force, including the recently announced rotary wing capability.

Among the island states of the South Pacific, our defence activities are similarly balancing the contribution we can make to strengthening strategic cooperation in areas of mutual concern while enhancing the ability of those nations to manage as far as possible their own security, particularly economic, affairs. The Pacific Patrol Boat Project, the development of a regional surveillance centre and network, and the conduct of air and surface surveillance and patrol operations by Australia represent a most substantial contribution to meeting South Pacific strategic priorities.

Such relationships must always be characterised by sensitivity and mutual confidence. In this respect I welcome the trust which both the Papua New Guinea and Vanuatu Governments have recently displayed in Australia when requesting assistance to maintain internal law and order. Such situations when they do arise are most unfortunate and the nature and extent of any Australian involvement must be considered very carefully. At the same time, the confidence which those nations displayed in Australia's willingness to provide support while not attempting to impinge upon their sovereign responsibilities bears ample testimony to our strategic standing.

Australia's most substantial defence relationship has been with the United States. As I noted earlier, the United States own role in the region is coming under significant pressure. It has long been recognised that Australia does not have the resources, nor would it be appropriate, for us to attempt to step into the shoes of our major ally within the region.

At the same time, those developments do highlight the importance of Australia contributing where possible to maintaining the strategic cohesion and stability long valued by both the United States and our regional neighbours. Those activities, together with combined exercises and the present availability of port facilities and over flight rights in support of United States activities in the Indian and Pacific Ocean, make a valuable contribution

to our own security and the interests of the western strategic community more generally.

New Zealand and Australia similarly have a proud tradition of defence cooperation beyond our shores. Changing strategic circumstances, including the differences which have emerged between New Zealand and the United States, have tended to focus that cooperation on our shared strategic interests within the South Pacific. Even in that more limited context, however, the importance to Australia of pursuing common security goals and of New Zealand maintaining significant military forces to support them remained unaltered. Despite the suspension of defence cooperation between New Zealand and the United States, Australia is continuing to participate in substantial bilateral activities with New Zealand. Through the ANZAC frigate project, we are seeking to ensure a continuous basis for effective maritime cooperation throughout the South Pacific.

Tying these regional initiatives together with developments in the direct defence of Australia, I believe we have for the first time an integrated defence strategy. It is one which seeks to maximise favourable aspects of our strategic circumstances while providing substantial insurance against the possibility that a direct threat may emerge at some time in the future.

Importantly, it is a strategy which reflects Australia's significant role in regional security affairs and our ability to act confidently in the pursuit of regional strategic cohesion and stability. There are undoubtedly important limits to our capacity to participate, but equally there are important opportunities and expectations that we should do so in certain areas. And to the extent that we do so, we are enhancing our own direct security prospects.

Our defence strategy for the maritime environment, which I have outlined tonight, is perhaps the key element in this overall approach to the self reliant defence of Australia. It recognises the critical importance of the sea and air approaches to our own defence and the valuable contribution which capable maritime forces are able to make to our wider security interests and those of the region. Defence in depth comes not just from the ability to act comprehensively in surrounding maritime areas but from the way in which activities in support of alliances and regional associations make the prospect of a direct military threat emerging far less likely.



QUESTION-ANSWER PERIOD

(Editorial Note. The first question was omitted due to incomplete transcript)

Question. How do you see the impact of India and its Naval build-up in recent times? What sort of effect do you see it having on Australia's Naval restructuring?

Mr Beazley. I think I ought to start my remarks in answer to a question like that by saying we have good relationships with India, it is in our interest to improve our relationships with India, we ought to look for opportunities to be friendlier, and it was a terrific thing when the Indians sent a ship to the recent Fleet Review. So, anything that I say has to be prefaced against that background, and as far as I can see, we don't have any clashing interests. But India's situation is symptomatic of what is happening in our region overall, and will be the dominating political factor at the turn of the century. All of a sudden, our region is getting wealthy. I think the problem that most of us have is that we have been brought up with the image of India and Asia that originated from church ricebowl appeals, or the equivalent sort of activity, that we've had in schools from time to time. Whilst laudible, we missed the fact that India will pass France in GDP terms at the turn of the century. Of all the races on earth, the race with the highest number of PHDs is India, and India has a middle class of at least a hundred million or so, which makes it bigger in that regard than virtually any European Nation. You've got a major power developing in the area of the Northern Indian Ocean. But you've also got some substantial capabilities being developed by China; and Japan is becoming increasingly important both politically and economically in the area. And you've got the Soviet Union still stating that it's going to play a role in Pacific affairs, with the United States a country not to be ignored. What you are talking about now is a complex set of arrangements and relationships such that we have never had before in this area; at least within the living memory of Australians.

India is part of that process. We are going to have a complex interrelationship between big powers, and medium size powers, which just about includes everybody else in the neighbourhood, and I'd like to think ourselves too. That is not a situation to be feared. It is clearly a set of political circumstances which all our planners, including our military planners have to take into account.

Question. Minister, I'd like to make a comment first, and then ask your views on I think one of the current issues. The issue is, the capital equipment program, and I think that issue faces not only the uniformed and non-uniformed members of the Defence Force, but also we in industry. I think we as a partnership, are going to have to manage that capital equipment program. What are your views on both the strengths and the weaknesses of that partnership in Australia to be able to handle the program?

Mr Beazley. Well we've done I think an awful lot better than anybody could have anticipated over the last four or five years in approaching management and in getting industry up to speed to deliver what we need. But we have imposed enormous strains on Australian industry. Particularly, I might say, on the competitive element of it. I think if you look objectively at our ship building industry, and our electronics industry, over the last few years, what you've seen is an industry that was developing a whole raft of companies with expertise in specific areas. Gradually, via both takeovers and consortiums, the number of companies has come down to just a few, and basically what our Australian industry has recognized, is that some of the projects that they have to address in the Defence area, and Telecom for example, are so large that they simply can't operate on the sort of small penny packet basis that they have in the past, and perhaps that's happened most dramatically in the ship building industry (e.g. Transfield). In the electronics industry, with a whole raft of companies buying each other out, this process is continuing and we'll probably get down to three or four companies over time. Three or four substantial companies, and hardly anything else. So in a sense what we've done, at least in part through the Defence budget, is force industry to face up to the big picture of contemporary industrial structure. I think we have imposed upon the Services themselves, enormous strains in project management where there are some substantial training and planning inadequacies. I don't think we have fully appreciated how many people we need, both to manage projects, and to sail ships for example. Then impose on top of that, what I think has to be a burgeoning area; that is, managing projects after the projects and contracts have been let; where we are capable

of losing huge sums of money, and may indeed be doing so. Then you have an even greater problem being imposed on the manpower resources in the Armed Services and on training in particular. Both inside the Department of Defence, and the Services, often the process of training has taken place but there has been disappointment at delivery of the goods. In fact, they're in a position where they are businessmen, and as important as delivering the goods is the delivering of the price. Now, in our Defence Force Academy here, and in arrangements that we've established with other training authorities, we're trying to get in place, the sort of courses that we'd need to address the problem. But as with many areas of Australian technical endeavour in the engineering field, we are now addressing problems that we should have addressed around about 1975.

Question. Minister, it seems to me that one of the problems, in the area of Defence and Foreign Affairs, that the government is going to have to address over the next years, is the stability of the region that we live in, and in particular the internal stability of regional countries. What role do you see Australia playing in that context; what part would you see the Defence Forces contributing to that role, and how do you feel our current structure is for that purpose?

Mr Beazley. Well, I think the structure is fine, because of the process I think we're engaged in. We are not, or rather Government has no intention, despite a bit of left wing rhetoric from some people about what our real intentions are, of doing the job in those areas ourselves. What we do have an intention of doing, is being a good neighbour in the sense of providing technical capabilities. Now some of that is through exercises and bringing the Armed Forces of these regional countries up to speed with the new equipment that they are themselves absorbing, and I've already addressed that. A lot of it has to be done through the Defence Co-operation Program (DCP), as illustrated for example by our situation in Papua New Guinea (PNG). I don't think that it sensible, as people have suggested, to contemplate, not even if an invitation were forthcoming, and one would not anticipate the invitation to be forthcoming, to do jobs directly ourselves. But it is very important to us, that we maintain, through the DCP, the program that is desired by the Papua New Guineans, so that their Armed Forces can maintain internal stability. Therefore it was important to respond positively, after we'd developed

reasonable agreements on constraints, to a requirement to develop an air mobile capability for the PNG Defence Forces. It is important for us to address the various elements of their training requirements that they have put forward to us in terms of both technical and operational capabilities of their armed forces. One of the interesting things to note is that, for very sound management reasons, the aid budget overall in relation to PNG has been steadily declining over the last few years is, however our DCP has been steadily rising in real terms, as it has been rising in real terms in the South Pacific, and I would expect that this will be our focus. What you will see is not commitments of large groups of Australian Armed Forces, but commitments of Australian individuals to ensure that where there is a requirement for the armed forces of a particular country to contribute to that country's stability we are there providing them with assistance.

Question. Minister, you referred to New Zealand's Defence Budget problems in the past, and you have indicated that they don't have a price deflator, and at the moment there is also a cap on the budget; which means to say that the budget is declining very significantly in real terms. If we can assume now that they're going ahead with the ANZAC Frigate project, I'd like to ask you a question concerning how the two things can be reconciled, and also the problems arising from that. Is it not at least a possibility that the purchase of the Frigates will effectively govern the capital equipment acquisition programs for their other Services, and indeed also for the sensors and respective weapons systems, which could go into the New Zealand ANZAC Frigates as well? If that's the case, firstly, does it not undermine the value of co-operation with New Zealand because of that? Secondly, how far can you go in underwriting New Zealand's participation with the project?

Mr Beazley. This really is a question I would rather have had tomorrow night, because I noticed Frank Cranston in the back row. While I'd like to answer rather frankly, there are some things that are in the answer to that question that I really wouldn't care to comment on. I'd say that I'll give these impressions. I've had the benefit of extensive discussions with Minister Tizard, and they are at least as across these problems as anyone else around the place as you can expect them to be. I do think they believe that they have achieved the payment schedule, which will enable them to do the things that they need to do, and to be

participants in the project. I would think too that they believe that they have achieved the risk guarantees, which they would think would allow them to be participants in this program. I'd draw attention to the fact that they are not without personal preferences and views about the structure of armed forces, and Bob Tizard has a major advantage over me in that he has a particular loyalty having been a Serviceman, and it's not the Navy, and he is a man who is deeply interested in for example, aircraft for the New Zealand Air Force, and he's not thinking of a PC9. So I think that what we must do is be much more sensitive to New Zealand than we have ever been. I think really, when you look at the history of the relationships between our two countries, it's really only in the last two years that we really addressed each other's defence needs in a sensible fashion.

And it's extraordinary, given that we have this self image of enormous co-operation in conflict, but how little we have been able to translate wartime co-operation into anything meaningful in peacetime; particularly in terms of contingency and strategic planning. We've started to deal with that, but why should I be saying that now? Somebody should have been saying that 80 years ago, and I think the ANZAC tradition that people like to talk about, really has only manifested itself in those years of war, plus the last two or three years on the ANZAC Frigate Project. So it's an entirely appropriate name for it, because at least in my experience it's the first time that we ever sat down with our New Zealand colleagues; and I think looking back over the historical records this is the first time we have actually considered how do we defend and conduct the maritime defence of our region. Doing it through the Frigate Project was the first time we've ever done it. I think they've had a tremendous argument about it in New Zealand, the argument continues, and there are strong voices being raised against participation. If the Frigate Project carries, I think it's an enormously important statement to this country that we ought not to forget. If they carry that project, they are saying: *"we really do believe our defence with you is joint, we really do want to integrate our activities with you"*. And that is a message which I fear may be lost on a lot of Australians. It won't be lost on me, because I've had to live with it. But it will be a very major strategic statement. Writing a White Paper was easy. Putting it into practical effect is extremely hard, and their White Paper said Australia and New Zealand is a strategic entity. This makes it a strategic entity, and it's a very difficult thing for them to do.

Question. You talked about the extension of the DDGs beyond the turn of the century. What do you envisage might ultimately replace it?

Mr Beazley. Well that ought to be addressed to Admiral Hudson, because he's likely to have more longevity than I have. There is no doubt that I think that there is a view inside the Navy that at least one thing for consideration is an upgraded version of the ANZAC Frigate. I think that's a very strong view, and I would say, as a commentator, on what I think a future Defence Minister will decide around about the year '97, '98 — perhaps even earlier — is that it would be a sensible decision. We have a build program under way that will do one thing for you. It may be hard to address, in cost terms eight of what we now describe as first tier ships; but in fact a more sensible course of action may be to settle for four modified ANZAC frigates to replace the three DDGs, and then sit down, with the six FFGs in the program after that, to work out whether you need four or five of some much heavier class of ship and still maintain the same numbers. But you would give yourself an option to put a great deal more on your first tier ship. The first tier ships around the globe have got away from the FFG/DDG category, and they've got away from it far enough for us not to be able to contemplate eight of them. If I was a betting man, I'd bet that is the way it would go.

Question. At a global level, peace seems to be taking over lately. Most Western commentators say the Western Defence budgets stand to decline quite significantly in the next few years, but as you have said in the beginning of your talk tonight, we seem to be holding up pretty well in Australia; and our major capital equipment projects, the ANZAC ships and new submarines respectively, have attracted probably remarkably little critical comment from the Australian public. You're more in touch with the Australian public, and their attitudes to Defence, than we in the Defence Services are. Could you give us your impressions of the Australian public's attitudes to Defence and how it might change in the future.

Mr Beazley. I think it's something that you have to weigh very carefully. I think one of the criticisms that we did have, when we prepared the White Paper and released the report by Paul Dibb, was a criticism, at least in the main from academic circles in the United States, is that we were failing to address the main Western threat. Nobody really in this country took it very seriously, but it did impose on me a very substantial obligation, when I was in

the United States at the time, to explain in very great detail, what it is we were on about. And what I had to explain was that we were unique, and we did not present to our region the way in which the rest of the Western Alliance presented to theirs, and that we had to confront regional problems in which to be reliant upon somebody else's activity would considerably constrain the Australian political process. So I think there has been, and particularly as a result of those White Papers, a development of thinking on Defence in this country that comprehends that we just don't have the same problems as the rest of the West, and the fact that there is very healthy developments between the Soviet Union and the United States doesn't say the last word about the Australian Defence requirement. Now, that's a very different position from Governments that are operating in Europe and the United States. I think that's a fairly commonly accepted position. In a funny sort of way, the Left Wing side of the debate in this country over the years has assisted this. Whether it continues to in the future, I don't know. The constant argument was made that we were overly committed to Alliance relationships, and I don't happen to approve of that argument. But that argument was made and it developed a considerable intellectual saliency in our media, and in our universities, schools and academic institutions, and was transmitted to a very substantial proportion of our young population, both during and after the Vietnam War. But it wasn't a view that was expressed with an argument that what was required of Australia was for it to be a pacifist nation. In fact, the strongest position was the armed neutral position. In other words, nobody was arguing that Australia didn't have Defence problems. People were arguing that we were addressing the wrong ones. So there is as a result probably greater insulation, if you like, against an excessive attitude to prune the defence spending in this country, than there is in a lot of others. But it does mean that you have to keep your arguments rational. You have to be absolutely certain that when you present your Defence case — and that's why the Kangaroo '89 exercise drew such enormous public and media support. The media picked up the faults in it, picked up our faults in it or whatever, and had their disagreements, and there were the usual plethora of letters saying we shouldn't spend that sort of money. But overwhelmingly the response was that whatever faults come out of this exercise the Defence Force is actually getting it right. They look as though they know what they want to do with their equipment, and what they want to do is

rational, and there is not too many Defence Forces around the world now that can conduct an exercise in front of its public and have such an impression emerge. I think we're in for very substantial difficulties, but this is also true for the rest of the countries in the Western Alliance over the next few years. When I was in Britain recently, at Fleet Headquarters, they pointed out a very interesting statistic to me on the question of where the NATO Alliance was going. Everybody seemed to agree, large numbers of troops had to leave Europe and return to the United States. This however, raised substantial force structure issues on which nobody appeared apparently prepared to address. The problem is not returning the troops to the United States but what if they have to come back? A very interesting statistic was given to me, as to why all of a sudden, a massive emphasis was likely to come onto sea transport capabilities. It will raise massive issues in terms of pre-positioning, force structure issues, because in the United States, for example, the view that's put is that everybody comes down; we all get pruned. The next problem for the United States is to address, something that it has not done before: the continental defence of the United States, and that raises all sorts of things. Space — space radars, fighter interceptors, fighter bases, and protective measures against cruising submarines. There are enormous force structure problems developing as a result of these substantial shifts in the politics of the relationships of the Western Alliance, which I don't think anybody has started to address at all. I think an awful lot of people are going to develop Defence strategies that are going to be Gullivers to our Lilliput, but nevertheless with substantial similarities.

Question. Nuclear capability. The French are persisting with their nuclear testing in the South Pacific. There have been rumours in the press that Indonesia is getting a nuclear power station. What is our (the Australian Government) attitude, or rather what should be our attitude to acquisition of nuclear capabilities by regional states?

Mr Beazley. Well I think that in respect of all weapons of mass destruction, and the delivery systems associated with them, we have to take a very strong stand and try and get regional agreements not to introduce these systems. I think actually the problems of chemical weapons would be more significant in fact than nuclear weapons over the next decade or so. But we really haven't sat down and done a great deal of thinking about it. The most sensible

thinking we can do at this stage, where people are talking about thresholds as opposed to crossing these thresholds, is to try and set in place agreements not to cross these thresholds. It think everybody now has enough basic understanding of arms races to know that in the final analysis if somebody develops some system somebody else will develop a counter and that gives us a chance. But my argument would be that at this point the most sensible thing for us to do is what we are in fact doing, and have achieved a considerable international reputation in so doing — as evidenced by the fact that we're hosting the chemicals weapons conference to advocate bans and limitations.

PRESENTATION TO MR BEAZLEY

CDRE Callway. The Vernon Parker oration is an occasional address by an eminent speaker on a subject relevant to the principal aim of the Institute. This is to encourage and promote the advancement of knowledge related to Navies and the Maritime profession. I intend that the Oration give the Institute membership,

especially the more junior membership, a chance to listen to speakers they frequently hear about but never hear. I have an additional aim. It is my objective for 1989, and 1990 if that be necessary, for the Institute to improve its profile, and membership become accepted as an important element in the development of a Naval person's career. I hope the Friends of the Naval Institute will help me and that the success of the Vernon Parker oration, which was launched this year, is a critical element of the campaign. Minister, if I continue to receive the support of figures such as you I will achieve my aim. Your contribution to Defence thinking in Australia has been significant. The decisions taken during your stewardship of the Defence portfolio has been of major importance to the RAN, and will affect its capability to defend Australia until well into the 21st Century. You have helped me increase the profile of the Naval Institute, enhanced the reputation of the Vernon Parker oration, and you have advanced our understanding of Defence matters. To signify the importance of the Vernon Parker oration, the Council has had struck a special silver medallion, for presentation to those who deliver the oration. I ask you to please accept this silver medallion as a token of our appreciation for the effort that you have put into supporting me tonight.



ALL MAKES
Service,
repairs,
modifications.



Westinghouse

TRANSFORMERS Testing, repairs, modifications
MOTORS Repairs, modifications and load testing
SWITCHGEAR Repairs, overhauls and
breaker retrofits
ENGINEERING Field services
Sydney (02) 724 7322, Brisbane
(07) 375 3988, Perth (09) 330 1554
Melbourne (03) 689 6387

Service,
repairs,
modifications.



Westinghouse

TRANSFORMERS Testing, repairs, modifications
MOTORS Repairs, modifications and load testing
SWITCHGEAR Repairs, overhauls and
breaker retrofits
ENGINEERING Field services
Sydney (02) 724 7322, Brisbane
(07) 375 3988, Perth (09) 330 1554
Melbourne (03) 689 6387

*Westinghouse, suppliers of main propulsion motors and
generators to run new submarine project under
licence to Jeumont Schneider.*

**Be it above, on, or below the surface
you can depend on**

GEC MARCONI DEFENCE

373 Horsley Road
MILPERRA NSW 2214

Telephone (02) 772 7444
Facsimile (02) 792 1360
Telex AA 120807

INDONESIA'S PERCEPTION OF SLOC IN SOUTHEAST ASIA

by

Major General Subijakto
Governor of the Institute for National Defence

Introduction

An appreciation of *Indonesia's Archipelagic Outlook* and basic doctrine of *National Resilience* is a sine qua non for understanding her basic attitude towards SLOC.

Hence later I will discuss these basic concepts; this will be followed by Indonesia and ASEAN commitments to ZOPFAN and SEANWFZ, a description of our appreciation of the nation's strategic environment, and finally a discussion of our role in safeguarding SLOC and possible ways of cooperation with friendly countries.

Here we would like to point out and emphasize that our *Archipelagic outlook* is the culmination and concrete manifestation of our historical seafaring tradition and that is based on the realities of geopolitics; whereas our doctrine of national resilience grew from our historical experiences as a fighting nation since the proclamation of Independence to determine our destiny in accordance with the principle of self-determination, without attaching ourselves to either bloc in the Cold War.

Indonesia's Archipelagic Outlook, Doctrine of National Resilience and Regional Resilience

Archipelagic Outlook

The *archipelagic outlook* that is Indonesia's national outlook, considers an archipelago as a "sea studded with islands, implying that the sea element is larger than the land element" or "a group of islands and other natural configurations which are interrelated closely, so that they form intrinsically a geographic, economic and political unity". (*National Resilience*, issued by Indonesia's Institute for National Defence, Jakarta, November 1974).

Indonesia's archipelagic outlook is the result of a long historical process dating from pre-colonial days; it was officially proclaimed as

Indonesia's national outlook in 1957 and this was followed by the issuance of the Act on Indonesian Waters No. 4/1960.

Here we would like to point out and emphasize that the archipelagic outlook has been accepted as an international principle of the Law of the Sea as contained in part IV of the U N Convention on the Law of the Sea, 1982. This U N Convention on the Law of the Sea was signed by 119 states in the Montego Bay conference in Jamaica (December 6-10, 1982), and 35 countries have already ratified it. Indonesia has also ratified it by National Act No. 17/1985.

Sovereignty of an Archipelagic State

The sovereignty of Indonesia as an archipelagic state extends over a) her group of islands and other natural configurations enclosed by the archipelagic base lines; b) her territorial seas extending to twelve nautical miles measured from the archipelagic base lines; c) the air space over above mentioned territory, and d) the sea-bed including its subsoil with all its natural resources in the above mentioned territory.

The Right of Passage

In accordance with articles 51 and 52 of the U N Convention on the Law of the Sea, the Archipelagic State recognizes the right of passage for ships of all states through her archipelagic waters. Unless determined otherwise — because of safety, pollution and/or other factors — the right of passage for all ships through straits in her archipelagic waters that have hitherto been used for international navigation, will be upheld.

National Resilience

The definition of national resilience that Indonesia's government has adopted as its

national concept/doctrine in 1974, reads as follows:

The dynamic condition of the nations which includes tenacity, sturdiness and endurance enabling her to develop such a national strength that is capable to cope with any threat or challenge from within as well as from without, either directly or indirectly endangering her existence, national life and her pursuit of national goals.

This concept is based on Indonesia's basic philosophical outlook of Pancasila and her experience, particularly during the long struggle for Independence. It developed originally from the integrated ideological, political, economic, socio-cultural and military approach that was, subsequently enlarged into the *Astagatra* or eight aspects approach, to wit: the three natural aspects (geographical, natural resources and potentials & capabilities of the people) and five social aspects (ideology, politics, economics, socioculture, defence & security) approach.

It is clearly a defensive concept/doctrine that is inward looking in nature to build up her national strength while stressing cooperation and consultation with her neighbours.

Regional Resilience

After national resilience has been adopted as Indonesia's national concept, it was discussed among the ASEAN countries in order to reach a common definition for regional resilience that was later accepted by the Manila summit of December 1987.

To the Indonesian definition as mentioned before, the Thai working paper added: "National resilience is basically defensive in nature, aims at developing a nation's own strength and capabilities to safeguard its interests and at the same time promote cooperation between nations and groups of nations for mutual benefit".

To this should be added Foreign Minister Adam Malik's statement of regional resilience in the 5th ASEAN Annual Ministerial Meeting in Singapore in 1972 as follows:

"It is to enhance the capabilities and abilities of each member country and people in all fields of national endeavour, in order to withstand and overcome all kinds of outside interference and adverse influence, harmful to its sound and harmonious development".

Whereas Malaysian Foreign Minister Tan Sri Gazali Sjafei added:

"The notion of regional resilience may be defined as the ability of each state in the region to be fully committed to their organizational interrelatedness and interdependence as the first principle of foreign policy.

ASEAN is clearly a first step in that direction".

These and other inputs have temporarily led to the following definition:

"The dynamic condition of a group of nations in a region which includes tenacity, sturdiness and endurance, enabling the development of each nation's national resilience in the spirit of regional solidarity, cooperation and loyalty, capable of coping with all threats and challenges coming from within as well as from without, that directly or indirectly, endanger the existence, the national life and the struggle of those nations and at the same time also endanger the interests of the region as a whole".

The concepts of national resilience and regional resilience that have been adopted by ASEAN, provide this regional organization with her own ideological foundation based on her own values and *Weltanschauung*.

The meeting of the ASEAN senior officials of ZOPFAN (Zone of Peace, Freedom and Neutrality), held in Bangkok on June 10, 1978, agreed that the concepts of national resilience and regional resilience contribute significantly to the philosophical basis for ASEAN cooperation and solidarity.

Regional resilience is an on-going process which is already developing among ASEAN member countries by strengthening regional cooperation, alongside the effort to enhance their own national resilience. Its aim, to quote Indonesian Foreign Minister Adam Malik again is: to "consciously" work towards the day when the security in their own region will be the primary responsibility of the Southeast Asian nations themselves.

Indonesia and ASEAN Commitments to ZOPFAN and SEANWFZ

Since its foundation in 1967, the member-states of ASEAN have been of the view that the countries of SEA share a primary responsibility to strengthen the economic and social stability of the region and thereby minimise intervention and interference by extra regional states. They expressed their conviction in the Bangkok Declaration that all foreign bases were temporary in nature, and they agreed to review issues of common concern affecting the region, believing that by harmonising their views and policies, they would contribute to the peace and security of all nations in SEA.

These principles were reaffirmed and further developed in the Kuala Lumpur Declaration on South East Asia as a Zone of Peace, Freedom and Neutrality in November 1971 (ZOPFAN). Subsequently the Declaration of ASEAN Concord in 1976 called for immediate steps

to recognize South East Asia as a Zone of Peace, Freedom and Neutrality.

The Zone of Peace, Freedom and Neutrality constitutes the general political framework within which all the states of SEA would practice political consultation and reciprocal restraint.

An important element of the ZOPFAN idea is the concept of South East Asia Nuclear Weapon Free Zone (SEANWFZ). It provides additional substance to the meaning of ZOPFAN. It would commit the nations of SEA to enhance regional peace and security. This aspiration has been adopted in the Manila Declaration 1987 (3rd ASEAN Summit) within the framework of political cooperation; and ASEAN should intensify its efforts to achieve the early realization of ZOPFAN and to the earliest possible establishment of a SEANWFZ.

For this purpose all efforts should be intensified through consideration of all aspects relating to the establishment of the Zone and consultations with other states in SEA as well as with outside powers for the purpose of obtaining their support for the zone.

The Strategic Impact of the Asia-Pacific Environment on Southeast Asia

Following the Sino-Soviet split, the Sino-American rapprochement and the emergence of the USSR as an active player as perhaps best testified by her naval power and Gorbachev's Wladiwostok statement of July 28, 1987, a new big power constellation has emerged in the Asia-Pacific region that can be summarized as follows:

US-USSR confrontation or rivalry in which the PRC maintains a neutral-benevolent attitude towards the former has since replaced the Sino-American confrontation of the 50's and 60's. Interaction between these three powers and America's ally Japan — that has emerged as an economic superpower in her own right — has ever since determined the basic pattern of developments in the region.

This new big power realliance was fatal to Lon Nol's Kamboja and Thieu's South Vietnam, but proved generally beneficial to the other Southeast Asian nations who no longer had to choose between their *giant neighbour* and the Asia Pacific power *par excellence* in the region.

However, Ho Chi-minh's Vietnam felt "betrayed" by their erst-while staunch Chinese ally (like Taiwan, and the above mentioned Kamboja and Vietnam that felt "betrayed" by the USA!) and felt it had no choice but turn

completely towards the Soviet Union in facing the American bombing to win the Vietnam War. This provided the USSR with the unique opportunity — that she did not fail to realize — to establish a foothold in Southeast Asia so as to counter the American bases in the Philippines and threaten the Chinese from the south.

This understandably irritated and antagonized the Chinese who felt their assistance to the Vietnamese cause — Deng Xiaoping has mentioned the not inconsiderable amount of US\$10 billion — did not deserve this.

The result was that they supported the anti-Hanoi Pol Pot-led Khmer Rouge, and subsequently carried out a "punitive expedition" against Vietnam following the latter's invasion of Kamboja.

With regard to Indonesia, it can be stated that the New Order that came to power in the mid-sixties, became alienated from the communist world in general and the PRC in particular because of their sympathy with and/or support for the Indonesian Communist Party. Hence that in looking for assistance, investment, trade and cooperation, she looks towards the west and Japan without sacrificing her traditional free and active foreign policy that was inherited from her Founding Fathers.¹

That is to say, Indonesia should not join either the western or communist bloc, but actively work to realize her own ideals and world peace. This policy still stands today. Hence that Indonesia consistently refuses to take sides in the superpower rivalry since this will only aggravate tension in the region that could never be conducive to her economic development and world peace.²

Moreover realizing that a harmonious environment is a *sine qua non* to realize her national objective of economic development, Indonesia moved rapidly to end confrontation, and with her neighbours subsequently established ASEAN in 1967. And as we all know, ASEAN adopted in November 1971, the orientation of ZOPFAN that still stands today.³

Even though much criticism have been levelled at ASEAN's slow progress in achieving positive results, yet here we would like to point out that this was caused because, until now, most of ASEAN's attention and efforts have been directed at laying the necessary foundation — like reducing mutual suspicions and misunderstandings and creating better mutual appreciation and understanding — for a sound ASEAN cooperation. Much still remains to be done but ASEAN has already been acknowledged as one of the few successful regional organizations.

It is consistent with this line of thinking too, that Indonesia accepted the role of *interlocutor* that is trying to bridge the differences between ASEAN and Vietnam based on the *common national aspiration* that the Southeast Asia nations should be master in their own region while recognizing the legitimate rights — like economic, commercial, political, etc. — of interested powers in the region.

Moreover Indonesia realizes that the continued existence of ASEAN and the Indochinese bloc that are hostile to and can be played out against each other, could only prevent the realization of above mentioned aspiration and continue intervention if not rule by outside powers in the region. This Indonesia is determined to resist.

Besides, the various territorial claims of the coastal states on the Spratly, Paracel and Natuna islands, offshore terrorism, acts of sea-robbery and sabotage can have a strategic impact on Southeast Asia.

To sum up Indonesia's perception of her strategic environment:

1. It is Indonesia's considered opinion that the USA is still the strongest force in the region, even though she no longer dominates it as before because of the emergence of the Soviet navy. However, it will take the Soviet some time before she can reach *qualitative parity* with the American military presence in the region, whereas in other fields — like economic, scientific and technological, educational, cultural, etc. — she is no match for the Americans.
2. The Japanese economic superpower's role is no longer limited to economics, but has also expanded in the other fields like politics, defence, etc. Indonesia realizes the necessity of Japan's present defense role of the sea lanes radiating a thousand miles from Tokyo, but any further expansion of this role should be carefully considered.
- Even though her defense budget is now slightly above 1.1% of her GNP, yet is already the third largest defense budget in the world after that of the USA and the USSR.
3. Indonesia also realizes that the success of China's modernization will have a big impact on Southeast Asia that has to be taken seriously into account.
4. It can not be denied that Indonesia tries to bring ASEAN and Vietnam together through the common denominator of Southeast Asian nationalism, that rejects foreign domination or even rule that has been the case with all the Southeast Asian nations in modern time.

This nationalism should be based on the spirit of cooperation and interdependence but should not be narrow or extreme since this could only be harmful if not outright dangerous to the region.

5. To prevent Southeast Asian nationalism from becoming narrow or extreme that could be a negative factor in regional and/or international affairs, the ASEAN nations are developing the concept of regional resilience that is stressing regional cooperation, based on the principles of mutual understanding, mutual respect, mutual confidence and mutual assistance for the common good of the region.
6. The ASEAN nations including Indonesia are, at present and in the foreseeable future, focussing on economic development so as to bring prosperity to their peoples. Historical, realistic and other factors account for the fact that ASEAN is looking towards the West and Japan in trying to realize this in the shortest possible time without, however, forgetting their own identity. Hence they are advocating the concept of regional resilience as mentioned above.
7. Obviously the above-mentioned basic change in the Asia-Pacific power constellation can not but vitally affect SLOC in Indonesia's archipelagic and ASEAN waters, especially considering the strategic geography of Indonesia and ASEAN between the Asian and Australian continents and the Pacific and Indian Oceans.

Security problems to SLOC resulting from this new power constellation evolve around the US-USSR relationship; besides the spill-over of the Cambodia problem, intra and inter regional territorial claims/disputes, terrorism, piracy and navigation failure. Hence the next chapter will focus on Indonesia's perception on her role in safeguarding SLOC in her archipelagic and ASEAN waters.

Indonesia's Role in Safeguarding SLOC in Indonesian and ASEAN waters

As a responsible, independent nation — that, geographically can never seriously contemplate a "closed country" policy — Indonesia's perception of her role in safeguarding SLOC in her archipelagic waters should be done within the framework of her national concepts of the archipelagic outlook and national resilience. Likewise the security of SLOC in ASEAN waters should be based on the concept of ASEAN regional resilience.

However, Indonesia realizes that her national resilience, that is a *sine qua non* to properly

carry out her task in safeguarding SLOC in her archipelagic and ASEAN waters, is still far from perfect. Hence, cooperation and assistance — primarily in economic cooperation — to strengthen her national resilience, will be welcomed. Indonesia is facing, for the present and the near future, the task of stepping up her ability for the safeguarding of SLOC that is also in her own national interest. Within this context, Indonesia has already started the long process of updating her maritime laws and regulations so as to conform to the U.N. Law of the Sea. Other activities, include:

- a. maintenance of safety of navigation of the straits that are used for international passage;
- b. carry out surveys to update existing maps of above mentioned straits;
- c. upgrading her personnel in order to be able to carry out the maintenance and safeguarding of the above mentioned straits; carry out joint exercises with her neighbours and/or friendly countries to safeguard SLOC that is a common interest;
- d. acquire the necessary equipment (like patrol craft, communications and navigation equipment, on-shore facilities, etc.) within the limits of our budget, etc.

Some activities that we are actively contemplating or have already started with our neighbours and friendly countries are:

- a. assistance and cooperation in the education and training of Indonesia's personnel so as to enable them to better perform their tasks of maintenance and safeguarding the straits used for international passage;
- b. joint exercises that will familiarize our personnel with their counterparts and their systems that is a *sine qua non* for smooth cooperation and actions whenever necessary to guard our common interest;
- c. assistance and cooperation in carrying out surveys and other activities to update maps of the existing straits so as to guarantee the safe navigation of passage;
- d. assist Indonesia in acquiring the modern equipment that is necessary to safeguard safe navigation.

Some of the above-mentioned activities have already started on a limited scale, but have to be stepped up and intensified if we want Indonesia to be able to perform her task better in the shortest possible time.

Conclusion

Like the other nations of the world, Indonesia is also vitally interested in keeping open the sea lanes of communications in our interdependent world, and Indonesia realizes her heavy responsibility in safeguarding SLOC in her archipelagic and ASEAN waters.

Hence we would like to state here emphatically that Indonesia is not reluctant to cooperate with other vitally interested nations in this regard; however this cooperation and assistance should be based on the concepts of her archipelagic outlook, national and regional resilience, and should not infringe on her sovereignty as an independent nation.

Cooperation and assistance for specific activities within the framework of safeguarding SLOC that is our common concern, should be based on agreements that have been reached by the interested parties. Certainly it is not in Indonesia's national interest not to cooperate in safeguarding SLOC, since Indonesia recognizes that this will influence her economic development.

The same basic attitude also determines Indonesia's perception of ASEAN's role in safeguarding SLOC in ASEAN waters. ASEAN should be primarily responsible for safeguarding SLOC in ASEAN waters that should be based on the regional concept of regional resilience. ASEAN also welcomes and does not reject cooperation and assistance in helping her step up her ability in performing this task of common concern as long as this does not infringe on the sovereignty of the ASEAN nations that have stated in the Manila summit of December 1987 that their ultimate objective is the creation of ZOPFAN and a Nuclear Weapon Free Zone, and where nationalism is still a decisive force.



THE VITAL STATISTICS.

- Australian owned and managed.
- Leading systems engineering and software supplier to Defence.
- Defence-approved quality management system complying with AS 1821.
 - Proven project management methodology.
 - Approved secure working environment.
- Major projects completed for all operational sectors of the ADF.
- Microprocessor laboratory and hardware prototyping capability.
- Established working relationships with overseas defence suppliers.

Those are eight facts about CSA's Systems Engineering Division.
There are plenty more.



Computer Sciences of Australia Pty Ltd

Sydney

460 Pacific Highway
St Leonards NSW 2065
Phone (02) 901 1111
Fax (02) 901 1444

Canberra

Trevor Pearcey House
Traeger Court Fern Hill Park
Bruce ACT 2617
Phone (062) 53 1222
Fax (062) 53 1259

Adelaide

Endeavour House
Technology Park
The Levels SA 5095
Phone (08) 343 8800
Fax (08) 349 4537

SURVEILLANCE TASKS

by

Rear Admiral (Retired) Yasuo Ito
Director, Japanese Centre for Strategic Studies

Foreword

The International Steering Committee of the International SLOC Security Conference asked the SLOC Study Group, Japan to submit a paper covering the following contents:

Currently there are following questions relating to the actual execution of surveillance activities undertaken together with other operations such as sea lane patrol or escort of shipping, for the security of the SLOCs in the Western Pacific. When related nations conduct surveillance operations, how can surveillance operations by each nation be co-ordinated? To what extent can related nations ensure the timely exchange of information?

The Steering Committee expects that the paper covers the extent of surveillance activities for the security of the SLOCs in the Western Pacific and the costs required to implement the above activities.

It can hardly be said that the surveillance activities being currently undertaken by the Japan Self Defence Forces (mainly maritime and air) in the adjacent sea-air areas to Japan are sufficient, considering that the current geographical coverage is comparatively limited. Because we have not information enough for discussion on requested subjects in detail, we would simply touch some basic matters concerning surveillance and outline some conceptual matters considered necessary for promoting surveillance activities in the Western Pacific. We would also refer to surveillance works in general.

The meaning of "surveillance"

According to the US Department of Defence Dictionary of Military Terms, "surveillance" is defined as "the systematic observation of aerospace, surface or subsurface areas, places, persons or things by visual, aural, electronic, photographic or other means."

The following two kinds of information can be collected by means of systematic observation by aircraft and vessels including submarines of opposing forces which could pose a threat to the security of the SLOCs.

They are:

1. Information on the capabilities of vessels and aircraft. By undertaking such observations, it is possible, for example, to confirm the type of vessel and aircraft in question, the equipment or weapon systems on-board and so on, and to estimate their performance.
2. Information on the movements of opposing vessels and aircraft. By detecting the locating these objects through observing their movements, necessary information on their movements can be collected.

Some of the information on their movements can be put to immediate practical use for own military operations as so-called "tactical information". Some of them can also be made use of as "strategic information" through analysing, evaluating and accumulating these various data. In either case, it should be a basic principle that information collected by means of surveillance activities be distributed only to those who "need to know" them.

Surveillance activities related to SLOC security

The following points can be mentioned as the general features of surveillance activities. First, observation operations should be undertaken by various means systematically on the basis of co-operation. Secondly, in general, the geographical area of surveillance activities should cover a wide scope. And thirdly, in most cases, observations should be continued throughout a specific period(s).

Because of the above-mentioned special features the following points should be taken

into account, when surveillance activities are executed for the security of the SLOCs.

1. In order to expect the substantial effect of the surveillance activities undertaken for securing the SLOCs against opposing submarines, aircraft and surface vessels (including various kinds of anti-ship missiles and other weaponry, carried on board), surveillance capabilities of a wide scope covering air, sea and underwater areas should be provided for observation of the movements of objects in question.
2. For the purpose of smooth co-ordination of surveillance activities as well as the timely exchange of information among operating forces and units taking part in surveillance activities, some co-ordination system including necessary telecommunication network should be established.
3. For the security of the SLOCs, it is essential to implement surveillance operations over a much wider area, not relying merely on such immediate or direct measures covering relatively limited areas, as escort of shipping, patrol along sea-lanes or mines counter-measures.
4. Surveillance operations for the security of the SLOCs should be executed continuously throughout a necessary period and should also be started in a peacetime.

Contribution to SLOC security expected of surveillance activities

When the above-mentioned surveillance operations are undertaken, the following effects could be expected for the security of the SLOCs.

1. Preventing any threat from becoming a direct threat but as various attack weapons' performances are developed in velocity, efficiency, complexity and so on, attacks on the ASLOCs expanding in a wide air, surface and subsurface area could be made from increasingly longer distance within a shorter time than previously. It can be expected that this will be the case all the more in future. Accordingly, as there are limits to the effectiveness of the above-mentioned direct measures such as shipping escort, patrol along sea lanes, mine counter measures and so on, the security of the SLOCs will become more difficult to achieve in future.

Confronted with this tendency, if effective surveillance activities covering a wider sea-air area and being not limited to a sea lane zone could be accomplished, besides these direct measures, the security of the SLOCs could be achieved more easily and safely, because such surveillance operations in an

area considerably distant from the objects to be secured would make it possible to detect and eliminate invisible threats, in advance of their becoming direct threat to the SLOCs.

Surveillance activities might be said to be similar conceptually to "layered air defense" or "air defence in depth".

"Wide area SLOC security concept" in the North Atlantic, developed by the US Navy, can be mentioned as a typical example of surveillance operations for the security of the SLOCs. The concept includes land-based forces such as OTH radar and fighter-interceptor as well as OSIS (Naval Ocean Surveillance System) and ITSS (Integrated Tactical Surveillance System).

2. Evaluation of Opposing Forces' Capabilities and Estimate of their Intention in Advance.

Needless to say, if we fail to estimate the opposing forces' capabilities accurately, it will be very hard to cope well with an enemy's attack on our SLOCs in an emergency. On the contrary, if we can detect precisely their intention in advance, effective counter-measures could be taken easily. Surveillance activities provide one of the means which makes this possible.

Major threats to the SLOCs are submarines, surface vessels, aircraft and various anti-ship missiles carried on board them, mines and so forth. By conducting systematic and continuous surveillance activities and analytical evaluation of collected information, it will become possible, at the very least, to estimate the performance and actual conditions of their weapons systems, pattern of movement, force composition and so forth of various vehicles, except details of attack weapons loaded on board.

This means that surveillance activities should be executed continuously throughout peacetime and that the necessary organization or systems should be established so that evaluated information may be exchanged and utilized among the related nations.

If the surveillance activities are not practiced in peacetime but only in emergencies, it would be difficult to prepare necessary plans to get effective results such as provision of necessary equipments, deployment of forces, development of tactics and so forth. It would also be difficult to carry out effectively such operations as escort of shipping, patrol and so forth, that is direct measures for the security of the SLOCs.

It is necessary to catch timely and precisely any unusual indication, in order

to detect in advance and carry out effective countermeasures against attempt of opposing forces. This is possible by conducting continuous surveillance of the movements of opposing vessels and aircraft in and around the SLOC area and by assessing analytically various information collected through surveillance activities.

In many cases, the objects of surveillance activities should not be limited only to military vessels and aircraft of opposing forces but include also commercial vessels. This is because when the opposing forces attempt to attack our SLOCs, subtle changes in the movements even of their commercial vessels can often be detected in advance.

As mentioned above, surveillance activities for the security of the SLOCs should be practiced systematically and continuously not only during emergencies but also in peacetime.

Outline of equipment used for surveillance activities

Equipment used for surveillance activities in the SLOC sea area comprise mainly the following:

Air

Various radars are used for observation activities. It is considered likely that OTH radar capable of covering a far distant area ranging from 500 to 1,800 nautical miles will play the main role in this activity in future. To investigate a detected target, interceptors are used.

Surface

For surveillance over a far distant area extending beyond the horizon, OTH radar is considered an effective means, but patrol aircraft are also effectively used for surveillance over a comparatively wide area. Patrol aircraft and surface vessels are used for investigation. It should be noted that good results may be obtained by using these means properly according to the features of each.

Subsurface

In addition to fixed underwater detection equipment laid in important straits, patrol aircraft, submarines and surface vessels are used for surveillance. In comparison with P-3C class patrol aircraft, surface vessels were not highly regarded in terms of their capabilities for comparatively long distance underwater surveillance. However, the installation of TACTAS, SURTAS and other towed sonar

system developed by the US Navy has made their underwater surveillance capabilities upgrade immensely.

For underwater surveillance, anti-submarine patrol aircraft, surface vessels, submarines and fixed underwater equipment are used.

Anti-Submarine patrol aircraft

Fixed-wing anti-submarine patrol aircraft (P-3C is type of this type) have excellent manoeuvrability and capabilities of long-distance surface and underwater surveillance. They are used for collecting information and investigating and tracking targets in a wide area.

P-3C can cover an area ranging to more than 1,000 nautical miles for detecting surface objects with search radar installed on board. They take photographs and collect electronic information of detected objects.

P-3C can detect underwater objects by means of sonobuoys laid on the sea surface. If the underwater condition of sound transmission is good, P-3C can cover the area of several tens of nautical miles in radius by a single aircraft.

Although patrol aircraft can detect a number of objects in a wide area within a short time, their capability of staying in the air is limited. When surveillance work should be continued for a long duration, a considerable number of aircraft is required, of course.

Surface vessels

Surface vessels such as destroyers and destroyer escorts are inferior to patrol aircraft in manoeuvrability but superior in cruising endurance. Therefore, they are suitable to conduct surveillance continuously during a long time for detecting specific objects in a specific comparatively narrow area. It is also possible to improve extremely their capabilities of underwater surveillance by using the "towed-array sonar" developed by the US Navy mentioned above.

Submarines

The biggest advantage of submarines for underwater surveillance is to be able to measure underwater temperature by themselves which influences a great deal underwater sound propagation, and to stay at the desired depth for detecting sound secretly.

Fixed underwater equipments

They are used usually for surveillance of submarines passing through such comparatively narrow waters as important straits or choke points. The feature of fixed underwater

equipment is that they can be used semi-permanently, regardless of any weather conditions. However, co-operation by vessels or patrol aircraft is necessary for tracking detected targets.

Current Japanese surveillance activities

The outline of the current Japanese surveillance activities is as follows:

Air

Japan Air Self-Defence Force is in charge. Their activities are limited mainly within the air defence zone above and around Japan.

Surface

Japan Maritime Self-Defence Force is in charge. They conduct surveillance work in the neighbouring sea areas around Japan including the three straits (Soya, Tsugaru and Tsushima). P-3Cs are used mainly in relatively wide areas, and escort vessels in a specific area or for specific objects.

Subsurface

Fixed underwater equipment is used for surveillance in and around major straits. Surface vessels and aircraft are sometime used for surveillance as required.

There is no authorized co-operation system with other nations.

Establishment of surveillance system for SLOC security in the Western Pacific

In order to ensure the safety of the SLOCs in the vast Western Pacific, it is needed to establish in peacetime an international system suitable to co-ordinate surveillance activities by related nations.

As mentioned above, it is obviously difficult to ensure the safety of the SLOCs, if we leave SLOC security only to operations in relatively narrow coverage such as patrol along sea lanes or direct escort of shipping by aircraft and vessels.

Accordingly, besides such operations, it is necessary to establish in peacetime a surveillance system which enables the implementation of effective wide-area surveillance operations around the SLOC area "in depth", in order to ensure the security of the SLOCs in the Western Pacific region.

As to NCS (Naval Control of Shipping) which is one of the essential measures of the security of the SLOCs, most of the main functions of NCS such as formation of convoy, selection and designation of shipping lanes, designation

of navigation schedules and so forth, will be planned based on various information acquired by surveillance activities. Accordingly, it can be said that strengthening the surveillance system in the Western Pacific is also essential for effective functioning of NCS.

Considering that the Soviet attack capabilities on our SLOCs in the Western Pacific have rapidly been increased quantitatively as well as qualitatively, the establishment of surveillance systems could be said to be indispensable for the security of the SLOCs in this region.

At present, we depend for most of the surveillance activities in the Western Pacific upon the United States. However, recent events in the Persian Gulf which is far narrower than the Western Pacific have proved that no one nation has the capability to implement single-handed surveillance tasks in vast air, surface and subsurface area.

Our current dependence on the United States may not be allowed to be continued in future, considering changes in international situations as well as the fact that the security of the SLOCs in the Western Pacific contributes to the security of the nations concerned. Accordingly, it would be reasonable that surveillance tasks be shared by the nations involved.

When we study sharing of surveillance tasks among the nations concerned, the geographical conditions of each country and the equipment that respective nations can hold and operate should be taken into major consideration. However, generally speaking, it might be proper to apportion surveillance area on the following basis:

1. Surveillance tasks in coastal waters, important straits and other major choke points are to be assigned to the coastal countries concerned, in principle.
2. The appointment of surveillance areas in the vast ocean is to be discussed among the countries concerned.

The establishment of a co-ordination centre which may be named "Western Pacific Surveillance Co-Ordination Centre" is needed to ensure the safety of the SLOCs and the implementation of effective surveillance activities in the Western Pacific. It is also needed to co-ordinate and integrate surveillance operations conducted by the nations involved. It would be proper that the United States be in charge of its administration and co-ordination of operations conducted by the nations concerned. The following are considered as major functions of the centre:

1. Co-ordinative function to achieve smooth implementation of surveillance operations by the nations concerned.

2. Timely exchange of various information collected through surveillance operations by the nations concerned.

In order to make the centre function effectively, it is necessary to organize not only a surveillance network among the countries concerned but also a requisite telecommunication network to co-operate with, for example, the following systems:

1. Ocean Surveillance Information System (OSIS-US)
2. Integrated Tactical Surveillance System (ITSS-US)
3. Naval Control of Shipping Centre (NCS-each country)
4. Ship's Reporting System (SREP-each country)
5. Operation Headquarters of Navy and Air Force (each country)

Conclusion

Essentially, effective results of surveillance activities could not be expected if surveillance activities for the security of the SLOCCs are commenced after the international situation becomes tense. Accordingly, it is necessary to start jointly surveillance activities in the

Western Pacific as early as possible in peacetime. However, as a matter of fact, it may be politically difficult to realize.

On the other hand, it is also true that the threat posed to the SLOCs in the Western Pacific has rapidly been increasing due to the remarkable increase of the Soviet naval and air forces in the Far East, the continued expansion of their existing military bases in Vietnam, the difficulties in negotiation on continuation of the US use of the military bases in the Philippines and so forth.

Under such circumstances, it will not be easy to get an early resolution. However, we would like to believe that there will be a possibility of solution to such difficulties in the not so far future, if good ideas turn up as the Steering committee pointed out. We, our SLOC Security Study Groups, should continue steady studies so as to realize it in the near future.

In closing this report, we would like to express our heartfelt appreciation and gratitude to the International Steering Committee members who raised such an important issue to study, to which little attention has been paid, although it is a very important basic subject for the security of the SLOCs in the Western Pacific.



The guided-missile frigate HMAS SYDNEY berthing at HMAS Stirling on 4th November, 1989 for a three day stopover before returning to Sydney from a South East Asian deployment.

Photo: Vic Jeffery, Navy Public Relations (WA)

CHURCHILL FELLOWS HEADED OVERSEAS

Sixty-three Churchill Fellows are making plans to head overseas during 1990 on their Churchill Fellowships. They will visit many countries and spend an average of about three months pursuing subjects as diverse as harvesting pollen from trees, grasses and weeds, aeromedical rescue, micro manipulation of mice embryos and rabbit farming.

The Churchill Trust is now calling for applications for Fellowships to be taken up during 1991. Merit in any field, which must be of value to the community, is the major criterion in the granting of Fellowships.

Over 1400 Australians have already been given the opportunity to study overseas with their fares paid and a living allowance provided to allow them to seek out knowledge which they then bring back to Australia for the enrichment of our society. An average Fellowship is worth about \$12,000.

Churchill Fellowships are available to all Australians regardless of academic or other qualifications. **Apply now** for a 1991 Fellowship. Send a self-addressed stamped envelope 24 x 12 cms to:

Application Forms
The Winston Churchill Memorial Trust
218 Northbourne Avenue
CANBERRA ACT 2601

Applications close on 28 February 1990.



The Tongan patrol boat VOEA NEIAFU (P201) alongside at Australian Shipbuilding Industries yards at South Coogee, Western Australia on 30 October, 1989, the day of its handover by the Australian Government. VOEA NEIAFU is the ninth Pacific Patrol Boat to be handed over by the Australian Government under the Defence Co-operation Act.

Photo: LSPH W. McBride, RAN

THE EVOLUTION OF THE RAN INTELLIGENCE SERVICE PART ONE — 1907-1918

by

Wayne Gobert

The Beginning

On 3 July 1882 Captain William Henry Hall was appointed as the RN's first supervisor of Naval intelligence. He was tasked with collecting, collating and assessing information on foreign fleets. The four basic elements of the intelligence cycle; collecting, collating, assessing and disseminating remain with us today. The RAN inherited its intelligence traditions from these beginnings.

In 1901 the Commonwealth assumed responsibility for defence but intelligence in both services was totally neglected. This was a reflection of the treatment that intelligence had received in the UK. However, the Boer War vividly demonstrated the folly of considering intelligence to be a part time pursuit.¹ As Intelligence was so poorly understood Commanders rarely consulted or believed in their Intelligence staffs and chose to rely on "instinct". In 1904 The Esher Report in Britain proposed a new system of administration of the armed services. The primary recommendation of the report was the creation of service boards. Under this restructuring the First Members became responsible for intelligence matters.² The Esher Report was received in Australia with the usual degree of indecision by the government. Finally on 2 December 1907 Lt Col J.W. McCay VD became the first Chief of Army Intelligence and the Army Intelligence Corps was raised. The First Naval Member RADM Creswell became responsible for Naval Intelligence.

Little is officially available concerning Creswell's activities in these early days.

However he did commence close liaison between Customs and the RAN and by 1911 he had established a network of coastwatchers around Australia. The major role of the coastwatchers was to monitor German merchant shipping.³ Creswell also emphasized caution to Japan and recommended a coastwatcher service in Torres Strait. However the weight of responsibility upon the First Naval member was overwhelming, combining almost all functions except personnel, finance and engineering. In 1912 Commander Walter Thring was appointed as assistant to the First Naval Member and given responsibility for intelligence.

Thring came to the RAN from the RN. He had been an outstanding officer earmarked for a successful career. Unfortunately he became involved in the Beresford-Fisher feud that divided the RN in the 1890's and 1900's. He was closely identified with the Beresford faction and when Fisher achieved ascendancy as First Sea Lord he became frustrated with his rather reduced chances of promotion. In 1911 he retired from the active list of the RN as a Commander. In 1912 he came to Australia.

Immediately Creswell and Thring developed an excellent rapport that allowed Thring much leeway in intelligence and war plans. Thring envisaged a two way flow of intelligence between the RAN and RN, the RN did not, The RN considered the Australian role to be predominantly reporting and passing German merchant ship positions to London for compilation of a global picture. What the Admiralty considered Australia required, they would provide without prompting. This one way attitude from the UK was typified by the British

THE AUTHOR

LCDR Wayne Gobert is a GLEX *int.* presently completing full time, the Master of Defence Studies at ADFA and was involved in the creation of the *int* qualification/career path and the planning of our first RAN Intelligence Course.

reply to a 1905 request by Australia for information during the Russo-Japanese War:

"requests for information were firmly rejected on the grounds that they had 'never been supplied to Colonial Officers'."⁵

However displaying an independence of mind that would continually re-emerge Thring pushed Creswell for greater Australian participation in intelligence matters. In spite of Admiralty opposition Creswell arranged for an ongoing exchange of intelligence between the RN's China Squadron in Hong Kong and the RAN. Concurrently he developed links between customs and business interests in the Pacific region.

In 1913 Thring and Brig Gen Gordon, Chief of the Australian General Staff embarked on the first comprehensive strategical survey of Australia. The group toured far and wide on 9 July 1913, Thring delivered his "*Report on The Naval Defence of Australia*". This remarkable document clearly described Australia's Defence needs. Its three central propositions were that: Japan was Australia's major enemy, the RN could not be relied upon to supply a Fleet for Australia's defence and that present defence policy, the 'Henderson Report' was inadequate.⁶ These prophetic words highlight Thring's perception:

"The squadron (RN) stationed in Australian waters has always been a holiday squadron. . . . There is now a possibility that an enemy can strike a deadly blow before help can come. . . . Geographically, the position of Australia with respect to Asia and the Pacific may be compared to that of England to the North of Europe . . . the danger of a descent by the Japanese, in their own good time, is a very real danger, almost amounting to a certainty, unless adequate steps are taken for defence against it . . . British ships . . . in the case of a European war would be largely occupied with matters other than the defence of Australia."⁷

Thring was the first major Australian defence thinker to suggest that Australia would have to provide its own defence, unaided. He urged defence of the islands immediately to the north and northern Australia itself. He conceded that the RAN couldn't meet a Japanese main fleet on the High Seas, but he considered that light forces and raiding behind Japanese lines of communications would provide a serious deterrent.

World War One

In 1914 the War Room activated in Lonsdale Street, Melbourne. Thring became Director of War Plans. The Intelligence staff consisted of

Captain A.W. Jose (later official war historian), one Lieutenant Commander and two lieutenants. RAN intelligence had three basic tasks; informing the Naval board on regional matters, passing information to the UK and counter-intelligence. Information was obtained from coastwatchers, custom officers, the China Station, the British Minister in Peking, the Canadian Naval Staff and the RAN wireless office.⁸

Upon the outbreak of war RAN intelligence had activated a wireless interception cell at Victoria Barracks, Melbourne. A civilian instructor from the RAN College, Geelong, Frederick William Wheatley, was appointed to oversee wireless interception. Wheatley was a graduate of Oxford and Flinders Universities and was fluent in German. This unit was to have a significant impact on the war.

Wireless interception has become a fundamental tool in intelligence collection and remains so to the present day. Signals Intelligence (SIGINT) is concerned with the interception and analysis of electronic transmissions. It can be further divided into Electronic Intelligence (ELINT) and Communications Intelligence (COMINT). ELINT is predominantly concerned with the nature of a signal by either locating its source or identifying the transmission platform. Analysis of particular radars is typical of ELINT activity.

COMINT is aimed at analysing a communications signal and deducing what is actually being communicated. This art is known as Traffic Analysis (TA) and is intimately linked with cryptography or codes.

On 11 August 1914 the RAN placed the defences of Port Phillip on an apparently peacetime footing. This ruse was based upon the hope that a German merchant ship may enter the port and be seized. Late on the afternoon of the 11th the Black German Line *HOBART* entered Port Phillip and came to anchor off Observatory Point. Immediately Captain Richardson RAN, the District Naval Officer and Sub-Lieutenant Veale RANR rowed to ship with civilian clothes covering their uniforms. Upon boarding Capt Richardson produced a pistol and declared the ship a prize of war.⁹ Twenty RANR sailors boarded *HOBART* and she proceeded to Port Melbourne. That evening Richardson hid himself in the Master's cabin. He anticipated that the Master would attempt to destroy his hidden code book that evening. Richardson followed the German to a secret compartment in an inner cabin and obtained the code book at gunpoint.¹⁰ The documents captured included: '*Instructions to Shipping as To Their Conduct*

In *A Naval War*, *The Secret Appendix* and the HVB *Handelsverkehrsbuch* Code.¹¹

The code book was immediately forwarded to the wireless room at Navy Office. At that time the German Navy was using 3 codes: the HVB, SKM and VB. The HVB was used for supply communications, zeppelins, small ships and merchant ships. The VB *Verkehrsbuch* was used by warships overseas and embassies. SKM *Signalbuch der Kaiserlichen Marine* was used by major units. Significantly the RAN had also captured the first wartime key to HVB thus allowing cryptographers to follow changes in the HVB code.¹² The HVB reached London in October 1914 and was immediately utilized by ROOM 40, the Australian wireless room's counterpart.

Meanwhile the RAN had begun plotting the location of the German Pacific Squadron. This squadron consisted of modern cruisers based on the German colony of Tsing Tsao in China. They had left Nagasaki on 23 June and their whereabouts were unknown. The only vessels in the Pacific capable of matching them were the battleships of the Japanese fleet or *HMAS AUSTRALIA*. With trade accelerated, the invasion of German New Guinea imminent and troop transports being readied to proceed to Europe, locating them was vital.

From the first day of war the RAN wireless room began intercepting transmissions from SCHARNHORST, NURNBERG, GEIER and PLANET.¹³ The wireless room's direction finding (DF) experts placed the squadron in the vicinity of the Marianas/Caroline Islands and an intercepted transmission read: "From Yap to SCHARNHORST — 'You must proceed to the Marianne Islands' [sic]".¹⁴ However this vital intelligence was ignored on the grounds of "instinct" and the search for the Germans centred on the Rabaul area.¹⁵ The German squadron was in fact in the Marianas and escaped eastwards towards Cape Horn, with the exception of *EMDEN* which detached to raid independently.

Whilst DF action was being undertaken against the Germans Wheatley continued his cryptographic attack on HVB. The earlier HVB messages, according to Wheatley, were of little value and by the end of October the key had changed. Meanwhile the German Squadron proceeded eastwards towards South America. The British Naval Attache in Montevideo had been intercepting signal traffic from the squadron but was unable to decrypt them. In late October the Admiralty advised him to cable transcripts to the RAN intelligence organization.¹⁶ Wheatley claimed that after a long day he was inspired after the 1914 Melbourne Cup

and broke the HVB code at 1800 on November 3, 1914.¹⁷ Wheatley immediately signalled the squadron's itinerary through the Straits of Magellan to the Admiralty. On 8 December the squadron was intercepted and destroyed in the Battle of The Falkland Islands by HM Ships *INVINCIBLE* and *INFLEXIBLE*. On 6 January 1915 *HMAS AUSTRALIA* sunk the supply ship *ELINORE WOHRMANN* off Brazil based upon intercepted positions.

Later the RN was to claim that Wheatley was wrong in his recollection of the itinerary of the Germans and that luck played a major role in the Battle of The Falkland Islands. However, what is significant is that the breaking of HVB was to compromise German positions for several months to come, for although the code was a merchant code it was used by warships and U-Boats to arrange re-supply. The Admiralty requested 200 copies of the code which the RAN duly produced, despatching 100 to the Admiralty, 50 to the America and West Indies Station and 50 to the RAN and China Stations.¹⁸ The RN's Room 40 was obsessed by secrecy and the Director of Naval Intelligence was not appointed controller until 1917. In contrast the RAN's organization was controlled by Thring and shared information in a spirit of international co-operation. RAN intelligence had contributed one of the most vital intelligence coups of the war. In James Goldrick's words:

"In terms of naval operations in home (ie: UK) waters HVB was the most significant capture . . . a mass of seemingly routine and unimportant messages disclosed information of great value . . . it was often the HVB signals which gave warning of the sorties of the Hoch See Flotte".¹⁹

For the remainder of the War the RAN SIGINT unit continued operations in an area that became quieter as the war's focus shifted. However the RAN continued to advise the Admiralty and support decryption operations. In early November an encrypted signal was despatched to Wheatley for decryption. The Germans had changed the HVB code three times and Wheatley continued to break it. Wheatley decrypted the following communication intercepted in Capetown:

"From Windhoek to [unknown station], 'With my authority a free corps of Boers and Germans under Andries de Wet are marching together with a commando of rebel Boers on Upington. I have promised the rebels recognition by The Imperial Government [ie: German] as a war waging power; recognition of independence contingent on (the formation of a) future Boer Free State'".²⁰

RAN intelligence also carried out two other functions in addition to SIGINT and coast-watching. The first was the censorship and control of all wireless telegraphy into Australia. The second was internal surveillance and security in concert with the Counter Espionage Bureau.

There is little evidence of clandestine radio activity in Australia during WW1. The only documented case was a rumour that a German Mission station at Beagle Bay possessed an illegal transmitter. However this was later determined to be untrue.²¹ The lack of underground wireless activity was possibly the result of: the lack of activity in the region, the weakness of the period's transmitters and German inability to influence the region to any large degree.

In 1915 counter-intelligence was entrusted to The Counter-Espionage Bureau (CEB). This organization was headed by George Steward who also served as Secretary to The Governor-General, Sir Ronald Munro-Ferguson. Steward's Deputy was Major H.E. Jones, in each state a 'Commonwealth Traffic Officer'²² headed local operations. The CEB was an unusual organization closely linked to MI5.²³ It was a product of the British Foreign Office and worked uncomfortably within the triumvirate of: The Governor-General, Prime Minister and Steward.

In mid-1916 friction between the RAN and the CEB came to a head over the suspected sabotage of the new cruiser *HMAS BRISBANE* (being constructed at Cockatoo Island). The RAN became increasingly unhappy with the activities of the State Police and the CEB in curbing a series of accidents. It was alleged that the International Workers Of The World (IWW or 'Wobblies') had penetrated the Union movement and were delaying the ship's completion. The IWW were an internationalist workers/peace group who were under suspicion. On 7 November 1916 the ship's starboard dynamo was damaged when its oil filter was discovered to be filled with cotton waste.²⁴ Eventually the ship sailed for The Mediterranean (12 December 1916), but in the process a police agent was shot, the IWW premises raided and closed, IWW members arrested and reports received from 'secret service agents' that the RAN were unaware of.

In late 1916 Creswell, unhappy with Steward and what he described as the CEB's "inefficiency"²⁵ created his own counter-intelligence service. This unit was headed by a reserve law lecturer, J.G. Latham. Latham would later serve as: Attorney-General, Leader of The Nationalist Party, External Affairs/Industry Minister,

Deputy PM, Chief Justice of The High Court and Australia's first Ambassador to Japan (1940-41).

LCDR Latham attacked his task enthusiastically and by 1917 his political intelligence unit had expanded to most states. They pursued Communists and IWW members but there is little evidence of any clandestine activities. In July 1917 *SS CUMBERLAND* was sunk off Gabo Island after an explosion. The IWW and Communists were suspected of planting a delayed action explosive in the hold. Theories ranged from mines in cattle carcasses, to Russian agents and fanatic seamen pushing mines from a passing merchantman (*SS TASMANIC*). The prime suspect was a seaman named Masurer. He was suspected because he had claimed that he could speak five languages and owned a camera. The CEB conducted its own investigation and determined the ship was sunk by a loose Australian mine. The RAN vehemently denied this. On 11 September it was announced by the RAN that the ship was probably sunk by a mine from the German raider *WOLF*.

The other major focus of Latham's interest were the Japanese in Australia. The political intelligence unit constantly warned of threats from Australia's "Ally" and maintained surveillance operations against Consular and Military Personnel in Sydney and on Thursday Island. Operations against the Japanese were based upon an assumption that Australia's Ally was moving south by its acquisition of the former German colonies.²⁷ The Japanese Naval Attache in Sydney was shadowed²⁸ and the sale of charts to Japanese closely controlled.²⁹

On Anzac Day 1918, LCDR Latham sailed onboard *SS NIAGRA* as chief adviser to Navy Minister Joseph Cook and PM W.M. Hughes at The Versailles Conference. In London he attempted to widen Australia's sources of intelligence from The Admiralty and Foreign Office.³⁰ At Versailles he played a major role in Hughes' vision of the "New Pacific".³¹ In Latham's absence and as the war wound down the counter-intelligence unit slowly disappeared.

Conclusion

In 1988 the RAN finally recognized the requirement for permanent organization of Intelligence for personnel other than RANR officers. Yet the RAN Intelligence Service has a rich and significant history that has been totally ignored both within and outside of Australia. This ignorance is best summed up

by an internationally renowned intelligence writer, Christopher Andrew:

"Even in 1914, however, there was still no intelligence officer in the Flagship of the Australian Squadron . . . the squadron was ordered to destroy the German wireless station at Rabaul in New Guinea, failed to find Rabaul, and returned without completing its mission".³²

No doubt the ancestors of the RANR sailors who died at Bitu Paka and destroyed the German wireless station at Rabaul would be offended by Mr Andrew's spurious statement.

The RAN Intelligence Service effectively carried out its reporting, Signals Intelligence and Counter-Intelligence roles throughout WW1. Furthermore the Australian SIGINT unit was responsible for directly contributing to the destruction of more enemy shipping than the RAN surface fleet. This efficiency was laid on a base of independent, regional vision stemming from outstanding Naval intelligence officers such as Thring, Jose and Latham.

Footnotes

- 1 J. Haswell, *Spies And Spymasters*, p. 109.
- 2 C.D. Coulthard-Clark, *The Citizen General-Staff*, p.9.
- 3 Cmdr J.M. Wilkins, *Naval Intelligence*, p.1.
- 4 *Ibid*, p.2.
- 5 Coulthard-Clark, *op.cit*, p.13.
- 6 W. Thring, 'Report on The Defence of Australia', p.3.
- 7 *Ibid*, p.4.
- 8 Wilkins, *op.cit*, p.4.
- 9 S. Veale, *Autobiographical Recollections*, p.17.
- 10 *Loc.cit*.
- 11 Capt A.W. Jose, *Official History Of Australia In The War: Vol IX: The RAN*, p.46.
- 12 P. Beesly, *Room 40*, p.74.
- 13 Jose, *op.cit*, p.9.
- 14 *Ibid*, p.10.
- 15 *Loc.cit*.

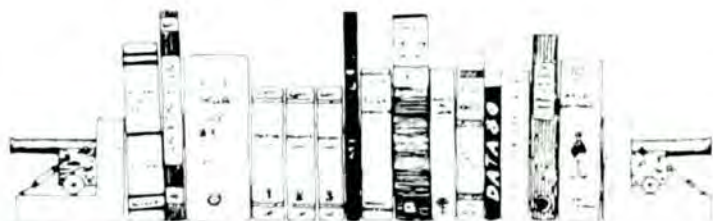
- 16 Beesly, *op.cit*, p.74.
- 17 *Ibid*, p.75.
- 18 *Loc.cit*.
- 19 J.V. Goldrick, *The King's Ships Were At Sea*, p.177.
- 20 Jose, *op.cit*, p.46.
- 21 F. Cain, *A History Of Political Surveillance In Australia*, p.79.
- 22 The title Commonwealth Traffic Officer was used as a front for CEB officers.
- 23 Cain, *op.cit*, p.2.
- 24 *Ibid*, p.81.
- 25 *Ibid*, p.87.
- 26 *Ibid*, p.89.
- 27 R. Thornton, 'Invaluable Ally Or Imminent Aggressor', *Journal Of Australian Studies*, No. 12, (June 1983), p.18.
- 28 See: AWM 50, 6-2, 'Japanese Naval Attache'.
- 29 See: AWM 50, 8-5, 'Sale Of Charts To Japanese'.
- 30 P. Edwards, *Prime Ministers And Diplomats*, p.53.
- 31 *Ibid*, p.51.
- 32 C. Andrew, *Her Majesty's Secret Service*, p.15.

Bibliography

- C. Andrew, *Her Majesty's Secret Service*, (Viking, New York, 1986).
- P. Beesly, *Room 40: British Naval Intelligence 1914-18*, (Hamish Hamilton, London, 1982).
- F. Cain, *The Origins Of Political Surveillance In Australia*, (Angus And Robertson, Sydney, 1983).
- C. Coulthard-Clark, *The Citizen General Staff: The AIG 1907-1914*, (Military Historical Society, Canberra, 1976).
- P. Edwards, *Prime Ministers And Diplomats*, (Oxford University Press, New York, 1983).
- J. Goldrick, *The King's Ships Were At Sea*, (US Naval Institute, Annapolis, 1984).
- J. Haswell, *Spies And Spymasters*, (Thames and Hudson, London, 1977).
- 'Japanese Naval Attache', AWM 50-6-2.
- Capt A.W. Jose, *Official History Of Australia In The War: Vol. IX: The RAN*, (Angus and Robertson, Sydney, 1943).
- 'Sale Of Charts To Japanese', AWM 50-8-5.
- R. Thornton, 'Invaluable Ally or Imminent Aggressor, Australia and Japanese Naval Assistance, 1914-18', *Journal Of Australian Studies*, (No. 12, June 1983).
- Cmdr S. Veale, *Autobiographical Recollections Of A Naval Reserve Officer*, (Unpublished Paper, Melbourne, 1986).
- Cmdr J. Wilkins, *Naval Intelligence*, (Unpublished Paper, Melbourne, 1981).



BOOK REVIEWS



"ARMS CONTROL AT SEA"

By Rear Admiral J.R. Hill RN (Ret)

Published by Routledge, Chapman and Hall
11 New Fetter Lane, London EC4P 4EE

History may record the 1980s as a decade when the superpowers effectively moved towards practical limitations which could be placed upon the nuclear arms build-up since World War II, with reductions in arsenals and ground forces in Europe and the USSR featuring predominantly. Analysts of the subject may argue about the eventual success of achievements since Ronald Reagan became US President in 1980 but there will be few who would doubt that emphasis has been upon arms limitations, mainly for ground forces and missiles.

In "Arms Control at Sea" Admiral Hill focuses attention upon the other side of this coin — arms control instead of limitations — and in the maritime environment.

In a relatively short book (229 pages) he takes the reader through the philosophical differences of the two approaches, postulates arms control objectives, and draws upon naval history to evaluate our achievement thus far. Currently Editor of the *Naval Review* the Admiral looks at past maritime control measures and provides a critical examination of the objectives of maritime power and the concepts of disarmament, peace zones, parity, verification, and peaceful co-existence.

Among other things "Arms Control at Sea" covers such diverse aspects as strategic arms control, tactical nuclear weapons at sea, naval force structures, and future possibilities. It examines these subjects professionally, competently, and analytically.

For some, these last points may highlight difficulties for this book and this was so in my case. I found it hard to generate enthusiasm because its approach is in many respects, 'staff

paper' oriented with each chapter an entity complete with copious notes. The reference bibliography is staggering for a book of this size and the author draws upon it at every turn. This tends to increase the reader's frustration because the narrative does not flow but tends to abruptly jump from one topic to another, with each 'fact' painstakingly cross referenced. One short chapter has 80 reference notes.

The subject does not lend itself to light treatment however; notwithstanding my comments above, "Arms Control at Sea" is a remarkably comprehensive coverage of a difficult problem. Admiral Hill avoids taking a detailed stand on the dilemma of arms control v limitations in each of his chosen areas of study but does touch upon this in his conclusion. Another chapter or two at the end to tackle these opposing viewpoints might have better satisfied the anticipation generated at the beginning but perhaps the Admiral sees this as material for a separate publication.

Lest my comments appear to devalue this book I must finish by espousing its cause. Arms control seeks to improve security for participating nations and its achievement at sea involves the willing concurrence of each navy that is a party to it. Admiral Hill examines the problems and difficulties with great skill and presents clear proposals for their resolution. "Arms Control at Sea" would be a valuable addition to the library of anyone seeking to improve their knowledge of this complex and vitally important naval matter.

Reviewer: Commodore Alan Brecht

Continued on page 50

CONTROL OF PIRACY AND MARITIME TERRORISM

by

Tun Hwa Ko

*Paper prepared for the Sixth International Conference
October 11-14, 1988 — Melbourne, Australia*

Foreword

As recently as July 12, 1988, a 370-ton Greek ship, *CITY of POROS* with 471 passengers on board was attacked by terrorists, as the ship headed for Trocadero Marina in the Paleo Faliron seaside suburb returning from a day-long three island cruise.¹ Greek government sources said the terrorists were two men and a woman armed with automatic weapons and grenades. They had been photographed during the attack. An announcement by the Greek Ministry of the Merchant Marine said at least 9 people died and 98 were injured. Only two of the dead had been identified: Antonis Demaizis, the ship's 45-year-old first mate, and a Danish tourist, 33-year-old Karl Johan Grabas. The other bodies had been burned beyond recognition and mutilated by shrapnel wounds. In the confusion, the unidentified attackers escaped in a waiting speedboat.

The above-mentioned story was an extract from a report of *CHINA POST*, a newspaper published in Taipei. No further account of the incident can be obtained in Taipei for analytical studies on the case, except for the impression that this was just another inhumane and criminal act by agents of terrorism at sea.

This kind of maritime terrorism has occurred in other areas, such as in the Red Sea, Persian Gulf, Lebanon, Central America and in Western Sahara where the Polisario guerillas have preyed on trawlers and coasters.² In Philippine waters, there have been several cases of Taiwanese fishermen encountering awful atrocities committed by Filipino groups who were motivated as much by greed as by political pretensions. A few of them have been caught and tried in courts.

In February 1981, disguised as harbour pilots, an IRA squad boarded the 500-ton coaster *NELLIE M* as she entered Lough Foyle in Ulster (North Ireland). The crew was forced

to take to boats, after which the terrorists placed explosives and sank the ship. A year later they repeated the operation on the *SAINT BEDAN*. In 1985, a Spanish naval patrol vessel was attacked by terrorists with one crew killed and others wounded. In 1986, a Soviet factory ship was attacked. She fired back.

The *ACHILLE LAURO* affair might be a better known case remembered by the general public. On 7 October, 1985, Arab terrorists hijacked the Italian cruise ship, *ACHILLE LAURO*, which had more than five hundred crew members and passengers, including many Americans on board. Italy's immediate response was to carry out a diplomatic effort with the Arab world, backed by a naval task force fully prepared, were diplomacy to fail, to launch an open-sea rescue mission. At Italy's request, Syria had not granted permission to the terrorists to bring the *ACHILLE LAURO* into one of its ports. The Governments in Cyprus and Tunisia had denied the terrorists in a similar manner. Yasir Arafat, whatever may have been his earlier involvement in the hijacking itself, agreed with Rome to enlist other leaders of PLO to persuade the terrorists on board to release the ship and the hostages in exchange for their own safe passage to freedom. Italy had also lined up Egypt to provide its territory for support, and to guarantee that the agreement between Italy and the terrorists would be carried out by both parties. People might still remember vividly the rest of the story with an American passenger, named Klinghoffer, murdered by the terrorists and thrown into the Mediterranean Sea along with his wheelchair. Four terrorists were released to the Egyptian authorities who transported them by civil airliner to freedom. But, the airliner was intercepted by the U.S. military and was forced to land at Sigonella, a NATO air base located in Sicily. American

intelligence found that Abu Abbas, a notorious and dangerous leader of a PLO terrorist group was on board the Egyptian airliner. The U.S. Government asked the Italian authorities to detain him. The Italian judge who looked into the matter found that insufficient grounds existed to hold anyone except the four terrorists and released Abu Abbas.

There is no need here to retell the *ACHILLE LAURO* affair and the storming diplomatic relations between Rome and Washington created by the incident. What we want to say here is only that the terrorism is being felt also at sea. It deserves our attention and studies.

Difficulties of Committing Terrorism at Sea

In our series of International Conferences for the studies of SLOC, we discussed in Singapore in 1985 the problems of Piracy and Anti-piracy.³ We gave a good account of the history and causes of piracy. Statistics on the loss of life and property by pirates from 1980-83 were given. We also showed the tactics developed and employed by the pirates. In our previous conference, we had also suggested some anti-piracy measures, and urged for more and closer international co-operation to combat age-old international crimes. Today, here in Melbourne, I am assigned to discuss piracy and terrorism at sea; I'd like to point out that there are some similarities in basic techniques employed by both pirates and terrorists. Because their primary targets are the same sea-going ships, passengers and crew which they have to get control of.

Without going into too much legal technicality on the definitions of pirates and terrorists, we could, for practical purposes, say that pirates are after money and other material gains while the terrorists are pursuing their political objectives. But this is not a clear cut line of demarcation between the two. There may be cases of piracy with political ingredients, and terrorists who seek material gain as well. We are here concerned not so much about their classifications but about how they plan, operate, and attain their objectives.

First, let us look at the terrorists at sea. Their job seems to be more difficult than would be on land because of the following conditions:

(1) The primary objects of hijackers are passengers. It is the value of human life which they are trying to exploit, to make use of in blackmail. There are more and more passengers who travel by air, and fewer passengers who can afford the luxury of ocean liners in cost and in time. In a busy international airport, there may be 2 to 3 airplanes landing

or taking off within a few minutes; but, one would have to wait for weeks to see a passenger liner sailing out of a harbour. The infrequent voyages may not be ideal opportunities for the terrorist's own political timing schedule.

(2) Most cargo ships have no passengers on board. There are some cargo-passenger ships which carry cargo and passengers. But the passengers are usually 'not-so-important' ones, and they are only a few in number. Cargo does not have much political significance and cannot be held as hostage.

(3) On board an air transport, the passengers are all sitting in one straight cabin. It is easy to control them with one or two armed hijackers. Crew and passengers on board a ship are scattered all over the ship on many decks and in numerous compartments. It would take a great deal of manpower to keep them at bay. Most of the compartments are watertight, which can be closed firmly to block passage. It is difficult to reach and to go through all the compartments. If one or two hijackers dare going down below the decks and to the lower compartments, the hijackers themselves may get lost, or out-numbered and get captured or killed.

(4) No ship is identical to another, even if they are of the same class or type. A Boeing 747 is precisely the same as another 747, in its controlling system and in all other arrangements. But no two ships are arranged in the same way. It is difficult to find out how to control a ship before boarding, and it would take time to find out many things after boarding. An aircraft is piloted from the cockpit. A ship has many alternative steering stations where the ship can be commandeered and navigated. It is difficult for hijackers to command a ship.

(5) The speed of ships is slow. The cruising speed of a modern ship, on average, would amount to 20-25 knots. Air hijackers can force the pilots of a airliner to fly from one place to another, and perhaps, back to the first place, according to their by minute wishes. But a ship cannot do that even fully under the control of hijackers. Ships take a long time to go from one place to another. Sea and air rescue teams can intercept hijacked ships easily. While a hijacked ship is steaming at sea, the hijackers cannot get away quickly for their own freedom.

(6) A small number of hijackers can sneak into an airport somehow with small weapons. But, to attack a ship and its crew, would require a much greater number of men and weapons. It would require a ship, perhaps, to intercept the target ship; or the terrorists would have to disguise themselves as passengers. Either way would cause more attention than in an

air hijacking. On board an aircraft, armed guards would hesitate to shoot, because the bullet could damage the fuselage and cause a pressure problem in the aircraft in flight. That is why studies are being done using slow-velocity bullets to hurt the hijackers by staying inside their bodies but not to penetrate through them. On board a ship, a severe gun battle can take place without sinking the ship. There have been some cases of mutiny in which different gun positions with 40mm and larger calibres were turned round and shot against each other between the contesting parties on the same ship. It is not easy for hijackers to overpower a crew, if the crew is armed or there are armed guards. They could put up a fight after being hijacked, if they were trained for it.

(7) One objective of terrorism is to generate some sensational head line news, or more important, TV camera coverage so it can be seen by the general public. A hand grenade exploding in a crowded downtown area will draw a great number of news reporters to the scene. But there would be no on-the-spot witnesses to a gun battle on board a ship at sea. TV men and by-standers would not be available until the ship came into harbour. Some trouble-makers have found that a non-violent demonstration in a crowded city can create as much attention as a bloody hijacking. Therefore, in order to make a certain political view felt, terrorist attack at sea is not the best method. It would only be worth it if they were to use some more drastic measures at sea to maximize the threat and publicity. It is not entirely impossible for terrorists to use some nuclear explosive devices, radioactive weapons, or to attack some nuclear facilities and installations. Because nuclear power stations and water for cooling, many nuclear reactors are near seashores within the reach of terrorists at the sea.

Assume that a ship steered by some terrorists has managed to come into a harbour and anchor. The ship suddenly announces that she has some sort of nuclear device on board, and the terrorists threaten to detonate it if their political demands are not met in time, or if the ship is boarded by any rescue force. It is not entirely impossible for some terrorists to steal a nuclear device, or even to crudely make one. It might not be a regular bomb. It can be just some sort of radioactive material illegally obtained from a medical centre or research outfit. With what they claim to have on board the ship, they are capable of harming society. The amount of expertise needed to construct a simple device for dispersing radioactive material is no more than that derived from

college physics, chemistry and engineering. If they are short of this, they could just make some empty bluff without actually possessing any nuclear device, so long as they could convince people they have something. The other option for them is to attack some offshore oil facility.

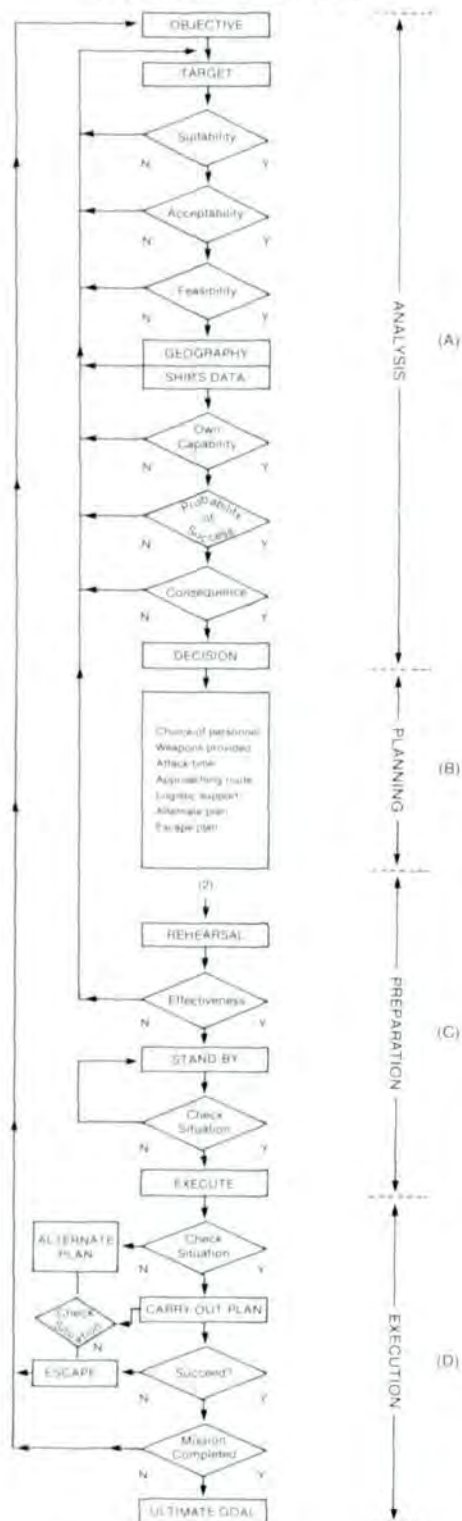
Operations of Terrorists at Sea

There are no commonly known rules of operation by terrorists at sea. Methods employed by terrorists vary from case to case. But, nevertheless, due to the nature of the game and maritime environment, the accompanying flow chart might be used to describe the logical steps adopted by terrorists. We have reason to believe that terrorists are well-chosen, daring and smart men or women while the master-minds behind them are certainly highly intelligent and cunning. Their operations might be generalized and categorized into logical sequences of (A) analysis, (B) planning, (C) preparation, and (D) execution, as shown in the chart.

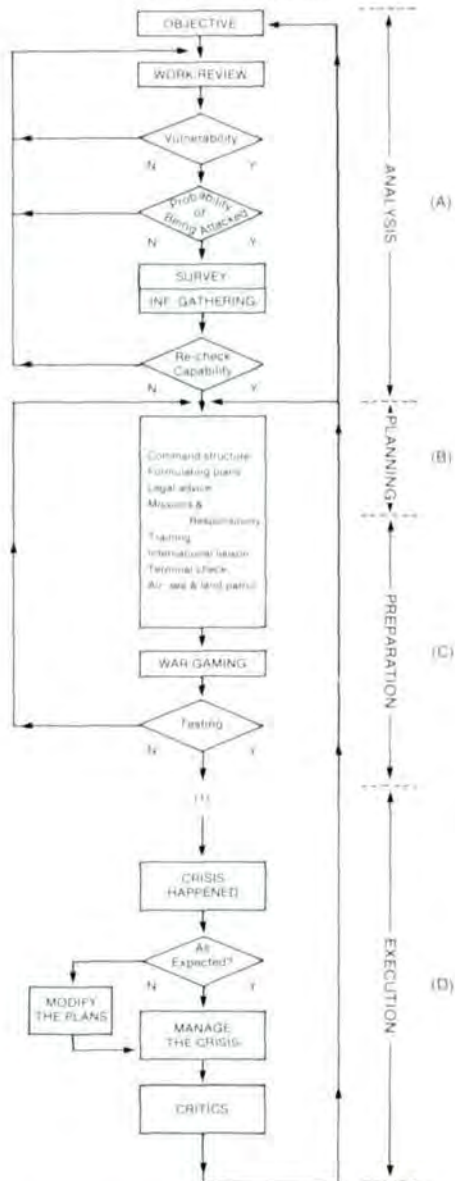
In (A), the terrorists have to determine their objective, that is, precisely what they want to achieve. They must keep the objective firmly in their minds as they choose their physical targets, the ships and passengers that they want to attack. They have to obtain information about the physical targets as well as the geography and the intended route of the ships. Then, they have to analyze the suitability, acceptability and feasibility of the targets and the whole operation. If all of these turn up to be favourable, then the said target is chosen and the decision is made. The next step is (B), planning how to do it. Choose the right men or women for action. Provide suitable equipment and weapons. Decide the time and place, and the way of approaching the target. Make an alternate plan in case things turn out differently. Also make plans for escaping (with or without hostages). The next step would be (C), preparation. Make every man or woman ready. Train them and rehearse the operation plan, evaluate the outcome of the rehearsal, and make necessary changes in the plan. Put the action team on stand-by, waiting for the order of execution. The final step is, of course, the (D) execution. If all conditions are as expected, execute the operation; if not, make changes.

Here, we have to point out one more thing. The operation does not end at step (C). In fact, the hijack begins at step (C) when the action team has to fight, negotiate and conclude the whole drama.

Flow Chart I
Operations of Terrorists



Flow Chart II
Counter Terrorism



Operations of Counter-Terrorism

Offensive and defensive operations are sometimes the two sides of a coin. In the previous section, we have pointed out the logic of terrorist's operations at sea. To counter them, the same steps could be followed, that is, step (A) analysis, (B) planning, (C) preparation, and (D) execution.

In (A) analysis, set out our goals on what to defend, and which group of terrorists we have to watch and counter. First, make a

thorough review of our counter-measures in the past to discover our own weaknesses. Then, re-estimate the current situation, lay emphasis on our own vulnerabilities. Keep on gathering new information and review constantly our capabilities to meet the attacks.

In the second step (B) planning, up-date our counter-terrorist plans, train our counter-forces, test combat readiness. Carry out war games with different scenarios. High ranking officers in the government, especially those involved in crisis management should be invited to witness the counter-terrorism war games and join in the discussion and criticism, because things may happen in the same way as that played in the games, or with some variation. A tremendous amount of thinking and discussion can be saved among governmental agencies and officials facing an actual crisis, if all the key players are familiar with the war games, and have played together in the same games.

Shipowners, shipmasters and crew, port administrators, and harbour police should also be invited to participate in the war games and to discuss the detailed and practical technical measures for improving the security practices on ships and in port terminals.

Conclusion and Recommendation

Terrorist attack at sea is nothing new. It happened in early history, and it is still occurring in our time. It is, however, in my opinion more difficult for terrorists to hijack a ship on the high seas than it is to hijack a civil airliner in flight. It is also more difficult to set instant sensational publicity while a ship is in a remote corner of the sea. But, nevertheless, it has happened. The frequency of terrorism on the whole is declining, but we cannot hope that terrorism, like many other acts of violence, will disappear for ever. The nature of terrorism is that it can only be solved by social change and political settlement. But, when an act of terrorism is being carried out at sea, it can only be rescued by military action to protect and save the innocent people. So, no matter what original mission might have been assigned to a navy of any nation, an additional mission should be added: "To combat the terrorism at sea."

Footnotes

1. China Post (Taipei) July 13, 1988, p.2
2. Captain John Moore, RN Jane's Naval Review, Jane's Publishing Ltd, London 1987, p.38
3. Vice Admiral Ko Tun Hwa (ret.), Piracy and Anti-Piracy, Paper prepared for Singapore SLOC Conference 1985



USS MIDWAY (CV-64) seen alongside in the Fremantle inner harbour on 10 November, 1989. The 64,000 ton carrier was the largest ship to have berthed in the inner harbour.

Photo: LSPH W. McBride, RAN

"MALTA CONVOYS 1940-43"

By Paul J. Kemp

Arms & Armour Press, London. 64 pp.,
distributed in Australia by Capricorn Link of Lane Cove, NSW. \$14.95.

The story of the Royal Navy's Malta Convoys is one of the most exciting and great naval campaigns of the Second World War.

These British convoys were fought through to the beleaguered island often against overwhelming odds with incredible courage and tenacity. Now Paul Kemp has captured the imagination with this pictorial work which includes 120 carefully selected black and white photographs, most from the Imperial War Museum and of a high quality.

Each photo is accompanied by a detailed and lengthy caption which takes this work out of the realms of being only a picture book.

Lying only 30 minutes flying time from Italian airfields in Sicily, the convoys endured every form of attack imaginable and heavy losses were sustained amongst both the merchant ships and their naval escorts which ran the gauntlet from Gibraltar and Alexandria.

One cannot overemphasise the fascinating photos chosen to illustrate this book, the 14th in the "Warships Illustrated" series.

Amongst the photos included is an interesting shot of the cruiser HMS Liverpool at Alexandria with her bows missing after an air attack and a subsequent ignition of petrol vapour; a superb shot of the Italian battleship Littorio underway at speed; the classic destroyer shot of HMS Kipling emerging at speed from a smokescreen in heavy weather to fire torpedoes; and the tanker Ohio engulfed in a wall of water at the moment of impact from a torpedo from the Italian submarine Axum.

The role played by the ships, aircraft and submarines based in Malta in the disruption of Axis supply lines cannot be underestimated. If Malta had fallen, communications with the Middle East and control of the central Mediterranean would have been lost and the reconquest of North Africa would have taken immeasurably longer.

This book is a tribute to the Malta convoys and the men who fought them through. A most enjoyable read.

Vic Jeffery



THE MODERNISATION OF PORTS

by

I.T. Croser, C.J. Davidson, M.G. Harvey

Ports all over the world are starting to automate their vessel traffic functions. The similarities between these vessel traffic systems, air traffic control systems and naval command and control systems are marked, though there are many differences in detail.

The brief article describes the Vessel Traffic Management System which has been recently installed by KAE (Australia) in Port Phillip Bay for the Port of Melbourne Authority (PMA).

Reasons for vessel traffic management

Port operations are complex, requiring the co-ordination of a wide variety of services, the provision and maintenance of navigational aids, the dredging of channels and billing of customers. Emergencies such as fire, explosion, spillages and medical evacuation have to be catered for. Liaison with many other authorities such as police, customs, and search and rescue units is also required from time to time.

The command and control system for all these tasks has been the shipping control tower, usually well equipped with communications and with a textual movement advice system. Some ports are also equipped with radar, often employing the same ARPA (Automatic Radar Plotting Aid) devices which are now standard on merchant vessels.

Proliferation of techniques such as VHF/DF, use of radio and telephones, radar and visual sightings has led to the need for integration of all information sources so that a clearer picture of port operations can be achieved.

Systems which provide this integration are known as vessel traffic systems. As we move

into the last decade of the century, the majority of ports worldwide are considering installation of such systems.

The attractions of information integration are great:

- knowledge of exact vessel ETA can increase efficiency of tug, pilot and berth usage;
- monitoring of navigational aids can help to identify vessels which collide with them, so that damages may be recovered;
- port charges can be automated;
- traffic can be reliably managed;
- information on movements can be disseminated to all potential users: e.g. pilots, port vessels, customs, police; and
- navigational advice may be provided to vessels in potentially hazardous situations.

System architecture

A typical system architecture is given in Figure 1. Here the information sources are the radar systems, other sensors such as tide and weather monitors, VHF/DF, the shipping movement information system which provides advances, notice of movements, and operator inputs. The information outputs are track positions, berthing status, ETA information and recording information.

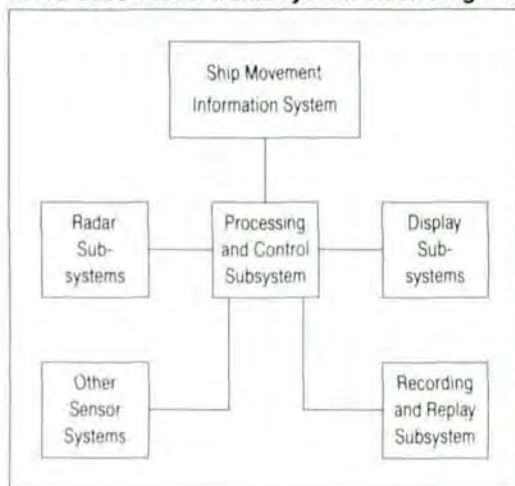
Design problems

Vessel traffic systems present many difficulties to be overcome before effective integration can occur. Some of the major difficulties are outlined below.

THE AUTHORS

The three authors of this article, all coincidentally former RAN WE officers, formed the leadership and nucleus of the design and development team created to implement the Port of Melbourne VTMS project.

Figure 1:
MTIC 9000 Vessel traffic system block diagram



Identification

As with the air traffic control and naval combat systems, identification is the key problem to be overcome. In clear weather during daylight hours this is not a problem, but under all other conditions when visibility is impaired, total reliance has to be placed on radio communications with the vessel. VHF/DF provides a partial solution, but the accuracy of these systems is often not sufficient to resolve identity, and in any case these systems

are very expensive and can not identify the smaller harbour support craft and ancillary vessels.

The identification problem for vessel traffic systems is different to the other two systems. Ports are very cluttered, with tugs, pilot vessels, dredges, busy maintenance vessels, barges, pleasure craft, fishing boats and yacht races all confusing the radar picture. Additionally the navigation aids themselves (bouys and beacons) provide large numbers of radar tracks, and correlation with known identities needs to be accurate.

A typical port will require at least a track capacity of 250, and some very busy ports (for example, Singapore which has some 300 large vessel movements per day) may require track capacities of 1,000. The potential for misidentification is thus enormous.

Clearly a transponder system of some sort is required. Since many transponders (at least one for each navigational aid and port vessel) will be needed, they need to be very cheap. Additionally, either the transponder system needs to be portable (e.g. pilots can carry on board) or widely fitted world-wide.

The system fitted to Port Melbourne has the inbuilt capability to provide a transponder system. Such a system which uses modulation of the radar PRF as one transponder trigger is under development by CEA Technologies Pty Ltd, a Canberra based research and development company.



Figure 2:

1. OVERALL PICTURE

A Williamstown Remote X-Band Radar Site.

(Unmanned. Communicates with Control Centre via a duplex 2Mbps Telecom supplied link)

B Control Centre and local S-Band Radar Site.

C Pt. Lonsdale Remote Display Site. (Communicates with Control Site via duplex 2400 Baud land line)

D Pt. Nepean Remote X-Band Radar Site.

(Unmanned. Communicates with Control Centre via a duplex 2400 Baud radio and land line data link.)

Sensor siting

Ports usually have complex geographics characterised by winding channels, islands and large structures. The possible sensor sites are confined to land, and may be widely dispersed to achieve the coverage required. A good example is Port Melbourne, (Figure 2) where two radars (one on the control tower and the other at Williamstown) are required to cover the main channel up the Yarra and a further radar is needed (at Port Nepean) to cover the entrance channels and approaches to Port Phillip Bay.

The routing of radar video and track information from several widely dispersed sites, and the problem of remote sensor control, requires data links. In order to minimise costs, it is advantageous to minimise the data rate on these links.

The PMA system uses data compression and multiplexing techniques which allow radar control, tracks and four channels of video to be passed on a 2Mbps standard Telecom data channel.

Large targets

In order to resolve close targets of interest in channels, it is necessary to have a high gain (small beam-width) radar antenna. Typical beam-widths are in the order of 0.5 degrees.

While this gives excellent resolution of small targets even at very short ranges, the narrow beam-width presents problems when attempting to track large targets. For a radar with 0.5 degree beam-width, a 1,000 foot vessel will present an echo which is 19 beam-widths wide at 1 mile range, but only 1 beam-width wide at 20 miles range. This means that the detector tracker will detect a mass clutter object at short ranges, but a point target at long ranges.

Most radar trackers have been designed to cope with air targets, which are relatively small and move at high speeds. These trackers usually reject mass targets as clutter.

A vessel traffic system, however, requires an area tracker which can cope equally well with point and mass targets. The PMA systems radars are fitted with Australian designed trackers which are capable of 256 simultaneous tracks to 40 miles in range, and which cope with the problem outlined above.

Fortunately, since land objects are not of interest, vessel traffic systems are able to blank all land returns using a high resolution stored map at the radar site. This ensures that the tracking system is not overwhelmed by clutter. Land can be represented on the operators screen by a synthetic colour map.

Radar presentation

For best picture it is desirable to use a high quality colour graphics display. This gives good control of symbology, labelling synthetic maps, and menus, as well as the operator cursor.

Two problems are evident, however.

The radar video is in PPI (polar) format, while the colour graphics display is raster (cartesian). In order to present the radar picture, it needs to be converted to the new format. A complicating factor here is the need to be able to offset anywhere in the operating area, and to zoom to any desired range scale. This has been solved in the PMA system by using an Australian designed zoom extractor which performs the necessary windowing, scan conversion and video in-fill at the radar site, prior to transmission across the data link.

A second problem is the mixing of the radar video, from perhaps up to four radars, with the normal colour graphics synthetics presented on the display screen. This has been achieved for the PMA system using high speed video buffers, a radar video mixing unit, and finally, addition of the radar video to the synthetic information video immediately prior to display. The key point is that there are two separate video inputs to the display — the video produced by the radar extractor and the synthetic (menu, map, track) video being produced by the processing system. This relieves the graphics processor of the time consuming task of radar video presentation and allows it to be totally utilised for symbol movement and high resolution map presentation.

Dissemination of information

There are potentially large numbers of users of the correlated real time information held in a vessel traffic system. These include:

- a. pilot services, which need to know the latest ETA and ETD information as well as pilot launch positions;
- b. tug management;
- c. berthing facilities;
- d. customs;
- e. police;
- f. channel movement control;
- g. costing and port charges;
- h. other authorities such as SAR services;
- i. emergency services; and
- j. coast watch and surveillance organisations.

There are thus potentially many displays, most of which require the synthetic information produced by the system (track identity position, ETA and map data), but usually will not need radar video. Additionally, ships would be

advantaged by having the port information of traffic movements, ship positions, hazards, berthing arrangements, etc. available to them.

Although at present only two displays are required by the PMA system, the system has been designed to accommodate large numbers of displays, and development of radio linked portable displays for pilot/shipboard use is in hand.

Applications of VTS technology

Vessel traffic systems, and particularly the design installed for the Port Melbourne Authority, have many other potential application areas. These include:

- a. oil rig collision warning systems;
- b. coastal surveillance systems;
- c. range safety systems;
- d. radar simulation systems;
- e. airport ground vehicle tracking systems;
- f. specialised radar measurement systems, and
- g. enhancements to existing radar systems.

System flexibility

As the system was designed for flexibility from the start, it has inherent capability for expansion to accommodate:

- up to 8 radars,
- up to 8 radar video capable interactive colour displays,
- up to 20 interactive colour graphics displays,
- large numbers of remote displays — from portable, to laptop, to hand held,
- up to 4 VHF/DF systems,
- radar transponder systems integrated with each radar, interfaces to Port vessel movement and costing information systems,
- special purpose customised interfaces,
- up to 256 tracks from each radar,
- up to 512 system tracks.

An Australian innovation with world market potential

The Vessel Traffic Management System for the Port of Melbourne Authority was implemented by a partnership of Australian Industry with more than 75% local content. Krupp Atlas Elektronik (Australia) performed the role of Prime Contractor and carried out the project management, software engineering and Quality Assurance.

CEA Technologies Pty Ltd of Canberra worked in close cooperation with KAE (Australia) with responsibilities for System Design as well as the design, development and manufacture of the radar processing sub-system and specialised communications equipment.

Marine Navaid Systems Pty Ltd of Sydney performed the task of procurement and modification of radar antennae and transmit/receive hardware together with overall system installation.

The Port Melbourne VTMS is a classic example of how investment in Australian design can pay handsome dividends and is:

- A delivered system which exceeded the customer's expectations.
- A system which leads all other competing technologies, with a potential world market of 500 ports.
- A system which is capable of penetrating other markets and other application areas.
- Clear lines for diversification and product enhancement.
- Development of a high quality electronic systems design and development team.

With the successful commissioning of the PMA VTMS earlier this year, KAE (Australia) and CEA are now working in consortium in active pursuit of potential future opportunities for similar systems and applications of derivative technologies in Australia and Overseas.



DRAINING THE SWAMP

by

Commander C.J. Davidson BSc(Eng) RANEM

It was while serving as a Lieutenant that I first became aware of the central problem facing the Navy.

I was committed to the task of Divisional Officer, but letters to Navy Office were either being misinterpreted or (more usually) not replied to. Pondering this situation, I became aware that the central difficulty was to define the problem before developing strategies for resolution.

The First Model

Figure 1 shows my first attempt at unravelling the true nature of Navy Office. I had of course read "Parkinson's Law" and "The Peter Principle", but I felt that neither really described the true inner workings of the organisation. Defence directories and organisation charts were, of course, worse than useless as aids

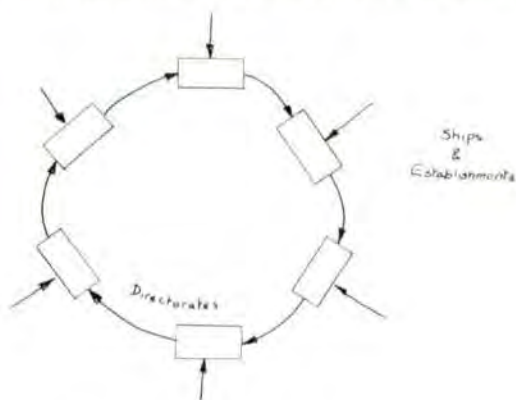


Figure 1: Swamp Precursor

to understanding. What was needed was a simple model which we could all understand.

In the figure the establishments and ships feed reports, letters, complaints, lies etc to the head office directorates which are represented by rectangles. The flow of information within head office is represented by arrows — as the directorates clear their in-trays, the paper is put on file and minuted to the next directorate in the chain.

This excellent model had the virtue of simplicity, and of course explained many features of the Navy Office/Defence Department throughout the 'Seventies and 'Eighties.

- Nothing gets answered.
- If nothing is done, the system becomes jammed with paper, so:-
 - The number of directorates/size of directorates increases.
 - The number of filing cabinets required increases.
 - More buildings and desks are required.

Promotion

In due course I was promoted to Lieutenant Commander and immediately gained the more balanced and objective insight which comes with greater seniority. It was quite clear to me that my model was glaringly wrong — I had at last detected output from the head office.

This, of course, comes in the form of Defence Instructions. I well remember one of the first of these, directing the Navy to change the position of name tallies. A field reaction to this earth-shattering instruction (which is reproduced from memory) is given in the box.

THE AUTHOR

Colin Davidson served in the RAN as a Weapons Electrical Engineer Officer from 1966 to 1986. He now is the Senior Systems Engineer with CEA Technologies Pty Ltd, a Canberra based Electronic Systems Research and Development company.

SUBVERSIVE OFFICERS
MEMORANDUM 1/76

Reference: DI(N) ADMIN XX-X

1. In future name tallies are to be worn backwards.
2. This is so that people can identify themselves in mirrors, and conforms to practices current in the other two services.

A.N. Archy
Subversive Officer

The Swamp

The problem of output had to be grappled with as it threatened the simple model I had developed. This took time, but after painstaking research I managed to produce Figure 2.

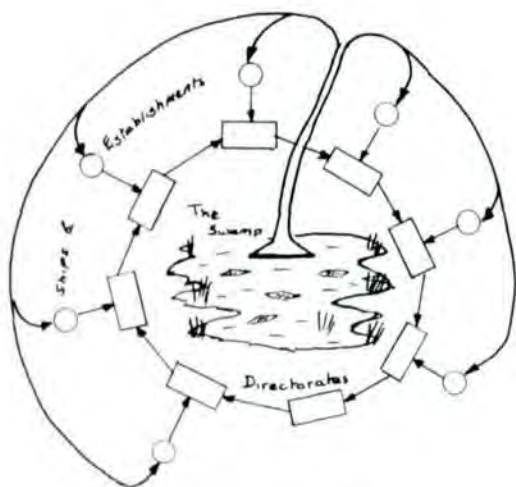


Figure 2: The Swamp

In this figure, the establishments and directorates are shown as before. Where it differs from Figure 1 is in the output mechanism.

Directors now have a choice — they can either pass papers on to other directorates as before, or they can throw them into the output mechanism. This is known as the committee system, but more precisely identified in the diagram as The Swamp.

Here papers float in profusion. A vacuum cleaner (with a suction rate equal to the rate at which papers from any one of the establishments/ships reaches head office) plys

randomly over the surface of the swamp, sucking up floating papers and formatting them into Defence Instructions by appropriately stamping and dating them. They are then passed to the outlying ships and establishments.

This refinement to the model predicts that:

- Papers which deal with meaty matters, being heavy, are more likely to sink and not be resolved.
- The output is random — no one knows that will eventually go out, or when.
- As the output rate of the system is less than the sum of the inputs, the previously identified increases in staff, filing cabinets and buildings continue, albeit at a lesser rate.

Archives

What happens to the water-logged, unresolved papers which sink to the bottom of the swamp? If nothing is done about this sludge, the swamp will become full and require enlargement. Although we know from observation that the swamp is often increased in size (more committees are formed) there is a mechanism by which the sludge can be drained, known as archiving. This process is shown diagrammatically in Figure 3.



Figure 3: Waste Removal

Inhabitants of the Swamp

Figure 4 shows the swamp in more detail. We all know that garbling occurs, and that papers dealing with financial matters are unlikely to be resolved to the output.

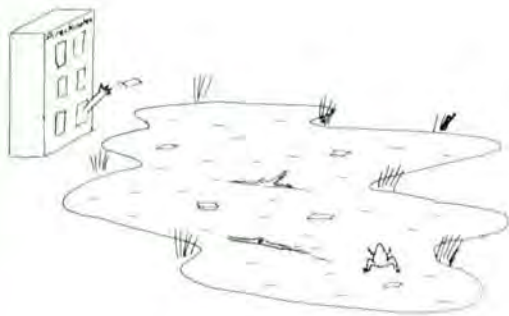


Figure 4: Inhabitants

Cruising the swamp are crocodiles. They have a dual role: firstly they mangle papers, and secondly they deter directors from retrieving papers thrown in error. This deterrence is shown in Figure 5, which explains where the expressions "changing your arm" and "right hand man" come from.

Also in the swamp are frogs which are particularly attracted to any papers with dollar signs. Landing on these, the frogs accelerate the sinking process, and help to keep the top of the swamp free of financial commitments.



Figure 5: Right Hand Man

Coping With The Swamp

It is apparent that the position of director within the system is a very poor one. He has to cope with quite massive flows of paper, both from the establishments/ships in his charge, and with the paper chase around the system. If he makes a mistake and tries to recover it, he is very likely to suffer a disfiguring

humiliation (see Figure 5). Thus the way ahead for directors is indicated: either

- leave the system by going to ships/establishments, or
- try for conversion to Committee Crocodile or Financial Frog! (These jobs are also quite good fun).

For those in establishments or ships, there is little advice I can give. Writing identical letters at regular (say monthly) intervals will probably mean that different directorates will deal with them, and that multiple copies will end up in the Swamp. The problem here is that due to the garbling process, at least two entirely conflicting Defence Instructions are quite likely to result (there is a 12.6 per cent chance of this happening). I leave the decisions on the course to take in this event in your capable hands!

Draining The Swamp

I am at a loss as to what to do about it all. The system is very large now, with a plethora of crocodiles and frogs which are nasty customers to deal with (some frogs have been known to rob grandmothers blind). Possibly the recent reduction of Service Swamp positions may help, but if the eliminated functions are performed by extra Public Swampmen then beware: it is obvious that to avoid being working directors they can only become Swamp inhabitants and thus increase the size of the problem.

Reading "Up The Organisation" by Robert Townsend (Coronet, 1971) indicates that benign dictatorship might help, but identifying a suitable candidate for the position is difficult.

I throw myself on your ingenuity. Why not write to the editor with your suggestions?

**C.J. Davidson,
21 Bereton Street, Garran ACT 2605**



ACTION STATIONS

Iris Nesdale has written a new book on the histories of the Australian Tribal Class Destroyers HMAS ARUNTA, HMAS WARRAMUNGA and HMAS BATAAN. The price will be \$30 and it will be published early December in time for Christmas presents this year. This is a limited edition so please forward your orders on the attached form.

ORDER FORM

MR J.A. SPURR
Veterans' Association
HMAS WARRAMUNGA VETS. ASSOC.
40 PULSFORD RD
PROSPECT SA 5082

Please mail me copies of the limited edition book "ACTION STATIONS" on publication for which I enclose my remittance for \$30 per copy plus \$5 mailing charge.

OR

I shall collect my copies from the State Branch Association for which I enclose my remittance for \$30 per copy.

Name (PLEASE PRINT)

Address Postcode

COMPLETE AND POST NOW — CHEQUES PAYABLE TO — "ACTION STATIONS BOOK ACCOUNT"



NOTICE OF ANNUAL GENERAL MEETING

Notice is given that the Annual General Meeting of the ANI will be convened in Canberra on Thursday 22 February 1990 at 7.30pm for 8.00pm. The venue is Legacy House, 37 Geils Court, DEAKIN, ACT.

Items for inclusion in the agenda should be forwarded to reach the Secretary no later than 9 February 1990.



NOMINATION FORM FOR ELECTION OF OFFICE BEARERS AND ORDINARY COUNCILLORS FOR 1989/90

(initials) (surname)

Membership number nominate:

	NOMINEE	FOR POSITION	SECONDER	SECONDER'S SIGNATURE
a.				
b.				
c.				
d.				
e.				
f.				
g.				
h.				
i.				
j.				
k.				
l.				
m.				
n.				
o.				

Signed _____ (proposer) Date _____

Return to:

The Secretary
Australian Naval Institute
P.O. Box 80
CAMPBELL A.C.T. 2601

NB: To reach the Secretary by 9 February 1990

NAVAL INSTITUTE INSIGNIA

(Order form on page 48)

Crests

Crests are meticulously hand-painted in full colour and are handsomely mounted on polished New Zealand timber. They measure 175mm x 130mm (5" x 7"). The price is \$13.00 each, plus \$2.00 postage + packing.*



Cuff-links

The cuff-links are robustly made and are attractively finished in gold and black. They are epoxy-capped to ensure long life and are packaged in presentation boxes. The price is \$10.00 a pair, plus \$1.00 postage + packing.*

Ties

Ties are dark blue with a single ANI badge in gold. Price \$7.00 plus \$1.00 postage + packing.*



Journal binders

Journal binders are coloured blue with gold lettering and ANI crest. Each binder holds copies of the journal by means of a metal rod inserted simply through the middle page of each journal and held firmly at top and bottom of the binder. Plastic envelopes on the bottom of the spine enable volume numbers or years to be inserted. Price \$8.00 each plus \$2.00 postage + packing.*

[* Can be deleted if alternative means of carriage are arranged]

AUSTRALIAN NAVAL INSTITUTE

COUNCIL MEMBERS

MEMBER	POSITION	ADDRESS	PHONE
CDRE I.A. Callaway	President	L-2-05	65 4588
CMDR S.P. Lemon	Snr Vice President	A-B-08	65 5020
CAPT I.A. Noble	Jnr Vice President	H-1-18	65 4958
CMDR T. Bloomfield	Public Relations	D-3-15	65 3194
CMDR D. Agar	Editor	N-2-20	65 2020
CMDR S.E. Tapley	Records	A-1-6A	65 5034
CMDR N. Torrens	Library	A-3-26	65 5124
LCDR M.S. Barnes	Treasurer-Insignia	CP3-1-Bay3	66 4139
LEUT B.G. Delamont	Secretary	L-6-13	65 4565
LEUT T. Frame	Membership	A-4-22	65 6959
CMDR B. Dowsing	Councillor	A-2-16	65 5092
CMDR E.J. Coles	Councillor	CP-4-6-40	66 3821
LCDR R.M.O. Hawke	Councillor	D-3-32A	65 3217
LCDR J. Jones	Councillor	2 Bris. Av	
LEUT A.R. Douglas	Councillor	F-3-CDF	65 4644

PUBLIC OFFICER

CAPT L.G. Fox RANEM			70 6983
---------------------	--	--	---------

ANII PHOTOGRAPHER

POPH E. Pitman	ANII Photographer	I-G-17	65 3766
----------------	-------------------	--------	---------

SYDNEY CHAPTER

LEUT A. Brown RANR	Secretary	40 Mandolong Rd Mosman NSW 2088	
--------------------	-----------	------------------------------------	--

MELBOURNE CHAPTER

CAPT H.F. Helyer RAN	Convenor	HMAS CERBERUS Westernport Vic 3920	
LCDR A. Hinge	Secretary	HMAS CERBERUS Westernport Vic 3920	857 7214
Mr C. Sanguinetti	Treasurer	DNATS	

For those in	New Zealand, PNG	A\$11.00
	Indonesia, Malaysia, Singapore	A\$13.00
	Hong Kong, India, Japan	A\$15.00
	Canada, USA	A\$18.00
	Europe, South America, UK	A\$20.00
	Other countries	On request

The price is \$25.00 each, plus \$2.00 postage plus packing.*

AUSTRALIAN NAVAL INSTITUTE INC
***APPLICATION FOR MEMBERSHIP/SUBSCRIPTION**
***NOMINATION OF CHANGE OF ADDRESS**

(Block Letters)

Rank/Title: _____ Surname: _____
 Other Names: _____ Service: _____
 Street: _____
 City: _____ State: _____ Postcode: _____

* I apply to join the Australian Naval Institute as a Regular/Associate members and enclose by cheque/Credit Card authorisation for _____ as _____ year(s) subscription.

* The above library/organisation wishes to subscribe to the Journal of the Australian Naval Institute and encloses a cheque/Credit Card authorisation for _____ as _____ year(s) subscription.

If accepted for membership, I agree to abide by the Constitution and By-laws of the Institute.

Date

(Signed)

Please debit my BANKCARD/MASTERCARD

Number

Expiry Date

(Members or subscribers who join during the year will receive back copies of the current volume of the Journal).

* Delete as appropriate

Membership fees are kept to a minimum, commensurate with the need for the Institute to remain self-supporting. As of 1 January 1989 the subscription rates are:

	Annual	2 years	3 years
Members			
(Regular and Associate)	25	48	65
Journal Subscribers	27	52	75

A copy of the quarterly journal is sent free to all financial members. Fees fall due annually on 1 January.

INSIGNIA ORDERS

Please forward:

pairs of cuff-links * \$10.00 \$ _____ journal binders * \$ 8.00
 mounted crests * \$13.00 \$ _____ ties * \$ 7.00

I enclose my cheque for \$ _____ including \$ _____ postage if delivery is to be by Australia Post.
 (delete if alternative means of carriage are arranged.)

Name:

Address:

Post Code:

All cheques/money orders should be made payable to The Australian Naval Institute Inc and should be in Australian currency.

Inquiries and applications for membership should be directed to:

The Secretary
 Australian Naval Institute
 PO Box 80
 CAMPBELL ACT 2600

ADVERTISING INFORMATION

Size of Journal	— B5 International (Print area 215mm x 145mm)
Printing Process	— Offset Litho.
Full Page Size	— 50 picas deep by 33 picas wide
Half Page Size	— 50 picas deep by 16 picas wide
	— 25 picas deep by 33 picas wide
Material Form Required	— B & W: Clean art work or negatives.
	— COLOUR: Four colour separation negatives.
Screen Size	— 133 preferred but 125–150 acceptable.

ADVERTISING CHARGES — 1989

Colour	Standard \$A	Discount \$A	Bulk \$A
Centre Double Page	800	700	630
Back Page	500	450	405
Internal Page — Single	400	350	315
Internal Page — Double	700	600	540
Half Page	300	275	250
Black and White			
Centre Double Page	330	330	270
Back Page	180	160	150
Internal Page — Single	165	150	135
Internal Page — Double	300	275	250
Half Page	135	120	110

Notes:

- 1 The Discount Rate applies if a booking is for four or more successive journals with the same advertisement. The Bulk Rate is for the same if the total bill is paid with the initial order.
- 2 The deadline for material are: No.1 — 21 Jan, No.2 — 21 Apr, No.3 — 21 Jul, No.4 — 21 Oct.
- 3 Payment should be made on receipt of the invoice.
- 4 The above prices are nett and do not include any agency commissions.
- 5 A copy of each journal will be sent to the advertisers.
- 6 Two — Three — and Four-colour line advertisements can be inserted. Prices will be supplied on request.
- 7 Further information can be supplied, on request to the Advertising Manager, who can be contacted by phone on (062) 653194 between 8.30am and 4pm Monday to Friday.

AIR MAIL RATES

Members and libraries overseas who would like to receive their journals by air mail, should add the following sums to their subscription orders.

For those in	New Zealand, PNG	A\$ 9.00
	Indonesia, Malaysia, Singapore	A\$11.00
	Hong Kong, India, Japan	A\$13.00
	USA, Canada	A\$16.00
	UK, Europe, South America	A\$18.00
	Other countries	on request

NOTE: Surface/ordinary rates are included in the subscription.

THE AUSTRALIAN NAVAL INSTITUTE INC

PATRON

His Excellency the Honourable Bill Hayden, AC
Governor-General of the Commonwealth of Australia

COUNCIL

OFFICE BEARERS

President
Commodore I.A. Callaway
Senior Vice President
Commander S.P. Lemon
Junior Vice President
Commander I.A. Noble
Secretary
Lieutenant B. Delamont
Treasurer-Insignia, Subscription
Lieutenant Commander M. Barnes
Journal Editor
Commander D.R.G. Agar

COUNCILLORS

Commander T. Bloomfield
Commander B. Dowsing
Lieutenant T. Frame
Lieutenant C. Maxworthy
Commander S.E. Tapley
Commander N. Torrens
Lieutenant Commander R.M.O. Hawke
Commander E.J. Coles
Lieutenant A.R. Douglas

PAST PRESIDENTS

1975-77 Commodore V.A. Parker
1977-78 Commodore J.A. Robertson
1978-83 Rear Admiral R.C. Swan AO CBE
1983-86 Commodore I.B. James AW
1986-87 Captain A.H.R. Brecht

HONORARY LIFE MEMBERS

Admiral Sir Victor Smith AC KBE CB DSC
Vice Admiral Sir David Stevenson AC KBE
Admiral Sir Anthony Synnot KBE AO
Commodore J.A. Robertson
Rt Hon Sir Zelman Cowan AK, GCMG, GCVO, QC
Rear Admiral R.C. Swan AO CBE
Commodore I.B. James AM
Commander G. Cutts
Commodore A.H.R. Brecht

FOUNDATION MEMBERS

Bennett, G.A.
Berlyn, N.R.B.
Bonnett, V.W.L.
Brecht, A.H.R.
Broben, I.W.
Calderwood, G.C.
Cole, S.E.W.
Cummins, A.R.
Cutts, G.
Dalrymple, H.H.G.
Davidson, J.
Dickie, D.D.
Fisher, T.R.
Fox, L.G.
George, J.

Gibbs, B.G.
Goddard, F.C.
Grierson, K.W.
Hall, I.W.
Hermann, F.J.
Histed, G.
James, I.B.
Jervis, G.E.
Josselyn, I.K.
Kemp, W.A.
Knox, I.W.
Lee, N.E.
Loftus, W.B.
Lossli, R.G.

Martin, D.J.
Martin, P.C.S.
Mayson, J.H.
McDonald, N.E.
Macleod, B.D.
Nattey, R.J.
Nicholson, B.M.
Nicholson, I.H.
Orr, D.J.
Parker, V.A.
Patterson, D.R.
Ralph, N.
Read, B.J.
Reynolds, I.

Robertson, J.A.
Scott, B.P.
Sharp, W.R.
Shearing, J.A.
Smyth, D.H.D.
Snell, K.E.
Stephen, K.C.
Stevens, E.V.
Stevens, J.D.
Summers, A.M.F.
Swan, R.C.
Swan, W.N.
Williams, K.A.
York, D.

Public Officer: Captain L.G. Fox RANEM

The advanced SONAR concept

Integrated Sonar Systems



for Submarines

for Surface-Ships

for Mine Counter Measure Systems



KRUPP ATLAS ELEKTRONIK