

of the

August/October 1994



AUSTRALIAN NAVAL INSTITUTE INC

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

 To encourage and promote the advancement of knowledge related to the Navy and the maritime profession,

 to provide a forum for the exchange of ideas concerning subjects related to the Navy and the maritime profession, and

· to publish a journal.

The Institute is self-supporting and non-profit-making. All publications of the Institute will stress that the authors express their own views and opinions 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:

- Regular Members. Regular membership is open to members of the RAN, RANR, RNZN or RNZNVR and persons who having qualified for regular membership, subsequently leave the service.
- 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.
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 distinguished contribution to the Navy or the maritime profession, or by past service to
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ACKNOWLEDGEMENTS

The Australian Naval Institute is grateful for the assistance provided by the corporations listed below. They are demonstrating their support for the aim of the Institute by being members of the "Friends of the Australian Naval Institute" coterie.

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Journal of the Australian Naval Institute

Volume 20 Number 3 August/October 1994

SPECIAL FEATURE

This issue features two 'What came first - the "Chicken (policy) or the Egg(force structure)" stories"!the analytical and practical links between defence policy, naval strategy and force structure are not nearly as neat and logical as we would like to think.

Sometimes, the development process can even be inverted, with existing or traditional force structure feeding back into strategy and then policy! Interesting views on these issues are given by Rear Admiral Fred Crickard and Lieutenant Commander Robyn Whitworth in separate articles.

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HMNZS WAKAKURA silhouetted by a fireworks display at the launch of the Maxi Yacht New Zealand Endeavour, Wellington, NZ. Courtesy of Lieutenant Commander L.G.K Schmitt RNZNVR.

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From the PRESIDENT

How many readers have heard of 'King's Point', the US Merchant Marine Academy? Well, this issue provides a good chance to find out what goes on there - in an excellent article by WO2 Graham Wilson of the Australian Army Intelligence Corps. At first it may seem strange that a soldier is writing on the topic, but I am told by reliable sources that Graham has impeccable naval credentials. Some of his relatives - including his father - have served in the Navy and being the son of 'Tug' Wilson (which one?) makes him one of 'us' by blood!

Also included in this issue are two ANI silver medal winning essays, and the transcript of the 1994 Vernon Parker

Oration, which was delivered by RADM Fred Crickard earlier this year and provided a lively discussion period.



One of the key objectives of the Australian Naval Institute is providing a forum for the exchange of ideas concerning subjects related to the navy and to the maritime profession. Consequently, this journal is produced at considerable expense to serve as a vehicle to achieve this objective, and in this issue we present the first instalment of a seven part series....'Fighting Smarter', which looks at modern naval weapons and tactics and how they can be employed to their greatest effect. Like many other organisations the navy is under increasing pressure to continually improve performance by using its people and resources more efficiently, and the ANI Council sees the journal as having a very practical role in this. By encouraging all those who share the objectives of the Institute to transmit their knowledge and contribute material to a wider audience, professionalism and 'operational productivity' can be improved. For example, in this issue we look at mine warfare and concentrate on key principles for using the 'weapon that waits'. We also examine some common misconceptions relating to mine use. Follow on articles in the series will deal with the art of organising naval raids, ASW, submarine warfare, patrol boat operations and amphibious operations. The 'Fighting Smarter' series is designed to provide a hard professional edge to the journal. Of course, as much variety as possible is still required for a professional journal of this nature and we also need articles and comments concerning personnel issues, training, and practical pointers on maritime skills. In fact, a 'Nobody Asked Me, But...' style column will be incorporated in the Nov/Jan issue to provide a forum for comment.

I cannot sign off without giving another plug for the Naval and Maritime Photographic Contest. Some very good entries have been received, but time is running out with the deadline being COB Friday 18 November. Full details are given in the centrefold of this issue. Finally, 1995 promises to be a big year for the Institute and the Council is currently considering proposals to assist in organising two conferences: one with a naval historical flavour and another with a strong modern operations 'bent'. Members will be given further information as planning progresses and more details come to hand.

Chris Oxenbould

A LETTER FROM WELLINGTON

A CANDID LOOK AT THE POLITICAL/MILITARY SITUATION ACROSS THE TASMAN BY OUR UNDER-COVER NZ CHAPTER CORRESPONDENT.

The Defence Scene

he big news for the NZ naval community is the launch of the first ANZAC ship. More importantly for New Zealand, the keel is now laid for ANZAC 02, the first RNZN ship. She will be named *Te Kaha*, a Maori word meaning prowess as a fighter. While this is not a traditional name it is certainly in line with the British and French tradition of using inspiring adjectives like *Invincible*, *Glorious* and *Redoubtable*.

After years of doubt and public criticism here, the new frigates are at last being comprehended as in production, on time and within budget. The industry benefits too are being acknowledged and firms throughout the country have large, long term orders for a wide variety of frigate components. It is no coincidence that manufacturing has led our economic recovery and the boost to confidence, quality assurance and long term work that New Zealand firms have gained is directly attributable to the project.

There has, however, been other good news on the NZ defence scene. The capital equipment program is gaining momentum with an array of small but significant projects being approved by the government. After the 1991 Defence White Paper a series of Force Structure Reviews were initiated, but only one saw the light of day (the 'rebalancing' of the Army) and the rest sat in the pending tray through an election year. But now the improving economy, together with the government's control of the deficit, leads to an opportunity for the results of those reviews to be accepted: Phalanx for two of our Leanders, air defence missiles for the Army and next we expect approval to have the Air Force Orions' life extended by rewinging them. Beyond this we hope for consideration of the need for better weapons for the RNZAF Skyhawks, electronic upgrades for the P3s and the pressing need for a new Navy helicopter.

Our key defence spending aims in the next ten years are to:

- Provide a battalion sized land combat force ready for rapid deployment,
- maintain capabilities for the approved naval combat force.
- improve air and sea lift to deploy and sustain the forces,
- · redress deficiencies in the air combat force, and
- achieve further efficiency improvements in infrastructure

For the Navy here in the HQ, studies are underway examining options for 2005, after HMNZ ships Wellington and Canterbury have worn out. No results have been released, nor are they likely to be, but the need to have strong, logical arguments in place is realised. Nonetheless ships and helicopters are big ticket items and the political climate hasn't changed so radically that hefty defence spending will be easily accepted!

Current NZDF commitments

The decision taken in May to commit an infantry company to peacekeeping duties in Bosnia focused New Zealanders on the quality of our defence force as no other event. With 'live off the satellite' TV daily showing the horrors and the firepower of the Balkans War, the prospect of 250 Kiwis joining the UN's 'thin blue line' has re-created feelings of earlier wars in Europe. The decision to commit troops drew consistently wide support, even across the major political parties. Radio talk back hosts started to talk about 'our boys', but they didn't go so far as to play Vera Lynn songs! The UN operations are of course popular among the armed forces – distinctive missions that pose a professional challenge and enjoy public support.

Our troops deployed to Bosnia, where they joined a British battalion in Vitez. Hopefully the current cease-fire will endure and some progress may be made to real peace. But I expect that the term of the deployment will see the New Zealand force endure its share of scares, hardship and heart break – the very stuff that combat training is intended to prepare for.

Because of the Bosnia commitment a planned purchase of night vision equipment was brought forward but ran into the iron reality of the ANZUS rift. The US would not release Generation 3 equipment to only a 'friend', because this generation of equipment is reserved for allies — a salutary reminder that our 1984 excursion to independence still has its costs.

Since 1984 the Labour Party has sung the praises of the UN for our future security; indeed that was a major part of their rationalisation after the breakdown of ANZUS. Yet, ironically, the NZDF contribution to UN operations in Cambodia, Somalia and now in Bosnia has repeatedly meant that our servicemen and women have had to work with a wide array of nations, but especially closely with Australia, the United States and Britain. However, the reality of maintaining common professional standards so that UN operations can be effective, still eludes many commentators and groups here.

The Peace Movement

The Chief of the Defence Force, Vice Admiral Sir Somerford Teagle (honoured with a knighthood in June), has criticised the peace movement for 'simplistic and inaccurate rubbish' when debating Defence. Speaking to the annual conference of the Returned Services Association he called for inconsistencies to be challenged, and to demand a higher standard of accuracy when debating Defence issues. This call was made in the context of a longer report on the progress and activities of the Defence Force, but his criticism of the peace movement drew the ire of the Opposition. Her sensitivity clearly illustrated the close links between the Parliamentary Labour Party and the peace activists, and underline just how entrenched that party is about defence issues.

The 1984 ANZUS rift still arouses heated debate — was David Lange a hero or a charlatan? A recent docudrama called 'Fallout' portrayed much of the policy-making at the time as short term and reactive, rather than being carefully planned and thought out. Certainly the ANZUS rift went beyond the party platform, which implied that ANZUS would be maintained. It seems to me that the reason it doesn't 'go away' is that as a nation we still have a guilty conscience that we actually gave a friend an unwarranted kick in the shins. Yet we feel hurt that the friend retaliated. This was especially apparent in April when the US Commander in Chief Pacific, Admiral Larson visited New Zealand.

CINCPAC's Visit

His was the first visit since the Clinton Administration lifted the ban on Flag Officer level contacts with the NZDF, a ban that was one of the sanctions after our nuclear-free policy ended the ANZUS relationship. While the ANZUS impasse remains, the resumption of high level contacts was meant to reflect the reality of New Zealand's place as a friend (though still no longer an ally) and perhaps even a grudging acceptance that the nuclear free policy was in place for the long term. So Admiral Larson's visit was important to the NZDF – we wanted to show that despite the rift we hadn't withered on the vine.

In a whirlwind tour he was shown the three Services and given an overview of our achievements since 1987: Operations in the Gulf War, activities during 'Restore Hope' and other deployments, the re-equipment program, and our defence science effort. The message (we hoped) was one of 'small but efficient', and definitely outward-looking.

It's probable that the NZDF's message was received, but a far more powerful message was inadvertently delivered by the news media itself at the press conference that Admiral Larson gave. There, the top rank of New Zealand's journalists showed themselves to be small minded, parochial and locked into a 1984 framework. Here was the Commander-in-Chief, with a responsibility for half the world's surface and a man daily dealing with issues from Somalia to North Korea, yet our top journalists could only ask about his meeting with the Prime Minister and was there was a 'scheme' for getting back into ANZUS?... a repetitive and small-minded line of questioning. It was an example of 'little New Zealanders' at their worst.

The press conference was, however, an illustration of how the nuclear-free legislation has become some sort of icon, a frame for a self image that portrays us as 'David' against the nuclear armed 'Goliath' of the US. Irrespective of the demonstrated harm that our idealistic legislation has caused, blind to the fact that the issues of 1984 have all been resolved in the way New Zealanders wanted them, and deaf to the hints dropped that the US would meet us more than half way, our top journalists view the legislation as some sort of talisman that makes us proof against 'bullying'. The conference was an embarrassment to endure and was a vivid illustration of the long road ahead before New Zealand's opinion-makers begin to understand that a working military relationship with the US is of positive benefit to our nation, and well worth the cost of amending a now-irrelevant piece of legislation.

Political prospects

A winter public opinion poll (published by the NZ Defence Quarterly in June) showed that two-thirds of those surveyed agreed with the need for effective defence forces. This is a positive shift in public opinion, but the worrying part is that among professional men aged 30 to 50 the support was weakest. It is this audience we will have to strive to reach because the age group provides the political managers for the growing numbers of political parties.

The prospect of the MMP electoral system, and with it the virtual guarantee of coalition governments, makes the longer term in politics very unpredictable. The rise of the Alliance Party – an amalgam of far left, environmental and other liberal factions – shows that many in New Zealand hanker for the sort of social security where the government will provide everything. The Alliance defence policy, therefore, is simply to halve defence spending.

It happens that one of the senior figures in the Alliance Party is a resident of Devonport and a constant objector to any change at the naval base. New buildings, a new sports ground and the damage control school were all bitterly opposed by this individual and his local supporters. A self-appointed expert, he has written that the new frigates will be 'missile magnets'

Continued Page 10



The Editor, Journal of the Australian Naval Institute, Dear Sir,

I was most interested to read CPOETS Philip Solomon's article on Competency Based Training Assessment in the Royal Australian Navy. Being both an Associate Member of the Institute and by virtue of being the acting Industry Specialist for Electronics & Communications Systems for TAFE NSW being somewhat involved in the implementation of new CBT based courses at Trade and Technician level, I thought that it might be useful for me to comment on some of the issues that CPOETS Solomon raised.

The first thing to say is that CPOETS Solomon is not alone in his opinions. His basic observations are echoed by large numbers of experienced practitioners within the TAFE system and by a number of employers as well. As CPOETS Solomon pointed out NSW TAFE implemented a "national" system and in doing so intended to respond to the requirements of Australian Industry for an appropriate training solution during our national industrial reform process. It was in response to the expressed point of view of our "Industry" partners that the previous system of awarding marks and/or grades was dropped in favour of the "Competent/Not Competent" system. Now after some experience of this approach in the modular system TAFE has internally reviewed the effectiveness of the "Go/No Go" system from several points of view. It has been found to have the faults alluded to by CPOETS Solomon as well as proving burdensome to administer and tends to concentrate too much on the "parts" and not enough on the "whole".

TAFE is adopting a revised policy towards assessment in the CBT format. This assessment will be based upon assessing the student's competence in achieving the "purpose" of a module. This requires rather more effort on the part of those devising the assessment schemes but has the advantage of taking a more "holistic" view. In the previous "pass all learning outcomes" method a learner driver would be assessed on engine starting, steering, clutching, gear changing etc. Having passed all of these it would be assumed that the student could drive a car. Fail any one of them and it would be assumed that the student could not drive a car. The assessment scheme did not require the student to "put it all together". Under the revised

scheme students would after a suitable period of instruction be tested in a manner very similar to that now used in driving testing. The student drives and is monitored on how well they do the whole as well as the parts. Some errors will cause them to fail, e.g. speeding, whilst others will lose them marks, e.g. poor gear change technique. Passing the test requires the student to master a number of critical elements and achieve an overall passing grade on the rest

The driving test analogy is still a "Competent/Not Competent" situation. TAFE CBT policy however is being modified in this regard also. Broadly there will be three categories of assessment reporting. The "Pass/Fail" system will continue in some modules while provision will be made for schemes that allow for graded results to be given.

However for a very large number of modules in the Electronics and other engineering areas the assessments do lend themselves to awarding of grades. In these modules the assessment scheme will be quite similar to that presently used in the Advanced Certificate and Associate Diploma courses in Electronics & Communications and in Electrical Engineering. Assessment events are set up to reflect the scope and breadth of the module. Where there is a particularly important learning outcome it can be designated "critical" and a pass in that individual learning outcome is required as well as an overall pass. Each module will have to be carefully and individually assessed to arrive at the appropriate scheme.

It is important to note that these changes do not touch the core of the CBT system. These assessments are all "criterion referenced" and are not "averaged". Students will be assessed according to a clear set of performance criteria set out in the syllabus document. They will not be competing with each other to meet certain quotas of As, Bs and Cs etc. It is also important to note that the "passing" mark whilst being 50% need not indicate a "half" knowledge or performance. The assessment schemes in the electronics area will be so constructed as to mean that a "passing" grade will indicate that the student has substantially grasped the material. By judicious weightings of the different assessment events in a module a degree of "steering" can be exercised and a higher degree of reliability achieved about what things a student knows when the minimum level only is achieved.

I hope that at least some of CPOETS Solomon's objections will be answered by the changes that TAFE is putting into place at the present time. Unfortunately these changes will in the first instance be seen in the Engineering Technician program and will be retrofitted in the Trade program a little later. I and my colleagues at the Engineering Services Industry Training Division would be only too happy to discuss these matters with our colleagues in the RAN and to exchange ideas and solutions.

Yours Sincerely, C J Wallace-Thompson Beecroft NSW 2119

Editor Journal of the Australian Naval Institute Dear Sir,

I read with interest your recent article in the May/ July edition of ANI regarding Naval leadership today. Some interesting observations were presented however I must take issue with you in one area – that of nihilism amongst our junior personnel today.

Having recently completed a posting as Executive Officer in an FFG, I cannot agree that all our younger personnel are cynical about Navy life, at least not at sea! The demands the Gulf war placed on our personnel at sea was dramatic in the requirements for increased professionalism and this has not changed over recent years. Perhaps this is best demonstrated by the

intense and demanding checks and standards of readiness placed upon major warships by Maritime Command from before completion of refit and then right through the ship's operational cycle of shakedown, trials, workup and operational deployments. Indeed in our case we were subject to hands-on assistance and assessment at very regular intervals commencing with the Light Off Examination (successful completion of which gave us full sea going allowance!) and this never really stopped even after achievement of Minimum Level of Capability (MLOC). Indeed our Task Group was sea checked whilst on deployment to SE Asia by 30 members of the Sea Training Group to ensure the required standard was being maintained.

With the exception of a very small minority of personnel who have always voiced complaints about ships' activities and routines (and always will!), the vast majority of a ships company take up the challenge offered in bringing and maintaining a unit at MLOC and those who tag behind in application soon receive pressure from their ship mates to put in the required effort. The majority of the junior officers and sailors borne in my ship were from the generation you described as "poorly disciplined, poorly educated and much less well informed...". No ship could progress through the operational readiness checks required today without a team of personnel onboard committed to achieving and maintaining the highest standards. It is the enthusiasm and contributions off all personnel onboard which predicate the spirit required to take a unit to MLOC or higher.

P.K. Naughton Lieutenant Commander, RAN Defence Centre Perth, W A

(Ed. You missed my point.)

WASHINGTON NOTES

FROM TOM FRIEDMAN In the United States of America

he system of United States service academies - Military at West Point, New York; Naval at Annapolis, Maryland; Coast Guard at New London, Connecticut; Merchant Marine at King's Point, New York; and Air Force at Colorado Springs, Colorado — represents the nation's commitment to provide a core of specially trained officers for the armed services and merchant marine. West Point, established in 1802, was one of the first instances of government intervention into an area where it felt the private sector was not fulfilling a need of the government. President Thomas Jefferson, among others, thought that established colleges (like Harvard, Yale and Princeton) were not furnishing the type of practical education and scientific skills needed not only for the Army but for the commercial and industrial development of the country. While he was unable to secure Congress' consent to the establishment of a national university, President Jefferson did make the case for the need for military engineers in order to protect and develop America's ports and waterways.

New ideas were not as readily accepted by the naval service or its legislative supporters. Although John Paul Jones had suggested the creation of a naval academy in 1777, every one of the 20 attempts to persuade Congress to approve such an establishment between 1800 and 1845 ended in failure. After all, neither Lord Nelson nor any of the American victors of the War of 1812 had attended a naval academy! How could anyone expect brave American seamen to follow the "trifling or effeminate leaders" an academy would produce?

In true American fashion, Secretary of the Navy George Bancroft finally decided to by-pass Congress and establish a naval academy on his own authority. He persuaded the Army to transfer Fort Severn at Annapolis to the Navy, set up a course of study and table of organization and opened the school on October 10,1845.

By 1851, the present four-year course interspersed with summer practice cruises were in place a full half century before the Royal Navy, the world's premier sea power, did the same.

For almost two centuries, the academies have done precisely what their originators hoped they would do: they have provided the core of the officer corps of the United States and, in the process, have become the spiritual home of each service. Today they provide some of the finest educational opportunities in the United States and graduates move into positions of influence in commerce, industry and politics. Their "old boy" networks are among the most effective in the country. The academies are part of the fabric of America and objects of justified pride for the nation.

That pride costs us a lot of money for the few officers the academies produce. According to government statistics, taxpayers spend \$750 million annually to provide only 3000 academy-trained officers. For an education that is estimated to cost anywhere from \$57,000 to \$90,000 per student, it is not unfair for the American public to expect degrees from the academies to be gained honestly and the graduates of those schools to be individuals who exhibit the highest levels of personal integrity.

Unfortunately, this trust is periodically violated by cadets and midshipmen. The most recent occurrence implicated 133 midshipmen at the Naval Academy in the theft of an electrical engineering examination in December, 1992. In March of this year, a Navy Honor Review Board found that 71 midshipmen were guilty of honor violations. Secretary of the Navy John H. Dalton, a Naval Academy graduate, ordered the expulsion of 24 midshipmen and lesser punishments for the others.

In the midst of the pontificating about the cheating scandal (the biggest in the history of the Naval Academy), many have sought elaborate explanations for the simple inability of 71 individuals to differentiate between right and wrong: The disproportionate representation of the Academy's football team in the scandal, the way the investigation was handled, the manner in which the Academy's Honor Code is administered, the general decline of American morals, etc. But in the end, unless he was reared in a moral vacuum, each of those midshipmen knew it was wrong to cheat on that test.

No student who gets through the American educational system, and particularly no student who attains the prestige of admittance into one of the academies, can possibly say that he or she does not know they should not cheat on examinations. While one of the midshipmen pointed to the Whitewater matter(a federal investigation of an Arkansas real estate deal that has involved President and Mrs. Bill Clinton) as an example of "everyone does this stuff," the plain fact is that everyone does not "do this stuff." If "everyone" cheats, why didn't all of the members of the junior

class cheat on the Electrical Engineering 311 exam? No matter how Society had changed, right is still right and wrong is still wrong.

Has the basic moral fiber of the nation really decayed? I don't think so. After all, the largest cheating scandal in the history of West Point took place some four decades ago in the "good old days" when families were solid and people attended church and synagogue. The Air Force Academy has been rocked by several major cheating scandals, each involving scores of cadets, since it opened its doors in 1954. We must be careful not to attribute the errors of a few youngsters to an entire nation.

But this does not mean that morals, concepts of honor and the determination of what is socially acceptable in this country have not changed. Of course they have. And they continue to do so every day. School work that was once done in isolation is now done with classmates. Once this was "cheating." Now it is called "cooperative learning." What hasn't changed is that students remain on their own when it is time to take an examination.

The Naval Academy's Honor Code is simple: "Midshipmen are persons of integrity: They do not lie, cheat or steal." Violation of this clear mandate dishonors the individual and brings disrepute onto the Academy and the Navy.

What the participants in the cheating scandal did is unacceptable on any university campus, let alone at the Naval Academy. Those who were expelled could have also been forced to pay for their educations and serve as enlisted personnel for five years, but Secretary Dalton decided that expulsion was punishment enough. In my opinion, they were let off lightly.

Life at the military academies is strenuous, even harsh. As Vice Admiral Howard B. Thorsen, USCG (Ret.), has pointed out, no civilian educational institution even "comes close to duplicating the conditions of discipline and responsibility that exist at the military academies." And the reason for these conditions is that cadets and midshipmen "enter a profession in which lives — not dollars — will depend on (their) integrity."

Speaking at the Naval Academy's graduation ceremonies on June 2, 1916, President Woodrow Wilson noted that he had, from time to time, been called upon to mitigate disciplinary actions taken against cadets at West Point or midshipmen at Annapolis. As the former president of Princeton University, he knew how mindless college boys could be.

But the President noted the difference between students at the military academies and their civilian counterparts:

'Yes,' President Wilson said he responded to petitioners, 'I know college boys. But while these youngsters are college boys, they are something more. They are officers of the United States. They are not merely college boys. If they were, I would look at their derelictions of duty on their part in another spirit; but any dereliction of duty on the part of a naval officer of the United States may involve the fortunes of the nation and cannot be overlooked.' Do you not see the difference? You cannot indulge yourselves in weaknesses, gentlemen. You cannot forget your duty for a moment, because there might come a time when that weak spot in you could affect you in the midst of a great engagement, and then the whole history of the world might be changed by what you did not do or did wrong.

So the personal feeling I have for you is this: we are all bound together, I for the time being and you permanently, under a special obligation, the most solemn that the mind can conceive. The fortunes of a nation are confided to us ... You do not improve your muscle by doing the easy thing; you improve it by doing the hard thing, and you get your zest by doing a thing that is difficult...

Therefore, I congratulate you that you are going to live your lives under the most stimulating compulsion that any man can feel, the sense, not of private duty merely, but of public duty also. And then if you perform that duty, there is a reward awaiting you which is superior to any other reward in the world. That is the affectionate remembrance of your fellow men — their honor, their affection. No man could wish for more than that or find anything higher than that to strive for — I wish you Godspeed, and remind you that yours is the honor of the United States.'

I think Thomas Jefferson would be delighted by the quantity and quality of the colleges and universities that have been established throughout the United States. Every conceivable educational need of the public and private sectors are served by these institutions. They even produce a far larger number of military officers each year through reserve officer training programs than do the military academies. Because of this, the necessity of maintaining the very expensive system of service academies is questioned even by those in the military.

To justify their continued existence, the military academies must produce officers with an enhanced intellectual, physical and moral ability to make life and death decisions as well as the ability to weigh how their actions, in war and peace, will reflect on the honor of the United States. The honor codes at the academies are at the heart of creating this type of officer. But at the heart of every officer must lie the ability to differentiate between right and wrong.

FROM THE EDITOR

ow the mighty are fallen! Once upon a time this column appeared on page three, but we had to make room for the letter from NZ. However, I don't mind giving up my usual place of exalted honour for a Kiwi cousin, in fact I look at the sacrifice as a form of payment for hospitality I enjoyed on ANZAC exchange in 1990, especially in the fine mess at HMNZS Tamaki.

Now on to business. The following two articles deal with themes of great interest to me and hopefully to you. The first, by RADM Fred Crickard compares the development of Australian and Canadian naval policy and force posture during the Cold War and comes up with some fascinating conclusions. For example, the Admiral puts forward a case that, in spite of changing government policies and significantly different strategic assessments, the navies of Australia and Canada emerged from the Cold War with basically the same force posture they began with forty years earlier. He suggests that the analytical connections between national security policy, defence policy, military strategy, doctrine and force structure are not nearly as neat as the growing gaggle of academic strategists like to think, and he offers an interesting explanation for the persistence of some less tangible force structure determinants that have an often decisive momentum all their own. In a similar vein, Lieutenant Commander Robyn Whitworth presents us with the latest ANI silver medal winning essay, where she looks at enduring aspects of Australia's defence policy between 1965 and 1987. She suggests that historical and political factors in defence are so strong that factors such as geography, population distribution, infrastructure and industrial capacity have been comparatively irrelevant as determinants of Australia's defence strategy! These views are especially interesting as we await the birth of a new and much agonised over White Paper in November.

Commander David Thomas then looks at implementation of the two ocean basing policy and gives some keen insights into problems and prospects in the West. He also comes up with some important considerations, as well as some suggestions for improvement.

In keeping with Council's desire to have more senior sailors/NCOs contribute to the journal we have invited WOII Graham Wilson to tell us all about the US Merchant Marine Academy and what goes on there. Then Lieutenant Commander Murthy of the Indian Navy gives an excellent and up to date insight into factors affecting the Indian Navy and its strategy in



the post cold war era. This is followed by Commander Elliot's enjoyable contribution which tells us about being present at the commissioning of *two* ships called *Newcastle*. Our resident book reviewer, Mike Fogarty, is back with a review of the Australian Dictionary of Biography. So, all in all, another top notch, informative issue of JANI to enjoy.

My apologies must go to Anthony Morris for a mixup with the footnotes to his article in the last issue of this Journal. Many of the footnotes related to legal cases, and in an article of this nature readers quoting or using the wrong precedent can be exposed to some embarrassment. Copies of the original article and its notes can be obtained from me.

Another matter from the last issue that needs tidying up relates to Graham Wilson's query about the date HMAS Geranium actually paid off (Letters to the Editor, May/Jul 1994). Lieutenant Greg Swinden, the author of the article that led to the query (Vol 18, No 4) has checked his sources and informs us that Geranium did not pay of on 23 July 1927, as originally reported, but on 11 November of that year. Many thanks also go to readers Joe Straczek and Rod Howell who rang in to help clarify the situation.

The next issue of JANI includes some fine holiday reading and deals with aspects of regional engagement as it concerns navies: Just what is regional or comprehensive engagement really, and how does a navy translate 'sexy' political jargon and rhetoric into practical, valuable and mutually advantageous cooperation? Is regional/comprehensive engagement

Continued overleaf

'working' and, if so, what exactly is its nature, extent and long term benefit to us? How can 'engagement' be improved? What do the neighbours 'up Top' really think of it; what are the down sides and exactly where do we draw the lines of practical commitment, involvement and expenditure? If you have any thoughts or contributions on these matters call me on 06 2688454.

Finally, the editorial committee hopes to start a 'Nobody Asked Me But...' style column in the next issue. This can provide an opportunity to 'vent one's spleen' on matters various. To protect the guilty, pseudonyms will be accepted as long as true identity and contact address – which will <u>not</u> be published – is provided with the submission. Your contribution may be vulgar, rude, disrespectful and overbearing, but please broach a genuine issue of relevance to the objectives of the Institute (detailed in the inside cover) and attempt to be logical. If you can't be logical at least try to be funny!

AL Hinge

LETTER FROM WELLINGTON (Continued from page 5)

Of course, it is not likely he would approve of better weapons systems to protect against those missiles, let alone worry about who might be firing those missiles!

On the right, the new association of consumers and taxpayers is also becoming a political party. There are suggestions that its defence policy is to be more carefully constructed, with a former very senior officer and an established strategic studies academic leading the policy development. Nonetheless, a party dedi-

cated to small government can be expected to be very critical of defence spending too. Yet it is proven that sound logic does win arguments in the government/ interdepartmental arena. So the strategic plans now in place for the Defence Force, combined with the higher profile from peacekeeping operations, leads to a feeling that Defence is well placed to argue its case in coming years.

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THE 1994 VERNON PARKER ORATION

Australian and Canadian Naval policy and posture during the Cold War

THE LEGACY OF AN IMPERIAL TRADITION

By

RADM F W Crickard, RCN (Ret)

Research Associate, The Centre for Foreign Policy Studies,

Dalhousie University

here is a connection, in how a nation-state re sponds to the need to defend itself, between national security policy, defence policy, military strategy, doctrine, and force posture. Strategy, the blueprint by which policy is implemented, fits in the process. In most western nations it is arrived at empirically over a long period of time and is largely determined by the type and capability of the military power in hand. Warships take a long time to build and are around for a long time after that - up to 30 to 40 years. Moreover, as Admiral Lord Cunningham remarked, "It takes a navy three years to build a ship. It would take 300 years to rebuild a tradition." How then, does naval policy and maritime strategy fit in the process of national security and what influences its nature and quality?

THE MAKING OF NAVAL POLICY: A VIEW THROUGH THE TELESCOPE

There are many ways in which to analyse behaviour and decision making. Foreign policy can be viewed through a number of telescopes. Each can be brought to bear on a different horizon: a view of the nation's leaders acting from rational choice; from the ethic or operational code of the political or military elites; from the bureaucratic accommodation of competing government departments; or as a derivative of the country's place in the international system.² In reality all of these have a part to play. When dealing with defence policy, the principal relationship is between the senior military staff and their political leaders with considerable bureaucratic influence from the civil service and political pressures from legislatures and public interest groups.³

With regard to naval policy, a government can only act with the instruments it has in hand and the fleet that it finds itself with. How that fleet is employed (the strategy) is also largely determined by its capability. That in turn was determined ten or twenty years earlier by the decisions of the government of the day based largely on the recommendations of the naval leadership which set the features of the fleet they thought was needed to meet "the threat".

Dr. Ken Booth describes threat analysis as best understood at two levels; one at the foreign policy level and the other at the level of contingency planning. The higher, or "statesman's" level is political and concerned with behaviour; i.e., the intentions of the other players. The lower or "colonel's" level of analysis is concerned with technical analysis or capabilities.4 In practice, this neat division of viewpoints between political leaders and their military advisors is blurred. In theory, it is the responsibility of political leaders to tell the military what they want the armed forces to do. This is unlikely to happen. Often the military leadership has a better long term understanding of the potential and limitations of military power than the politician. It is a two-way process in which the strategic culture of the senior military leadership exerts a strong influence on the policy decision. Neither group has that much time. As Booth points out: "Academic strategists, unlike their professional counterparts, have the opportunity to think in the longer term and take hold of problems which policy makers hardly have a chance to think about."5

During the Cold War the security dimension of the international system was shaped primarily by East-West ideological and military competition. Now, when a change of the international system is underway, the relevance of the security policies, strategies and military force postures developed, by medium powers like Australia and Canada, to contribute to global and regional security as members of an alliance, is being re-evaluated. This is an important question for powers whose military forces were developed over forty years to fight in an alliance in the worst case contingency of high intensity global war. The Royal Australian Navy (R.A.N.) and Canada's maritime forces

are good examples. Each was shaped to a great degree to fit into or specialise in a broader maritime coalition led by the United States. Although this may be the most efficient way to contribute to an alliance strategy in major conflict, the question that is being addressed by both countries is, what is the best and most affordable policy, strategy and maritime capability to meet national interests at lower levels of conflict, particularly in situations where the assistance of the alliance's senior partners may not be forthcoming? As Rear-Admiral Richard Hill puts it: "If a medium power emphasises its alliance commitment to the extent of saying its forces are a 'contribution' and that only, it is very likely to get a force structure that is not suited to its national needs." 6

It is the argument of this essay, based on a comparative assessment of Australian and Canadian naval policy, maritime strategy and force posture during the Cold War, that operational strategy and to a large extent naval policy itself is driven primarily by the fleetin-being. Moreover, the function of that fleet, namely what it can do, is largely determined by the traditions, values and behaviour, in other words, the strategic perspective of the officer corps. Paradoxically, because both navies were built and trained to fight alongside the United States Navy in a major war, they have also served their national interests well in the diplomatic and policing roles.

Seapower and a Maritime Tradition: The Case of Australia and Canada

The British Empire and the United States entered the Twentieth Century as maritime powers, one on the decline, the other in ascendancy. Australia and Canada were linked politically to the Empire and were protected by the Royal Navy (R.N.). For the first fifty years, Britain and America maintained ocean-going fleets with world-wide reach to ensure access and influence and established alliances to maintain the rough balance of naval power. Australia and Canada used their armed forces as political instruments to achieve independence from the Mother Country as much as to contribute to collective defence.⁷

Because of geography, immense size and vast ocean approaches, both countries developed ocean-going fleets for the sound political purpose of protecting their coastal and offshore interests and the equally sensible military one of contributing to collective defence. These were the "political" justifications for the benefit of their publics and guardians. But the capability of these fleets, whether for offensive operations, the escort of merchant shipping, or coastal defence, originated in the "blue water" tradition and outlook of the naval leadership. The principles of strategy that imbued the naval rearmament and fleet modernisation programmes in Canada and Australia in the 1950s and 1960s were those of historians, scholars and sailors

of the school of Mahan, Corbett, Richmond, Brodie, Marder, Roskill and Morison. Australian and Canadian naval officers were trained in the Royal Navy and later in their own countries along the same lines. The primacy of seapower and the cultivation of "the fighting spirit", initiative and offensive action was the operational ethic that permeated the education of the officers of the United States Navy (U.S.N.), the RN and the "Old Dominions" navies.8 In the Second World War, the RAN fought in the Indian Ocean and alongside the USN in offensive operations in the South West Pacific in the Islands campaign. The Royal Canadian Navy (R.C.N.)came of age in the Battle of the Atlantic, but convoy escort fell largely to the "hostilities only" officers and men of the Royal Canadian Naval Volunteer Reserve (RCNVR).9 The strategic culture of the career RCN officer sought offensive action in destroyer gun fights in the English Channel and elsewhere.

In a corporate sense the naval leadership in the Dominions took for granted that their navies should be maintained to fight alongside the Royal Navy in a cold war. The fall of Singapore in 1942 put the coup de grace on the Australian reliance on the Royal Navy for its forward defence but the USN was there to fill the guardian's shoes. Canada initially shared the burden of the convoy escort in the North Atlantic with the Royal Navy, eventually assuming almost the entire mission. The RCN operated as part of the Royal Navy in the destroyer sweeps in the English Channel, at Normandy and with Coastal Forces in the Channel and Mediterranean. 10 As late as the Korean War (1950 to 1953), the RAN and the RCN were comfortably integrated under the operational control of the Royal Navy in the Yellow Sea or in Task Force 77, under the USN in the Sea of Japan. 11

The United States Navy, the Royal Navy, the Royal Australian Navy, and the Royal Canadian Navy, share a common strategic culture which has affected fundamentally the values and behaviour of their naval leaders. They possess a transnational "operational ethic" transcending national norms. Seafarers generally are a brotherhood, naval men even more so. It is the sailor-scholar or seaman-tactician's view of the horizon, all looking at the same point, that has fashioned the naval forces of these countries and will likely continue to do so.

Three other features of the naval operational ethic are germane to this analysis: conservatism or vested interest in the status quo; the long lead times and lives of naval forces from acquisition to disposal; and the growth of new strategic concepts into doctrine, usually measured in terms of a generation. This is admirably summed up by Richard Hegmann: "Changes in force structure will not occur quickly, however, for reasons that go beyond the simple one of decades long ship lives. More permanent perhaps than the steel of

ships are their institutional souls, and history shows that organisational beliefs are not easily changed."12 Little wonder that there is rarely a precise alignment between the current objectives of foreign policy and the capabilities of a fleet-in-being. It is in the nature of navies in foreign policy that the "statesmen" and "colonels" rarely look at the same point on the horizon. As Dr. Denis Stairs has noted in the context of the Canadian 1971 Defence White Paper: "The evidence suggests that alterations in doctrine tended to follow rather than precede the making of specific decisions regarding the deployment of forces and the procurement of hardware. 13 Although the bane of politicians and even soldiers and airmen, there is good reason for the sailor's creed of "a general purpose fleet-in-being."14

National Security Perspectives and Australian and Canadian Naval Policy During the Cold War

During the Cold War, both countries shared security policy perspectives in which maritime power was salient. They were collective defence, continental defence, strategic deterrence, regional security and maritime sovereignty.

For the first twenty years of the Cold War collective defence, manifested in ANZUS and NATO, was the dominant national security theme in the foreign policies of Australia and Canada. Australia was also concerned with regional security problems in Malaya, Indonesia and Vietnam but faced them collectively alongside the United Kingdom or with the United States in the name of containment. Canada was also involved in the air and naval defence of North America in the context of collective defence and central deterrence. Nevertheless the chief security concern of the four states was communist expansionism and growing Soviet nuclear power. Collective security and strategic deterrence was the agreed response. From the 1950s to the early 1970s, the respective Australian and Canadian security and defence policies lined up. By and large their naval force postures were in harmony too.

In the early post-war years, Australia's defence policy was integrated with Empire defence and subsequently, from 1950, with the United States in the ANZUS pact. Australia's aim was to keep the threat of Communist unrest and expansion distant from its shores. During the Korean War the RAN fought alongside the Royal Navy although Australia's political target was the United States.' ¹⁵ In 1952, the Cold War in the Far East intensified and Australian defence policy became aligned with that of the United States. In Australia's region, Indochina was held to be the key to the defence of South-East Asia and Australia's security. This remained the Australian policy for the next twenty years.

The story of Canada's security policy and defence posture in the 1950s and the 1960s is similar to Australia's. At the foreign policy level, Canada also sought security, through NATO, in an alliance with a major power. Its political motives for fighting in Korea were also similar to Australia's. It too adopted the principle that the defence of Canada was best achieved as far away from its shores as possible. The stationing of troops abroad, in Europe, for the first time in Canada's peacetime history not only made an important defence contribution but provided political leverage within the alliance.

During this period, the RAN, institutionally, was closer to the RN and the USN than its sister services were to their allied counterparts or, for that matter, its own government. The Australian government left the navy to its own devices to the extent that the navy's operational functions could only be deduced. 16 The naval force posture however, although fashioned by tradition and custom on that of the RN, happily coincided with Australia's policy of forward defence and collective security. The RAN was designed to work primarily in conjunction with other, larger navies. Its composition was built around a few large ships as part of an integrated force with the Royal Navy a long way from Australia. Its main task was primarily the protection of shipping to be achieved tactically, by a Carrier Anti-Submarine Warfare (ASW) task group and close escorts. Thus its mission was sea control, as part of a larger allied offensive naval strategy, and its primary task was the defence of shipping against submarine attack in a world war.

At the start of the Cold War, the situation in Canada was similar. In the early 1950s the Canadian government left the decision on the type of navy needed in the hands of the senior naval staff. From the diplomatic perspective, some sort of naval contribution to the NATO alliance was needed but it didn't seem to matter what. The RCN chose to specialise in the protection of shipping in the same way as the RAN; tactical ASW in the Atlantic built around a Carrier ASW task group and close escorts. ¹⁷

In Australia and Canada during the 1950s and the 1960s, naval policy and strategy were determined by the naval leaderships whose outlooks, assumptions and judgements were identical to their brothers in the RN and the USN. The naval strategy of the Dominion navies was Allied strategy, primarily the USN's. The political leadership in Australia and Canada seemed to have very little interest in the matter. As often happens in naval affairs, the tactical and the technical determined the policy. The strategy was someone else's.

In the 1970s and 1980s the international system began to change. The Cold War thawed during Detente in the late 1960s before collapsing in the mid-1970s

due to the Soviet military build-up, the invasion of Afghanistan and assertive Soviet diplomacy in the Middle East, South-West Asia and Africa. The process of de-colonisation was almost complete. A large number of new nation-states in the United Nations sought access and influence, particularly through participation in the Third United Nations Convention on the Law of the Sea from 1971 to 1982.

In the last twenty years of the Cold War, Australian security policy moved towards creating and sustaining a positive security environment in its regions. A rigorous intellectual debate on defence and security policy amongst Australian historians, strategists, economists, political scientists, serving and retired military officers, and foreign policy experts took place in universities and service institutes in the 1970s and 1980s. The importance of economic and other nonmilitary strategies in ensuring stability in its regions was recognised. What has evolved, and is articulated in Senator Gareth Evans statement in 1989 on Australia's regional security, is a "grand strategy" which takes into account military, economic, social, environmental and cultural trends affecting Australia in its regional areas of immediate strategic interest in the Pacific and Indian Oceans. 18 Regional stability has become the dominant national security theme.

Australia's defence policy has changed in step with its security policy. The "Review of Australia's Defence Capabilities" by Mr. Paul Dibb is the culmination of the debate which resulted in the policy information paper on the Defence of Australia in 1987. 19 The concept of "Self-Reliance" is developed into a set of national military objectives and a related strategy, doctrine and force posture for the Australian Defence Force. Priority is given to building a balanced defence force, capable of meeting, independently, credible lower level contingencies in the context of a "defence-in-depth" strategy. The emphasis of the 1987 Australian White Paper is maritime defence: - "By its very nature the defence of Australia and its territories emphasises maritime warfare capabilities. 20 A "two ocean navy" policy is announced and priority placed on control of the sea-air gap in the north.

In the 1970s the Canadian view of the international system underwent a change as well. Although not as fundamental a change as that of Australia's, Prime Minister Trudeau's "Foreign Policy for Canadians" marked a departure from the internationalism of Pearsonian foreign policy. Mr. Trudeau's stamp was distinctly "Canada first". In the 1971 Defence White Paper, the protection of Canadian sovereignty became the first priority of Canadian defence policy, ahead of North American defence, NATO or international peacekeeping.²¹

In Canada's case, however, the defence policy priorities in the early 1970s were not transformed into naval doctrine or force posture. NATO's doctrine of flexible response placed a renewed emphasis on the protection of the sea lines of communication in the Atlantic. With the eclipse of detente in the mid 1970s and the need to encourage European economic links, the 1974 Defence Structure Review resulted in the long overdue but slow naval ship and maritime air replacement and modernisation programmes which continue today. Naval force posture and the new ships and aircraft continued to be shaped to fit NATO's maritime strategy in the traditional Canadian maritime tasks of strategic ASW surveillance and the escort of shipping in the North Atlantic, Collective security returned to centre stage in the beliefs of the Canadian foreign policy establishment.

By the end of the Cold War Australian and Canadian national security perspectives had diverged with each state according a different importance and emphasis on collective defence, continental defence, regional security and strategic deterrence. Maritime sovereignty and the protection of resources and coastal zones has emerged as a security concern that each country has in common since both are the beneficiaries of enormous wealth.

In Australia today, security and defence policies focus on the direct defence of Australia against low level threats and contributing to stable international relations with the states in South-East Asia and the South Pacific. ANZUS remains important but no longer as a collective security commitment. Its value is strategic and operational, tying Australia to the alliance as an integral part of the global strategic warning system and a contributor to the regional balance in the South Pacific and the Indian Ocean. Naval policy is given a relatively high priority in Australia's defence and security (and in public acceptance), given the essentially maritime features of its geopolitical setting. Its strategy is sea control described as "...a complex interdependency of geographical, economic, technical and human factors as well as military capabilities."23 Its operational missions go beyond maritime surveillance. patrol and response to include the protection of shipping and offshore territories and strategic strike.

Canada on the other hand remains in the fold of collective and continental defence tied to central deterrence. Its contribution to regional stability, through United Nations peacekeeping, has more to do with foreign policy objectives than defence or national security. Canada's defence policy continues to be based directly on "two military alliances: NATO and NORAD."24 Today its declared defence priorities are defence, sovereignty and civil responsibilities in Canada, collective defence arrangements through NATO and the continental partnership with the United States, and international peace and security through stability and peacekeeping operations, arms control verification and humanitarian assistance. ²⁵ Continen-

tal defence is described in terms of collective defence while regional security could be anywhere in the world where Canada's collective defence or security interests are perceived to be affected.

Australian and Canadian Maritime Strategies and Naval Force Postures during the Cold War

What is interesting about the two navies today is their similar force postures. Although one is based on twenty years of planning and operations for the direct defence of Australia and the other is a response to NATO's requirement to protect allied shipping in the North Atlantic, both will soon comprise balanced, air, surface and sub-surface components capable of ocean and coastal defence operations. Although Canada's maritime forces do not have or need a strike capability or the same shore support potential as the R.A.N., the operational missions of each fleet are similar; e.g., surveillance, patrol and response. Both are essentially ocean-going "sea control" navies with some "power projection" capability in Australia's case. The case to be made here is that the principal reasons for this similarity, in spite of quite different geopolitical circumstances and national security perspectives, lie in their geography and a common institutional belief in seapower held by their naval leaders.

In the first twenty years of the Cold War the R.A.N. and the R.C.N. were essentially ocean-going navies whose missions were the protection of allied merchant or naval shipping principally against Soviet submarines. Their fleets were based on the aircraft carrier with embarked ASW aircraft or helicopters supported by destroyers, frigates, and supply ships. The R.A.N. acquired its fleet from the R.N. and the R.C.N. constructed its own. In the 1960s the R.C.N. specialised further in offensive ASW against ballistic missile-firing submarines. 26 Coastal defence, minesweeping and Arctic operations virtually disappeared. The R.C.N. became a one tier, one ocean fleet specialising in antisubmarine warfare following NATO or CANUS operational doctrine. The R.A.N., faced with the "wars of diplomacy" in Malaya and Indonesia, expanded its roles in the 1960s to include shore support and coastal defence operations as well as rounding out its ASW capability.²⁷ Significantly aircraft, ships and equipment were acquired from the United States and the R.A.N. adopted U.S.N. warfare doctrine.²⁸

At the mid-point of the Cold War, in the early 1970s, Canada's maritime forces were reaching obsolescence but its missions remained protection of shipping in NATO and area ASW surveillance under Canada-United States (CANUS) defence arrangements. The Australian fleet was relatively new. It was becoming an ocean and coastal navy (a two tier fleet) capable of protecting shipping, shore support and limited strike operations. The leadership in both navies continued

to see their fleets as part of a greater armada alongside the USN and the R.N. preparing for the diminishing eventuality of a global war. Their naval forces were acquired and trained for "worst case" contingencies including major regional conflict with members of the Communist bloc. These expectations were realised by the R.A.N. and the R.C.N. in limited wars and crises alongside the U.S.N. and the R.N. in the first half of the Cold War. The Korean War, the Cuban Missile crisis and Vietnam are examples.

In the late 1960s, both navies fitted Rear-Admiral Hill's cautionary observation about the risk to a medium power of considering its forces as a contribution to an alliance and that only. In Canada, national defence meant collective defence in NATO and NORAD. In Australia national defence was beginning to adjust to the changing geopolitics of its region. For Canada the American alliance was the determining basis for defence. In Australia the alliance was becoming less important but remained an enabling factor. Regardless of diversification of their fleets, both navies shared similar ocean-going force postures highly suited to integrated maritime warfare with the major Western naval powers, particularly the USN.

In the 1970s and the early 1980s, the strategic rationales for fleet replacement and modernisation in the two navies continued along parallel lines. The Canadian maritime forces remained an ocean-going, specialised force for the protection of shipping and area surveillance. The R.A.N. proceeded along the track, started in the 1960s, of an ocean-going and coastal, general-purpose fleet for the protection of shipping, area surveillance, shore support and limited strike missions. Force structure determined the missions and roles, bearing out Denis Stairs' observation that alterations in doctrine tend to follow the deployment of forces and the procurement of hardware.

By the mid-1980s the second post-war naval programmes were underway in both countries. In Canada the Canadian Patrol Frigate and Tribal Class Update and Modernisation Programmes (TRUMP) were approved. Plans were made to replace the OBERON class submarines. The coastal defence mission was restated and minesweeping forces were approved in principle in a new class of maritime coastal defence vessels. Most of these replacement and modernisation programmes were a response to SACLANT's force requirements but they also provided a national capability in the Western Atlantic, the North-East Pacific and Canadian Arctic waters. The TRUMP class restored an area air defence and command and control capability that was lost with HMCS Bonaventure in 1970. The navy re-established the Canadian task group concept in 1986 and with the transfer of HMCS Huron, a TRIBAL class destroyer, to the West Coast in 1987, signalled its return to a two coast operational force for the first time in thirty years.29

The R.A.N.'s second post-war fleet replacement programme was also underway at the time of the 1987 Defence of Australia policy information paper. The Perth class, guided-missile destroyers (DDG) were undergoing extensive modernisation, two additional guided-missile frigates (FFG7) were building in Australian yards, the ANZAC class frigates and the Collins class submarines were approved in principle and the fleet acquired two support ships HMAS Success, an underway replenishment ship, and HMAS Westralia, an oiler, acquired from the United Kingdom's Royal Fleet Auxiliary. In addition, Seahawk helicopters were ordered to replace the Sea Kings. A number of options and prototypes were underway to renew the fleet's mine countermeasures capability. Strategically the R.A.N. moved towards a two ocean fleet with the commissioning of HMAS Stirling near Fremantle, Western Australia in 1978.30

The combat doctrines and operating procedures of the R.A.N. and the Canadian navy became integrated with the U.S.N.'s in the last two decades of the Cold War. Both navies passed the test of interoperability with distinction in the Gulf crisis and war which occurred with the invasion of Kuwait by Iraq on 2 August 1990. The Australian navy, a general purpose force with a capability for power projection and sea control, provided a modern and effective naval instrument in distant operations. The Canadian navy, a surveillance and anti-submarine warfare force, provided older warships, augmented with modern air defence and communications and control equipment, much of it earmarked for the new Canadian Patrol Frigates. Its contribution was more effective than Australia's in terms of alliance diplomacy, because it stayed together as a task group under Canadian operational command.

Two deductions may be drawn from this analysis of the naval policies, maritime strategies, and force postures of the two navies during the Cold War. The first is that building and maintaining a balanced, oceangoing fleet takes decades, during which time a country's national security priorities may change. The second is that a navy built primarily to meet the needs of an alliance can also meet its country's national needs.

Australia's geopolitical situation during the Cold War was continually changing, quite unlike the Canadian experience which was locked in the middle of the East-West central balance and at the apex of tension in Western Europe. Australia's defence policy moved from collective defence to self-reliance and continental defence while Canada's remained collective. Nevertheless the R.A.N. and Canada's maritime forces were developed to integrate efficiently with the superior navies of the major powers in advanced maritime warfare. At the beginning of the Cold War the R.A.N. and the R.C.N. operated mostly with the R.N. in Korea. In the middle of the period each integrated their operations with the U.S.N. in the Cuban missile crisis

and Vietnam. At its end each navy fell in with the U.S.N. in the Arabian Gulf.

Their navies are not so much the product of rational political choice and a subsequent matching strategy and force posture, as the consequence of institutional beliefs in seapower held by the naval leadership. The type of navy that Australia and Canada developed and maintained is the outcome of an officer class educated and trained in the anglo-american maritime tradition of naval mastery; i.e., an ocean-going fleet capable of fighting alongside the U.S.N. in a major war. Given the fundamental importance of the American alliance to their security during the Cold War this was a good thing.

Although both countries have different defence and security policies today, geography has also determined the composition of their fleets which are remarkably similar. Because of the size and reach of their coastal zones and oceanic approaches, both navies have sought to acquire maritime forces capable of establishing, in Admiral Eberle's words, "...control over one's own backyard" and the necessary seapower to provide, in those of Sir James Cable's, "...a plausible capability to employ force at sea for purposes regarded as nationally important." 32

Has Australia taken note of Admiral Hill's cautionary dictum about medium powers and the naval contribution to their alliances and has Canada ignored it? To be sure, Australia's force structure for the 1990s is designed for the defence of Australia while Canada's was produced primarily to fit NATO's maritime strategy. Nevertheless Canada's maritime forces also meet the national need to protect its offshore estate while sharing, with the United State, in the seaward defence of the continent. Abroad, both navies are important diplomatic instruments of their country's foreign policy. Yet, ultimately, both have quite deliberately been built, educated and trained to fight alongside the U.S.N. and other naval powers in major conflicts on the world's seas.

CONCLUSION

In spite of changing government policies and significantly different strategic assessments, the navies of Australia and Canada emerged from the Cold War with the same force posture that they began with forty years earlier. Both are similar to each other. They are both small, ocean-going, balanced naval fleets, completely interoperable with the U.S.N. and built to fight in naval armadas in major wars. At the beginning of the Cold War the model for their navies was the R.N. By the end it was the U.S.N. The R.A.N. and Canada's maritime forces have been built and maintained to fight alongside the principal naval powers in a major war. They are "alliance" navies. Rather than this being a liability, the two fleets have served their national

interests well in both the diplomatic and policing roles.

By the beginning of the Twenty-First Century, the R.A.N. and the Canadian navy will be as close to being fleet units of the U.S.N. as the Admiralty wished the new Dominion navies to be at the beginning of the Twentieth. Although the international system has changed profoundly in the last one hundred years, and today Canada and Australia are independent medium maritime powers, their navies' lineage and outlook are in the Imperial tradition of global seapower. Lord Jellicoe would approve.³³

- 1 Ken Booth Navies and Foreign Policy (London, Croom Helm, 1977) p59
- 2 Denis Stairs The Diplomacy of Restraint (Toronto, University of Toronto Press, 1974) p297, Ch 9
- 3 D W Middlemiss, J J Sokolsky, Canadian Defence, Decisions and Determinants (Toronto: Harcourt, Brace Jovanovich, 1989)
- 4 Ken Booth Strategy and Ethnocentralism (London: Croom Helm, 1979) p 128
- 5 Ibid. p181
- 6 J R Hill, Maritime Strategy for Medium Powers (London, Croom Helm, 1986) pp198-199
- 7 See Nicholas Mansergh, The Commonwealth Experience (Nerw York: Praeger Publisher, 1969) p148; Richard A Preston, Canada and Imperial Defence (Durham N C, Duke University Press, 1967) pp430-431; G L Macandie, Genesis of the Royal Australian Navy (Sydney, A E Pettifer, Government Pronter, 1949) p272; Roger Sarty, "The orogin of the Royal Canadian Navy, the Australian Connection", T.R. Frame, J.V.P. Goldrick, P.D. Jones, Reflections on the Royal Australian Navy, Kenthurst N.S.W.: Kangaroo Press, 1991, pp 98-99.
- 8 The phrase is borrowed from Dr. Thomas-Durrell Young, "The 'Old Dominions' and their Policies of Defense Independence: Implications for Allied and United States Security", paper presented at the Annual Conference of the International Studies Association, Strategic Studies Institute, United States Army War College, Carlisle Barracks, PA, 11-12 November 1988.
- 9 James B. Lamb, *The Corvette Navy* Scarborough, Ontario: New American Library of Canada Limited, 1977, pp 6-18.
- 10 Joseph Schull, The Far Distant Ships Ottawa: Kings Printer, 1950.
- 11 T. Thorgrimmson and E.C. Russell, Canadian Naval Opera tions in Korean Waters, 1950-55 Ottawa: Queen's Printer, 1965, p 145.
- 12 Richard Hegmann, "Reconsidering the Evolution of the U.S. Maritime Strategy, 1955-1965", The journal of Strategic Studies, Vol. 14, Number 3 September 1991, p 324.
- 13 Denis Stairs, "The Military as an Instrument of Canadian Foreign Policy", *The Canadian Military: A Profile*, Hector Massey, ed. Toronto: The Copp Clark Publishing Company, 1972, p 111.
- 14 Geoffrey Till, "...constant failure to get current longterm political direction encourages the military planner to produce unspecified and general purpose forces ... the sailor's ... almost mystical faith in the capacity of a first-rate balanced fleet to cope with virtually anything, can be distinctly irritating to the unsympathetic." Naval Historical Conference on Richmond and Corbett (Naval War College, Newport, Rhode Island; September/October 1992).

- 15 Robert O'Neill, Australia in the Korean War, 1950-53, Volume 1, Strategy and Diplomacy Canberra: Australian Government Publishing Service, 1981, pp 405-406.
- 16 T.B. Millar, "The Australian Naval Situation", Proceedings, June 1972 Annapolis, USN Institute Press, p 210.
- 17 G.M. Dillon, Canadian Naval Policy Since World War II A Decision-Making Analysis, Halifax, N.S. Centre for Foreign Policy Studies, Dalhousie University, Occasional Paper No. 2, October 1972, p 53.
- 18 Gareth Evans, Australia's Regional Security, Ministerial Statement Canberra: Minister for Foreign Affairs and Trade, December 1989.
- 19 Department of Defence, The Defence of Australia Australian Government Publishing Service, Canberra, 1987.
- 20 W.S.G. Bateman, "Towards An Australian Maritime Defence Strategy", Australia's Navy. 1990-91 Canberra, Department of Defence, Australian Government Publishing Service. 1990, p 9.
- 21 National Defence, Defence in the 70s Ottawa: Director of
- Supply and Services, 1971, p 16.
- 22 J.J. Sokolsky, A Question of Balance: Canada and the Cold War at Sea 1945-1968, Centre for International Relations Occasional Paper No. 21 Kingston: Queen's University, 1987, p 36.
- 23 W.S.G. Bateman and R.J. Sherwood, Principles of Australian maritime Operations, Working Paper No. 265, Strategic and DefenceStudies Centre Canberra: Australian National University, November 1992.
- 24 Vice-Admiral P.W. Cairns, Foreword to The Maritime Command Vision
- 4 June 1993, p ii.
- 25 Marcel Masse, Minister of National Defence, Statements on Defence Policy Ottawa: September 17, 1991, p 3.
- 26 Department of National Defence, Defence 59 Ottawa: Queen's Printer.
- 27 Jeffrey Grey, A Military History of Australia Cambridge: Cambridge University Press, 1990.
- 28 T.B. Millar, Australia's Defence Carlton, Victoria: Melbourne University Press, Second Edition, 1969, p 124.
- 29 F.W. Crickard, "The Canadian Navy New Directions", Naval Forces Nov 1987, Vol. VIII, p 86
- 30 Defence of Australia, Op. Cit., 43 to 47.
- 31 James Cable, Britain's Naval Future London: The MacMillan Press 1983 p 43
- 32 James Cable, *Diplomacy at Sea* Annapolis: Naval Institute Press, 1985, p 39.
- 33 Viscount Jellicoe of Scapa, Naval Mission to the Dominion of Canada November-December 1919, pp 11, 13. In his report Admiral Jellicoe suggested two naval options for Canada: one for "Canada's own requirement and Canada's own safety" and the second, a more powerful "fleet-unit", should Canada decide "to cooperate in the general naval needs of the empire".

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PARADIGMS AND POLICY: ENDURING ASPECTS OF AUSTRALIA'S DEFENCE POLICY 1965 - 1987

BY

LIEUTENANT COMMANDER R.A. WHITWORTH, RAN

'National interests and national security may not mean the same thing to different people. They may not have any precise meaning at all. Thus, while appearing to offer guidance and a basis for broad consensus they may be permitting everyone to label whatever policy he favours with an attractive and possibly deceptive name.'

s early as Federation in 1901, most Austral ians were cognisant of the fact that they were well favoured by the nation's natural living space and resources, but the isolation caused by geography fostered feelings of vulnerability. Threats to national security and national interests provided the basis for defence policy. The population believed what they were told of the formidable capabilities of actual and potential enemies. Globally, the use of force to better a nation's circumstances at the expense of another was seen as justifiable in pursuit of national interests and national security.

Australians were also aware of the paucity of defence resources and the requirement to depend on Britain for protection. Defence issues were the chief element of Australia's external policies from 1901 to 1945. The concept of forward defence, strengthened during this period with commitments of Australian forces to fight in distant war theatres, was essentially unquestioned until the Vietnam era. In addition, existing alliances were honoured and new alliances were forged during this era in pursuit of national security.

Defence policy decisions since Federation have been dominated by the concept of threat perception. The source, nature and intensity of the threats have provided the foundation upon which defence policy decisions with respect to national interests and national security are made. ^{2 3} When these threat perceptions are clearly identifiable and readily accepted the task is relatively easy. However, when the threat is less well defined, policy formulas may lack precise definitive elements and the concept of national interests and security may not have universal meaning. While appearing to offer guidance and provide the framework for broad consensus, they may in fact allow the application of labels which although attractive, are deceptive.

The era of forward defence appears to have been replaced. Contemporary writers on defence policy highlight enduring features in our strategic environment4 as the factors that underpin current defence policy and its distinctly maritime flavour.4 That policy is characterised by the concepts of defence-in-depth and selfreliance within a framework of collective security and alliances. However, closer examination of these concepts reveal that they appear to disguise the concept of forward defence in terms more befitting Australia's position in the region. In addition, these concepts are not new. Although some of their elements may have changed over the years, primarily in response to changes in our strategic environment and threat perceptions, they combine to provide enduring aspects of defence policy formation.

This essay contends that contemporary Australian defence policy has retained a forward posture. Initially, defence policy between World War II and 1965 will be examined. In the following two sections, key elements of defence policy from 1965 to 1987 will be examined to illustrate that, despite the popular rhetoric of defence-in-depth and self-reliance, little has changed in terms of our defence posture.

DEFENCE POLICY WORLD WAR II - 1965

'The Government's defence policy provides for defence against both invasion and raids. As raids are the most probable form of attack, the completion of the defence against this contingency is the immediate objective of policy. The new defence programme will provide adequate defence against raids and, at the same time, will afford a deterrent to and a substantial measure of defence against invasion.'5

So wrote H.V.C. Thorby, acting Minister for Defence in 1938. Until the end of the Second World War, Australia's defence policy was predicated on three types of threat consisiting of:

- a. subjugation by the Japanese and, to a lesser degree, the Chinese;
- raids by distant naval powers including the Russians, Japanese and Germans; and
- the indirect threat of a balance of power shift following a defeat of Britain by Germany.

Australia relied primarily on Britain, particularly the forces at the British naval base in Singapore, for her security. The fundamental assumption was that Australia needed the assistance of a major power to ensure the security of her national interests because the nation's limited resources were insufficient to provide an effective independent defence. The threats to Australia reflected classic strategic thought: The destruction of its seaborne commerce, the operations of conventional land forces, and the battle to win command of the air. With the outbreak of World War II, Prime Minister Menzies committed Australia to war in the same context as Mr Fisher had in the First World War. The inextricable link between the security of Britain and that of Australia provided acceptable justification for such a commitment.6 The posture of forward defence forged in the pre World War II years was again reinforced.

Forward defence has no precise, unequivocal definition. R.G. Menzies, in writing of defence and foreign policy from 1942 to 1970, provided a distillation of the key elements of forward defence:

'...to keep any war as far away as possible from our shore; to provide Australian defence in depth; and to provide a secure environment for our neighbours, with whom we are bound to have a close relation as the years go by.'7

Under the umbrella of this concept of forward defence, defence policy was inclusive of collective responsibility for defence, stability and development in the region. Defence-in depth, like forward defence lacks any clear definition. However, it is characterised by the notions of detecting and countering any threat to Australia as far away form our shores as is practical.

Collective responsibility for defence, stability and development can be equated with the notion of collective security. This involves an array of military and non-military relationships that combine to create and maintain a favourable strategic and security environment for Australia. For the purposes of this essay, the emphasis is on the military relationships. The concept of collective security is closely related to that of alliances.

The Macquarie Concise Dictionary defines alliances as 'formal agreement by two or more nations to cooperate for specific purposes'. Australian alliances include both treaties and less formal agreements. The most significant of our alliances for the purposes of this essay are the ANZUS Treaty, South East Asian Treaty Organisation (SEATO), and the Five power Defence Agreement (FPDA), although others may be alluded to in the course of the discussion.

Although the alliance with Britain was strong, by 1942 when Australia came under direct attack from Japan, the defence policies of the two partners began to differ. British strategic priorities had to be focussed on Europe, while Australia – adversely affected by the elimination of British forces in Singapore – had accorded the "Near North" and the Pacific the highest priority. Australia was also forced to seek an alternative partner for her defence: the US.

In the period following World War II, Australian forces were deployed to a number of overseas theatres under the protective mantle of either Britain or the US. Although distant from our shores, these forces provided a measure of security for Australia. They were perceived to be involved in halting the spread of international communism. China had replaced Japan as a possible subjugator and the threat of naval raids essentially disappeared in light of America's naval supremacy. In addition, the US and USSR replaced Britain and Germany as the chief determinants of global strategic balance. Although they appeared less likely to go to war with each other than their predecessors, few Australians were convinced of this because of the development of nuclear weapons and the horrifying experiences of World War II. This scepticism was reinforced by conservative governments following 1949 who repeatedly expressed concern about the Soviet capacity to menace Australia's region.

During the period from 1950 to 1965, the emergence of hostile regional powers created a new threat dimension for Australia. Although lacking the capacity to subjugate Australia, her national interests and security could be damaged in two ways; by communist subversion of South East Asian regimes, and the expansionist form of nationalism which facilitated the diversion of public attention to perceived grievances within the region. The Korean War in 1949, the Indonesian confrontation of Malaysia in 1964, and the Vietnam war saw the commitment of Australian forces to meet a "distant" threat in association with major allies. The strategic assumption was much the same as that of the two World Wars but these wars were within the immediate region rather than in Europe or the Middle East. In addition, they were wars of insurgency and subversion in which the perceived threat was not to Australia's commerce or sovereignty. Rather, the strategic environment itself was under threat in the sense of having potentially hostile or unstable near neighbours.

The US had become Australia's major ally as a consequence of both the Second World War – the ANZUS Treaty was signed in September 1951 and ratified in April 1952 – and the British withdrawal of its commitments East of Suez in the early 1960s. In 1954, the South-East Asia Collective Defence Treaty (Manila Treaty) was signed and was later to become known as the SEATO. ¹⁰ This represented a collective approach to the security of the region (and thus Australia); the aim being to ensure that any threat from China or Indo-China was contained within the Asian mainland.

AUSTRALIAN DEFENCE POLICY 1965-1976

In February 1965 Australia deployed troops to Borneo. Although not a large contingent, the deployment of forces to mount military operations against Indonesian forces further reflected the collective security arrangements in the Southeast Asian sphere. The confrontation ended later that year upon the death of President Sukarno. In 1967 Britain announced her intention to withdraw half of her forces from Malaysia and Singapore by mid 1971, with the remainder to follow by the mid-70s. This announcement caused considerable concern about the future of Australian forces in those countries. Malaysia and Singapore welcomed the decision in 1969 to retain Australia's forces there along with those of New Zealand.

In the following year, the Five Power Defence Arrangement (FPDA) was negotiated replacing the Anglo-Malayan Defence Arrangement. This new arrangement established an integrated air defence system for Malaysia and Singapore. Australia stationed a battalion group in Singapore and two squadrons of Mirage fighters in Malaysia, with naval vessels on rotating deployments in nearby waters.

Soon after, the character of regional order began to change. The British withdrawal from the region, the improved relationship with Indonesia following the death of Sukarno, and the improved military capabilities of Malaysia and Singapore cast doubts on the future of Australia's commitments under the FPDA. The Guam Doctrine of 1969 stressed to regional states that they would, henceforth, need to assume primary responsibility for their own security. Australia ended its military commitments to Vietnam and by 1972 all combat and base units had been withdrawn. It appeared that the era of forward defence was no longer credible or appropriate.

The 1972 Defence White Paper stated that Australia 'should not allow its expectation of external support for its defence to overshadow its obligation to assume, within the limits of its resources, the primary responsibility for its own conventional defence and to accept an even greater share - if not the entire burden –

in circumstances of lesser challenge." 11 The concept of self-reliance emerged.

Self-reliance does not equate with self sufficiency. In Australia's case, the alliance with the US is an integral component of our self-reliance. 'Self-reliance means defence-in-depth'. The primary focus of self-reliance is for Australia to develop its capacity to mount and sustain, predominantly within our national capacities, forces capable of meeting '...any credible level of threat in Australia's area of direct military interest. Australia's area of direct military interest encompasses, but is not confined to, 'Australia, its territories and proximate ocean areas, Indonesia, Papua New Guinea, New Zealand and other nearby countries of the South-West Pacific.' 14

Australia's defence interests at the time were identified in terms of the security of our South East Asian and South West Pacific neighbours, and the sea lines of communication running through those areas. As such, no great changes to the force structure were recommended with the exception that our maritime capabilities were to be upgraded. The archipelagic nature of the region and, more particularly, the extent of our maritime approaches were the key determinants of the significance of our external environment:

'The best defence of Australia's interests goes beyond the defence of Australian territory alone. It calls for the military capability, evident to other countries, to project Australian strength beyond the continental boundaries...drawing on increasingly self-reliant military strength, we continue to recognise and support the security interests which we share with those who are part of our special strategic environment.' 15

The government instituted a number of studies into how the defence forces should be structured to meet the changing priorities. The most significant of these, the Defence of Australia studies, were to determine the possible situations that may require military intervention and recommend appropriate concepts and capabilities for dealing with such eventualities. Essentially these studies were threat assessements. However, unlike the threat perceptions of the previous decades, these latest attempts proved to be less precise in terms of identifying the source, nature and intensity of the threats because of their diverse and complex nature. 16 This dilemma is perhaps best illustrated by the fact that the Government declared that Australia was unlikely to face any major threat for fifteen years. This statement confounded many since the same Government was still determining how best to defend Australia.

The assessments suggested that we did not have the capability to defeat any major power determined to invade Australia through the archipelago to our north. On the other hand, we could deter less determined

potential adversaries by having the evident capacity to inflict several major defeats on their advancing forces and/or commit adversaries to a disproportionate response. This was to be achieved by relocating forces within Australia to enable them to be deployed when an adversary first enters or seeks to establish a forward base in the archipelago.

Priority would be given to acquiring sophisticated long-range area surveillance systems for detection purposes; and 'suitable' interdiction and counter-offensive capabilities involving a mixture of highly mobile offensive ground, air and naval force elements. In addition, these forces were to be concentrated in the north of Australia - within striking distance of the most forward-landing areas available to potential adversaries. Support for these forces and the defence of the bases was also a priority consideration. Much was made of this perceived change in posture. It was heralded as the end of the forward defence era.17 The reality, however, was somewhat different. The "forward deployed" forces concept had simply been replaced by a notion of "readily deployable forward" forces.18

DEFENCE POLICY 1976-1987

In November 1976, another Defence White Paper, commissioned by the Whitlam government, was released by the Minister for Defence in the Fraser government. Hugh Smith summarised the continuity in the policy processes when he wrote: 'The change of government at the end of 1975 might have been expected to bring in its wake marked changes in Australia's view of the world. In the event the new administration found little difficulty in adapting and adopting the defence and foreign policies which it inherited.' 19

The new government augmented the existing themes devised by its predecessors by planning to increase the defence infrastructure in the north and west of the country. This included the expansion of HMAS Stirling at Cockburn Sound, construction of patrol boat bases at Cairns and Darwin, and the extension of the airfields at Amberley and Learmouth. Concurrently, policies were devised for increasing the participation of local industry in Australia's equipment procurement programs either directly or through encouraging overseas suppliers to sub-contract to more local firms.

In 1979, the communist threat re-emerged. The Soviet Union invaded Afghanistan with the significant implications for Australia that this situation could:

- a. provoke a war between India and Pakistan;
- b. threaten the security of ASEAN countries;
- c. create mass movement of refugees between the borders of Thailand and Kampuchea; and/or
- d. if China responded to the invasion, the Soviet Union could attempt to augment its strategic pos-

ture in the West Pacific in areas directly affecting Australia's security.²⁰

In response to the threat, Australian military forces were deployed in support of American forces. While the government declined to send forces to augment the Rapid Deployment Force in the Persian Gulf at the request of the US, it offered the US use of our facilities in support of their operations. The ADF was tasked with conducting more frequent maritime deployments in the Indian Ocean and expanding airborne surveillance of our ocean approaches. In addition, the government lent strong support to the development of a US naval base at Diego Garcia.

In 1982, Australian military personnel participated in the multinational peacekeeping operations in the Sinai Desert. Later that year, under the auspices of the FPDA, a detachment of maritime patrol craft was deployed to Butterworth to conduct surveillance operations in the Indian Ocean and South China Sea ,and multinational exercises resumed. Concurrently, a team of Australian and New Zealand officers was sent to the South Pacific to evaluate the surveillance capabilities and requirements of the Island States. The notion of defence-in-depth, under an umbrella of collective security and alliances, had again provided the rationale for forward deployment of Australian forces.

When the Hawke Government came to power in 1983, it appeared to be working towards the development of a more focused defence posture. In 1985 the Dibb Review was commissioned by the Minister for Defence, with many of Dibb's recommendations incorporated into the 1987 Defence White Paper. 21 Threats to Australia were identified in terms of the possible levels of conflict that may be encountered; 'low level', 'escalated low level', and 'more substantial'. This contrasted markedly with the previous White Paper which alluded loosely to threat in the context of uncertainties in the global and regional spheres. Judgements about possible responses to the low level conflicts included the need for the ADF to be able to mount significant maritime surveillance, interdiction, and possibly offensive strike against an adversary's maritime and land targets.²² In pursuit of these activities, the White Paper noted significant acquisitions (some already approved) including an additional six to eight major surface combatants, six new submarines, Over the Horizon Radar (OTHR), modern sensors for the P3Cs, the upgrade of the F-111 fleet, and the introduction into service of the FA-18 Hornets. Given the resultant capabilities, and Australia's extensive maritime boundaries and offshore territories, proposed operations could only be described as forward.

Significantly, the White Paper disagreed with Dibb on the relevance of the FPDA and Australia's continuing deployment of air and ground (albeit limited) forces in Malaysia.²³ ²⁴ The existing commitment was to be enhanced to include:

- a. the deployment of FA-18s and F-111s on a rotational basis for at least 16 weeks each year,
- the maintenance of rotational deployments of P3C LRMP aircraft, and
- a substantial increase in Australia's naval presence in the region by providing a continuous presence of major force combatants on operational deployments.²⁵

Policy decisions were not confined to the South East Asian region. Events in the South Pacific in the mid eighties caused some consternation for the Australian Government. ²⁶ Its response included an increase in the number of regional long range maritime surveillance patrols, and extended patrol boat visits supplemented by an increase in the number of visits by more substantial Fleet Units.

The coup in Fiji in May 1987 sparked the deployment of an RAN Task Force (with a rifle company embarked). Australia and the countries of the South Pacific (and South East Asia) were perceived as sharing concerns regarding the need to strengthen regional stability, and limit situations that would create tension or conflict. The White paper described Australia's involvement capacity in the following terms:

Australia is a major power in the South-West Pacific. We have the capability now to deploy significant forces there. The current substantial capacity of Australian forces...will be further enhanced by the Government's decision to increase our naval and air deployments to the region...In the event of a regional conflict, the forces we are developing for our own defence would have direct utility in the South-West Pacific.²⁷

Australia's willingness to use military force to intervene in the affairs of South Pacific nations was exercised again the following year in Vanuatu. In addition, in 1989 the Foreign Minister issued a statement on Australia's Regional Security in which he stated that Australia was prepared to use its military forces in the South Pacific in pursuit of security interests not immediately affecting the defence of our national territory.²⁸

The forward deployment of Australian forces continued during the period 1976-1987, despite the rhetoric of the strategy of defence-in-depth and self-reliance.

Also, the Australian Governments' sense of responsibility for providing a significant contribution to regional security through alliances and collective security arrangements provided the justification for such actions.

CONCLUSION

Australia's forward defence posture, forged prior to World War II, was strengthened in the 1950s and 1960s. Prime Minister Menzies identified the concept of defence-in-depth as an integral component of Australia's defence strategy. Keeping any war as far away from Australia's shores as possible was foremost in successive Governments' defence policy formulation.

The defence of Australia was prosecuted under an umbrella of alliances and collective security. At the time, this was necessary because of Australia's limited resource base which precluded any capability for independent, effective defence. The assistance of our "great and powerful friends" was essential in controlling Australia's strategic environment in pursuit of our national interests and security.

The changing nature of our regional strategic environment during the late '60s could have provided the rationale for abandoning the forward defence posture. Rather, deployment of forces within and outside our region continued through the '70s and into the '80s. Some deployments were either a continuation or expansion of existing arrangements, while others were in response to predominantly military activities perceived to have potentially adverse consequences for Australia's, or the region's, security.

During the same period, our military capabilities were expanded significantly. The approved acquisition of additional major surface combatants, new submarines, and the upgrade of maritime surveillance, strike, and interdiction capabilities increased Australia's ORBAT potency. These acquisitions were complemented by the construction of new support facilities, and the expansion of existing facilities, in the north and west of the continent.

Successive defence policies since 1965 have illustrated Australia's determination to control our surrounding strategic environment. This control is achieved by a strategy of defence-in-depth; detecting and, if necessary, engaging prospective adversaries well forward of the Australian mainland. For these purposes, we retain considerable maritime surveillance forces, and the capability to strike at an adversary's forward bases or homeland. In addition, forces have been deployed into and outside the region under the auspices of either collective security or alliance commitments to protect national interests and security. While the nature of the deployments that have occurred since 1965 may have differed from those of the pre- Vietnam era, the sentiment which stimulated their occurrence reflect the paradigms that remain in our defence policy. Australia has retained a forward defence posture.

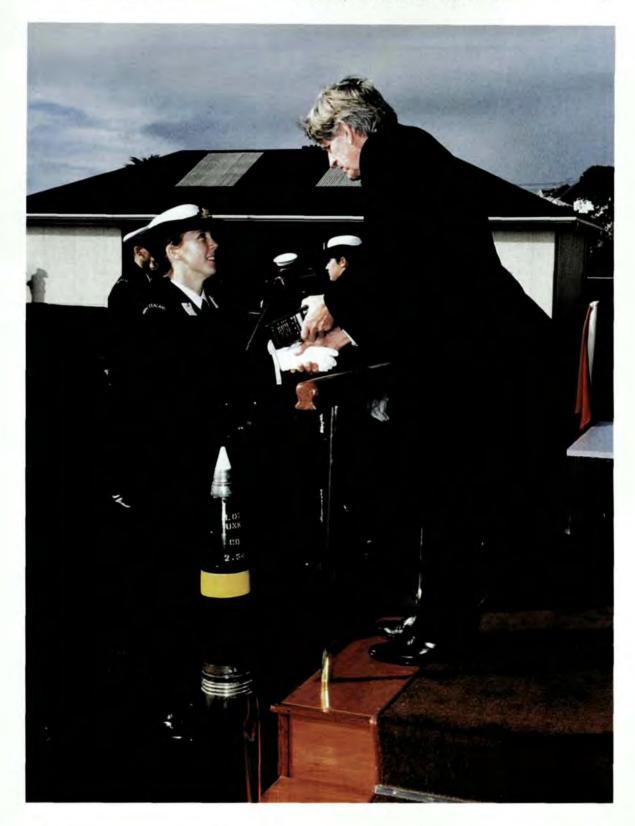
ABOUT THE AUTHOR. Lieutenant Commander Robyn Whitworth joined the RAN as a Nursing Officer in 1985. In 1988, following a transfer of Branch to Instructor, she completed numerous postings at HMAS CERBERUS. In January 1992 Robyn received an Australia Day Council Medallion for her contribution to RAN training and was posted to the Naval

Training Command as the Quality Control Course Officer and Training Consultant. In that capacity, Robyn's contribution to training was again recognised with the award of a Naval Training Commander's Commendation in November 1993. She completed the RAN Staff Course in June 1994 and is completing postgraduate Defence Studies.

- letter.

- Wolfers A. 'National Security As An Ambiguous Symbol'. Political Science Quarterly. (Vol LXVII, No 4.), December 1952, p 481.
- 2 Wood C. Australian Defence Planning 1942-72. in McCarthy J. (Ed) <u>Dependency?: Essays in the History of Australian Defence and Foreign Policy.</u> Defence Studies <u>Publication No. 1. University Col-</u> lege, University of New SouthWales, ADFA, p 98.
- Strategic Review 1993. Department of Defence, Canberra, p 39.
- The most frequently noted factors include geography, population size and distribution, infrastructure, industrial capacity and resource distribution.
- 5 H.V.C. Thorby, acting Minister for Defence in Dibb P. <u>Review of Australia's Defence</u> Capabilities. AGPS, Canberra, 1986, p174.
- 6 Babbage R. Australian Foreign Policy: The Security Objectives. in Mediansky F. and Palfreeman A. (Eds) In Pursuit of National Interests. Pergamon Press, Sydney, p 107-109.
- 7 Menzies R. The Measure of the Years. London, 1970, p 77.
- 8 ibid. p 44.
- Australia. Defence of Australia 1987. AGPS, 1987, p
 31.
- 10 The parties to the Treaty were: Australia, France, New Zealand, Pakistan, the Philippines, Thailand. The United States, and The United Kingdom.
- 11 Department of Defence. Australian Defence Review. AGPS, Canberra, 1972, p 14.
- 12 Australia, 1987, op.cit. p vii.
- 13 ibid, p 23.

- 14 ibid. p 2
- 15 Department of Defence, 1972, op.cit. p 2
- 116 Bell C. (ed) Agenda for the Eighties. ANU Press, Canberra, 1980, pp 47-49
- 17 ibid.
- 18 Wood C. op. cit. pp 98-115.
- 19 Smith H. Defence Policy. in P.J. Boyce and J.R. Angel (eds), Independence and Alliance: Australia in World Affairs. 1976-1980, Sydney, 1983, p 42.
- 20 Australian Defence. White Paper Presented to Parliament by the Minister for Defence, the Hon D.J. Killen, AGPS, Canberra, 1976, pp 3-5.
- Dibb P. Review of Australia's Defence Capabilities. AGPS, Canberra, 1986.
- 22 The Defence of Australia 1987' Presented to Parliament by the Minister for Defence the Honourable Kim C. Beazley, M.P. AGPS, Canberra, 1987, p 25.
- 23 Dibb. op.cit. p 48.
- 24 'The Defence of Australia 1987'. op.cit., p 7.
- 25 House of Representatives. Hansard. 23 February 1988, pp 499-506.
- 26 Vanuatu adopted a non-aligned posture following its decolonisation, Kiribati and Vanuatu signed fishing agreements with the Soviet Union, and evidence existed of Libyan involvement in the Kanak independence movement in New Caledonia.
- 27 'The Defence of Australia 1987'. op.cit., p 6.
- 28 Australia's Regional Security. Ministerial Statement by Senator the Hon, Gareth Evans QC, Minister for Foreign Affairs and Trade, December 1989.

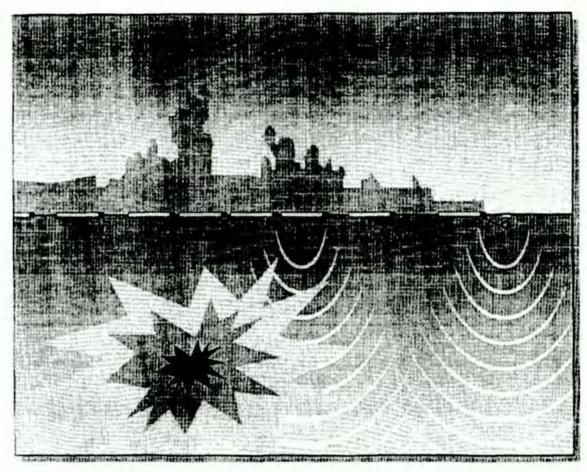


Midshipman Sandra Green, Royal New Zealand Navy, receiving the New Zealand Chapter of the Australian Naval Institute Prize from the New Zealand Minister of Defence, the Honourable Warren Cooper.

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Midshipman Green joined the Royal New Zealand Navy in January 1994 in the General List Executive, Hydrographic specialisation and after completing her first professional course can expect to be posted to sea in early 1995. She is 19 years of age.

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THE EFFECTS OF TWO-OCEAN BASING

BY CMDR D. R THOMAS RAN

n the 1987 Defence White Paper the government enunciated the Two Ocean Basing (TOB) Policy which sought to homeport up to half the fleet at Fleet Base West (FBW). The measure of the implementation of this policy is seen by many through the homeporting of ships and the development of facilities at HMAS *Stirling*. However, TOB is much more than this. It has implications both in the Navy and the wider defence community. This article seeks to provide an insight into the implementation of the TOB policy and its effects.

The Past

Historically, Navy culture has been centred around an east coast fleet with personnel having a fair likelihood of being able to spend the majority of their seagoing career east of the Great Divide. Ships worked up and maintained their standards primarily from their homeport in the East Australian Exercise Area (EAXA) and resources and defence assets were provided with that end in mind. Fleet publications also focused on the operation of a Fleet based in Sydney, although there were small elements of Navy in the outports of Cairns, Darwin and Fremantle, with the local commander exercising control of various areas.

Announced seven years ago, the TOB policy is about half way towards its maturity. The west currently boasts 11 homeported units including two FFGs, the Navy's Destroyer Escorts, a tanker, a survey ship, two patrol boats, a trials ship and a submarine. The build up of shore infrastructure in support of these and other units is part of a well planned three stage development project. This development is in full swing with stage II well underway. Stage II includes, inter alia, construction of a new fleet pier, torpedo support facility, helicopter support facility and rifle range. The Submarine Squadron headquarters is in the process of transferring its centre of operations to a recently completed facility on the west coast and the Submarine Training Systems Centre now conducts regular courses at FBW in support of the new Collins class submarine. In due course the software centre will also move to the west coast.

Situated on Garden Island 50 km south of Perth, Stirling was a greenfield site developed by Navy for Navy. Work commenced in 1978. Remote from the mainland and connected by a causeway, it is the 'jewel' in the Navy's environmental crown. From an operational facilities perspective a number of significant events of interest have occurred recently. These are primarily associated with the preparations for the Collins class but have implications for the surface fraternity as well. New infrastructure includes the Underwater Tracking Range, Magnetic Measurement Range and Magnetic Treatment Facility. All these have applications for warships and provide a quantum leap on current installations. To seaward, the West Australian Exercise Areas (WAXAs) have been expanded and ships can now also look to exercise areas and support in the North West, exploiting Learmonth, as an escape from the harsh winter conditions of the Southern Ocean.

Training facilities are also being constructed. In particular, a Damage Control and Fire Fighting facility is now in place. This includes a helicopter training module for helo-capable ships as well as an accredited Disaster Relief Training site.

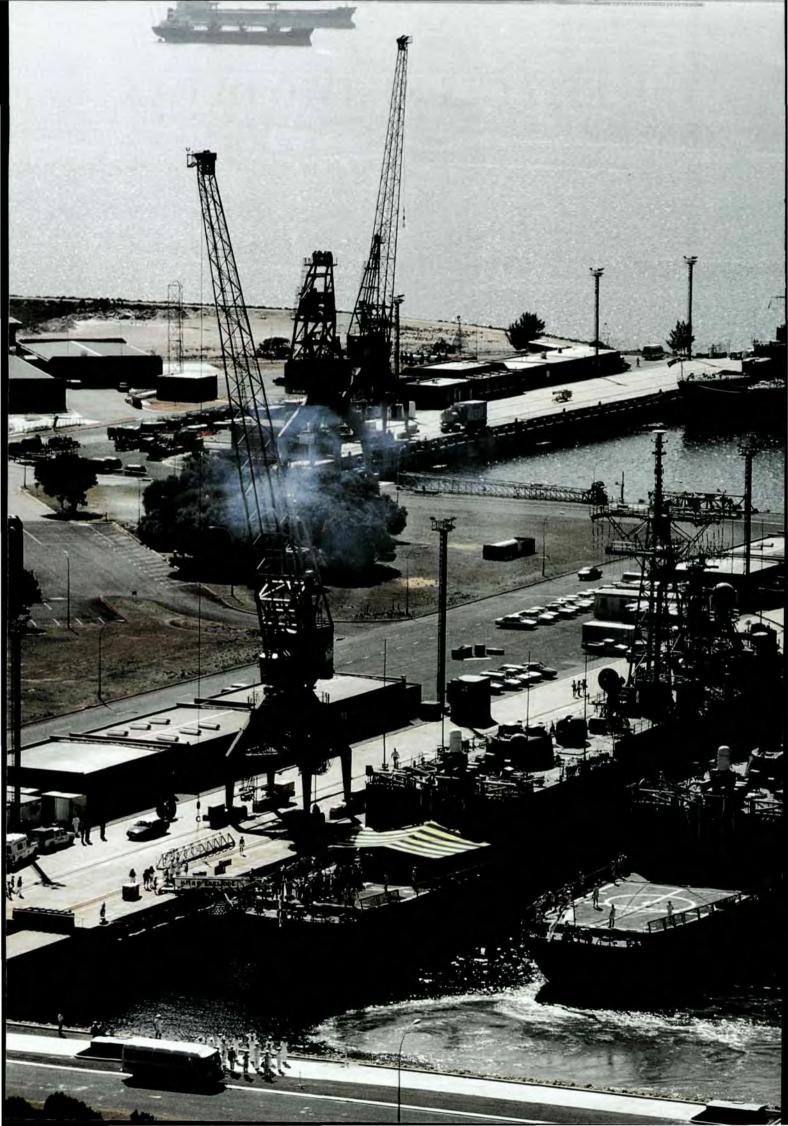
EFFECTS

It can be argued that TOB has created a climate for change. The magnitude of change created is vast but for the purposes of this article three areas — culture, operational support and personnel — will be addressed.

Culture

One of the most difficult hurdles TOB has to overcome is resistance to change. The formal recognition of such a policy overtakes the previous era of a Fleet based in Sydney with small numbers in other outports. TOB necessitates a change in culture and challenging of our fundamental philosophy, and could be seen as one of the biggest challenges facing Navy for the remainder of the decade. TOB is everyone's business and is more than a simple belief that it simply involves homeporting ships or constructing buildings at HMAS *Stirling*. An overall strategy, outlining guiding principles, has recently been developed within Navy Office in consultation with other commands, and it is this strategy that now will be put into practice to guide further planning.

There are also more subtle ways of inculcating hearts and minds, such as changing publications to reflect TOB. Recently fleet operating orders, MARORDS, were amended to reflect instructions which were rel-





evant independent of location. This removed examples such as the Fleet Gym opening times to the Dental hours at *Kuttabul*. This change also illustrates the one fleet ethos that has arisen from the basing major warships outside Sydney. One Navy - Two Oceans!

Although the vision of a mature TOB policy has not yet been enunciated, this could be seen as being a worthwhile venture so that the policy's progress along the path to maturity can be measured. A comparison between the vision and reality would provide a ready performance indicator. It would also help monitoring changing attitudes. For example, one indicator of the progress towards acceptance of changing culture could be the point at which signals, memos and the like no longer aim their contents at an east coast readership, but consider a national audience as a matter of course. Another would be the conduct of the majority of a ship's workup from the homeport — more specifically those elements which do not rely on unique facilities on either coast.

Operational Support

TOB should drive Navy's operational support requirements. This is becoming so through a process of evolution. Many of the resources necessary for ships to maintain operational standards are either available in, or can be deployed to, the west. This will allow west coast ships' workups to be conducted from the homeport, as is the case for east coast ships. One shortfall being addressed by HQADF is the provision of fast jet support in the West. Whilst 25 Squadron can provide limited-speed aircraft, fast jets must currently deploy to WA to support maritime activity and this incurs a penalty in dead time during aircraft transit across the country.

Efforts are underway within Maritime Headquarters to provide ships with access to combat system simulation training on the west coast. In the future, much more emphasis may need to be placed on simulation packages as a real alternative to access to live fast jet hours. This is not to suggest fast jets are not required; rather that these hours could be more efficiently realised if restricted to major exercises and other dedicated activity periods throughout the year.

The TOB policy has contributed to a rethink of Navy's approach to the provision of target services, in particular the replacement JINDIVIK. A project team is now looking at a deployable and portable target, capable of operating both east and west. This arose after an original plan to enhance the fixed facility at Jervis Bay was excluded as an option. The outcome will be the ability to fire medium range missiles in the West (or many other places). With regard to sea training, the Sea Training Group has addressed the problem of its support to an expanding Navy located on two coasts. In order to maintain consistency of standards and 'one Navy', the accredited sea riders concept has been developed. This entails formal accreditation of suitably qualified personnel (primarily personnel from FBW) to be employed as members of the Sea Training Group, under Commodore Flotillas. Not only will this alleviate the burden on other members Of the group, it will also enable wider coverage of ships on both coasts simultaneously.

At FBW, the Operations Room is now connected electronically to Maritime Headquarters in Sydney and serves as the contingency computer site and alternate Joint Operations Room. This means that there is now some form of built in backup to the MHQ information network.

Maintenance aspects of operational support have also developed. A large FIMA organisation is now capable of working on all classes of ships from patrol boats to submarines. Local defence industry infrastructure has also improved with a prime indicator, the first FFG refit, conducted in WA in 1993. In 1996, all three west coast FFGs will undergo Depot Level Maintenance (DLM) in the West. Standby for *Anzac* in 1998! Stores support has also improved and matches the east coast in customer service in every way.

There is little doubt that operational support in the West is evolving. Although a complete set of combat system qualification trials (CSSQT) and workup has not yet been conducted in the west, the successful completion of such an event will be a yardstick for operational support of TOB and is a worthwhile goal. The conduct of standard EAXA-type activity such as Principal Warfare Officer (PWO) sea weeks in the west also provides a measure of TOB implementation and helps redress a natural tendency to transit ships east for operational support. In fact, the final outcome might be a split workup on both coasts with east coast ships transiting to the west to exploit unique non-deployable facilities such as the UWTR and magnetic treatment facility. The pendulum may swing towards the west.

Personnel

There are a number of complex personnel issues created by TOB. Principal among these is the uncertainty of back to back postings due to the lack of posting opportunities ashore in the West. Understandably, a number of personnel are reluctant to move their families to the West for a relatively short period. There is also the real problem non-West Australians experience with the lack of extended families and potential loss of spouse income created by a move to the West. The result is the potential emergence of a permanent

'commuter Navy', with personnel returning to the east at every opportunity. The problem could be partially redressed by transferring whole activities to the west and this is under investigation in a number of areas at present. Increased communication by marketing of lifestyle in the West and Stirling facilities (and benchmarking it with the opportunities in the east) may also help sell the product. An alternative could be to accept the commuter issue as an outcome of TOB, with perhaps special packages being set in place as an offset to alleviate the burden of family separation. Whilst it may not be the panacea, better reunion opportunities through increased financial support to assist transportation of families to the West for leave may be a worthwhile endeavour. Financial offsets may be realised through a particular member not electing to take a removal to WA during a posting. This also has the advantage of the Ship's CO remaining in WA for longer, during periods his ship is alongside FBW.

THE FUTURE

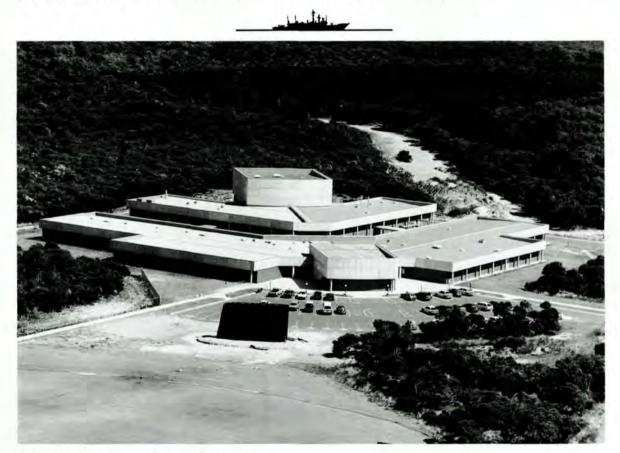
This article has highlighted that TOB involves more than homeporting ships and constructing buildings. The policy also raises a number of cultural, operational and personnel issues.

In time, a large majority of Navy personnel will serve in Western Australia or be directly affected by the policy. The magnitude of new activity and the complexity of some of the causes and effects of TOB present a challenge now and in the future. Noting the cultural change the Navy faces, there could be seen to be value in formalising responsibility for the implementation of the policy. This could include procedures for the formal measurement of Navy's progress towards TOB maturity. At the end of the day, this should provide warships on the west coast that are better prepared, in all respects, to carry out their primary roles and functions.

As a final thought, if ships had to vacate Fleet Base East what would happen? Could Navy operate effectively from somewhere else? In the longer term that somewhere else may well be FBW. We owe that ability to TOB.

ABOUT THE AUTHOR

CMDR Thomas joined the Naval College in 1974 as a Cadet Midshipman. A seaman-qualified officer, he completed his PWO course in the UK in 1983 and subsequently served in HMA Ships Vampire and Perth. After completing the RAN Staff Course in 1987, he became the Surface Weapons Trials Officer at RANTAU prior to serving as XO of HMAS Adelaide in 1989 and 1990. Since 1991, CMDR Thomas has been the Operations Officer at HMAS Stirling, in charge of a small lodger unit. He assumes command of a west Coast-based FFG in October, 1994. Married with three children, he currently lives in Booragoon, Western Australia.



Submarine Training and Systems Centre, WA.

NAVAL AND MARITIME PI









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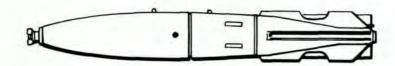
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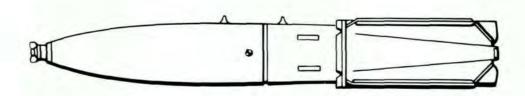
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DESTRUCTOR DESCRIPTIONS



DESTRUCTOR (DST) MARK 36



DESTRUCTOR (DST) MARK 40

The conflict in Southeast Asia saw the introduction of a completely different mine concept. By installing the Mk 75 DST Modification Kit in GP Low Drag bombs, the weapons became Destructors (DST), or bomb mines. The DST's, created by marrying the Mk 75 kit to the bomb, mark a major advance in the mine ready-round concept because the maintenance time for the kits in storage and the time required to prepare the weapon for planting are very significantly reduced over those required for standard sea mines such as the Mk 52 and Mk 55 series.

With the Mk 75 DST Modification Kit installed, a 500-pound Mk 82 bomb becomes a Mk 36 destructor and the 1000-pound Mk 83 bomb becomes a Mk 40 destructor. The figures above show both the Mk 36 and Mk 40 DST's. (The Air Force incorporates the kit into its 750-pound Mk 117A bomb, which then becomes the DST Mk 117D.) The DST Mk 36 can be equipped with a Mk 15 (Snakeye retardation) or a standard conical fin. The Mk 40 DST uses either a standard conical fin or a retardation fin assembly (MAU 91) with the adapter ADU 320/B. When used over water, the DST Mk 36 and Mk 40 must be retarded.

The heart of these bomb mine destructors is the Mk 42 magnetically actuated firing mechanism with its several associated components and features. The Mk 42 uses a thin-film magnetometer as its sensing device. The various options available in sensitivity, PAC (Probability Actuator Circuit), arming delay, and self-destruct times are obtained by merely breaking or not breaking tabs in the circuits. This feature makes the preparation for planting a much easier and more rapid operation than that on standard sea mines. Another important feature of the later mods of the Mk 42 firing mechanism is the PAC which blocks the mechanism from firing actuations at regular intervals and acts, in effect, somewhat as the ship counter mechanism does on standard mines to reduce the weapon's vulnerability to minesweeping.

DST's became the first mines to be useful as both land mines and sea mines. When buried in the ground after impact, they would actuate on motor vehicles, personnel carrying metal objects, etc. When dropped in rivers, canals, channels, estuaries, harbors, they would actuate on freighters, coastal junks, small craft, etc—any metal-carrying or metal craft.

PLANTING A 'WAR GARDEN'

ON THE USE OF NAVAL MINEFIELDS

by Lieutenant Commander Alan Hinge RAN

n Monday 8th May 1972 US Navy and Ma rine A6 and A7 aircraft were catapulted from the deck of USS CORAL SEA to mine key targets in the territorial waters of North Vietnam. Their main objective was to close Haiphong harbour by peppering 75 Mk 52 /1000 pound bottom mines along the narrow (200-250 ft), 12 mile long main shipping channel into Haiphong (see map overleaf). In the following days 700 DST 36(converted Mk 82/500 pound bombs) were laid in three other fields outside the Haiphong channel entrance. In a matter of weeks 11,000 destructor 'bomb mines' were laid along the North Vietnamese coastline in and around Cam Pha and Hong Gai, and also in coastal areas where lightering of strategic cargoes could take place. During the entire operation only one A7 aircraft was lost and it was described by Admiral Elmo Zumwalt, the US CNO at the time, as a 'textbook operation'. Twenty seven merchant ships were confined to Haiphong harbour for 300 days at a cost to North Vietnam and its backers of almost one billion dollars (in 1994 terms). During the 10 month period over two million tons of war materiel could not be brought in by sea and was only partially compensated for by land/ river transport from China, which in turn became easier for US forces to interdict. The cost of the entire operation, including aircraft loss, was only \$US10 million, but the military-political dividends arising from the use of the mine's 'psychological warhead' were inestimable. President Richard Nixon and Henry Kissinger - the key decision makers at the time - both had no doubt that the mining and bombing of May and December 1972 had a decisive effect on the willingness of the Vietnamese to negotiate the peace treaty of January 1973.2

This article outlines why and how the mine was used as a tool of conflict management and limitation. It also highlights several misconceptions concerning the uses of the sea mine and naval minefields.

Why was the mine used?

The use of mines was at best a huge gamble and at worst an act of angry desperation by Richard Nixon who, by the beginning of May 1972, was facing the imminent collapse of South Vietnam. This collapse would be set against the backdrop of a key summit with the Soviets in a matter of weeks, a strong desire not to jeopardise the recent historic rapprochement

with China and having to face a Presidential election in five months. The following chronology sets out how the drama unfolded.

March 30

 A massive communist spring offensive is launched involving 13 of the 14 PAVN (People's Army of Vietnam) regular divisions and 150 independent regiments. Quang Tri province is soon overrun and Hue threatened.

April 2-4

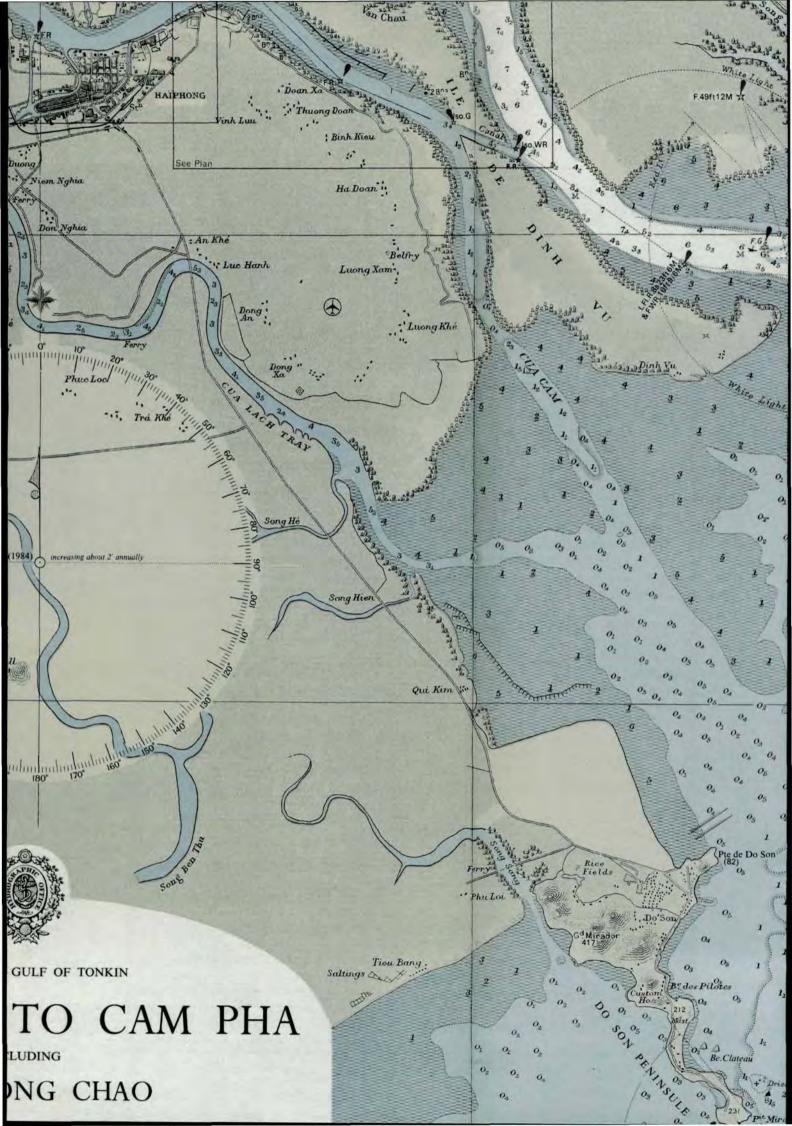
Major General Alexander Haig, then working as an adviser to Henry Kissinger, consults the Chairman of the Joint Chiefs of Staff (Admiral Tom Moorer) who advocates the mining of North Vietnamese waters. His CNO, Admiral Elmo Zumwalt, summarised his Navy's view at the time: ' We (USN Command) all preferred mining to blockading (with ships). Mining was tactically simpler and politically more decisive. Ships patrolling aggressively in front of harbour entrances would be both more provocative and more vulnerable than mines lying quietly in harbour waters.... As military operations go, in fact, mining is one of the most cost effective there is. It is relatively cheap and relatively safe and extremely threatening to an enemy'.3 However, civilian planners and academics had consistently considered mining too escalatory, and since late 1964 had resisted all USN proposals to mine. Studies from the Office of Systems Analysis and even the CIA all considered the effects of mining on the North Vietnamese war effort to be minimal, and even Nixon's eventual decision to mine was strongly opposed by the Defence Secretary and CIA Director.

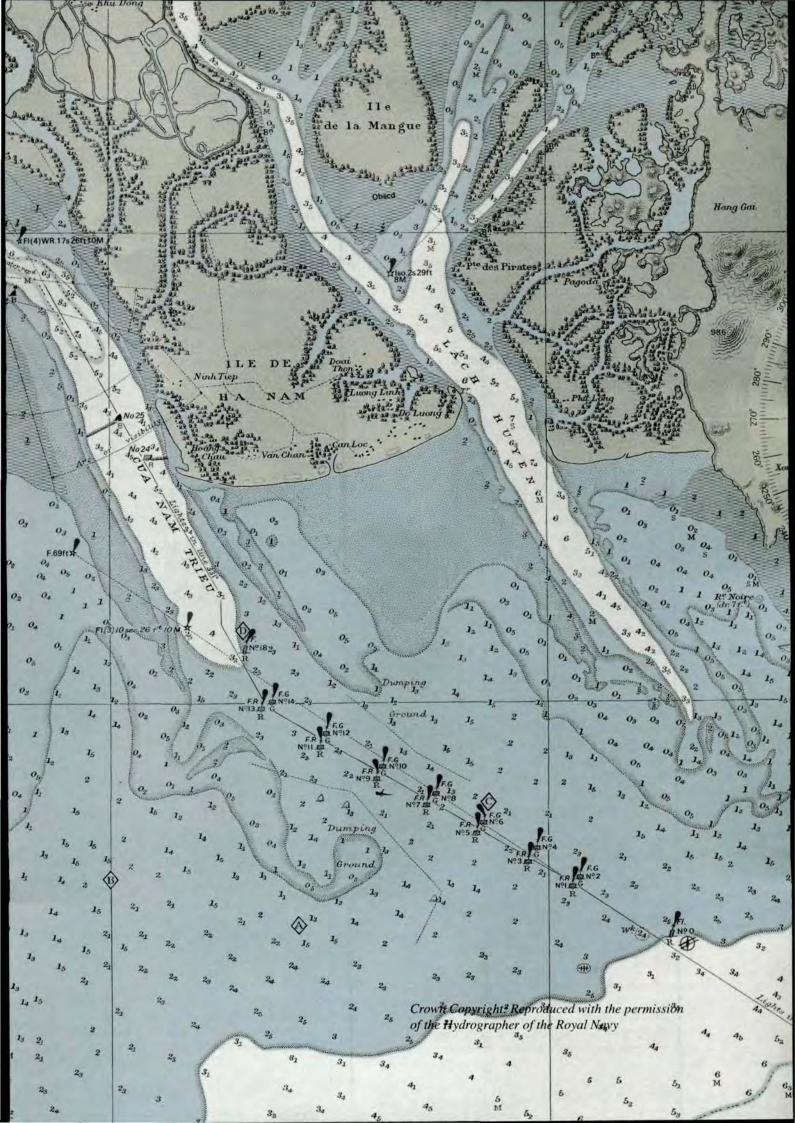
April 6

 Haig submits a proposal to mine Haiphong harbour to Kissinger. Kissinger likes the idea and keeps it as a 'card' to make the North Vietnamese 'blink' if negotiations stall.

April 23

 Admiral McCain (CINCPAC), the US Pacific Theatre Commander, requests approval to mine target areas in North Vietnam, especially Haiphong Harbour. Advice from bureaucrats and civilian advisers in the State Department and White House insists that mining will cause cancellation of the





Moscow Summit, and relations with China would stall or regress. These risks are still considered too great by Nixon and Kissinger, and they continue along diplomatic avenues.

CRUNCH TIME — Nixon's 'Week of Disaster': 1-8 May 1972

Monday 1 May

South Vietnam is now literally on the brink of collapse with 69,000 US troops still 'in country'. Nixon was shocked to hear an urgent dispatch from General Abrams (MACV Commander, Vietnam) that,'...it is quite possible that the South Vietnamese have lost their will to fight, or to hang together, and the whole thing may well be lost'. 4 Nixon later commented in his memoirs that ,'...I could hardly believe what I heard. I took the cable and read it for myself. "How could this have happened?" I asked, and then I thought of the bleak possibility it was conceivable that all South Vietnam would fall'.5 He described this as the beginning of his presidency's 'week of disaster', and one writer attempted to sum up Nixon's attitude at the time by suggesting that, '... Richard Nixon had become unnerved; he had concluded that he could not politically survive a defeat, or even the appearance of defeat, in South Vietnam. He was convinced that his political future rested on the resolution of the Vietnam War, and not on the Moscow Summit...The Vietnamese and Russians had conspired to humiliate him and he wanted to move boldly against Moscow'.6

Tuesday 2 May

 The situation in the field continues to deteriorate rapidly. CINCPAC repeats his request to Moorer for the mining of Haiphong Harbour.

Wednesday 3 May

 A meeting is convened on board the presidential yacht Sequoia. According to Kissinger, the North Vietnamese are now so confident of victory that they will not even go through the pretence of negotiation. Nixon considers ordering a presidential brief on a major mining operation.

Thursday 4 May

 The Presidential Brief is ordered from Moorer who passes the detailed planning job to Zumwalt and his staff.

Friday 5 May

Kissinger discusses ramifications of the mining with Nixon. According to Kissinger '...Our action had to provoke a shock that would give the North pause and rally the South. ...My preferred strategy was the plan resubmitted by...Haig on April 6: the blockade of North Vietnam to be accomplished by mining...I favoured a blockade because it would force Hanoi to conserve its supplies and thus slow down its offensive at least until reliable overland routes had been established through China...I preferred mining because after the initial decision it was automatic; it did not require the repeated confrontations of a blockade enforced by intercepting ships...once enemy supplies in the South were exhausted, the mining would create strong pressures for negotiation'.⁷

Saturday 6 May

 At Camp David Nixon makes up his mind to mine and decides to make a televised address to the nation on Monday 8th.

Monday 8 May

• A three-hour National Security Council meeting sees strong arguments against mining from Defence Secretary Laird and CIA Director Helms. Secretary of State Rogers is 'ambiguous'. Kissinger, Vice President Agnew and Treasury Secretary Connally are in favour. Kissinger says in his memoirs that, '...I then answered the analyses that disparaged the effect of mining. The North Vietnamese would have to find alternative routes for 2.1 million tonnes of seaborne imports...it is easy to say that they have four months (reserve capacity) and would go all out and end the war, but they would end up with zero capacity...one thing is certain, they will not draw their supplies down to zero'.8

To exacerbate this lack of unity at the highest levels academic experts on relations with the Chinese and Soviets continued to come up with what turned out to be wrong and pessimistic predictions. Chinese and Soviet reactions to the mining were mild. The Moscow Summit not only went ahead but was very successful. For the Chinese, who had 'bigger fish to fry' in their relations with the US and wider world, it was a matter of business as usual.

May 12

 The North Vietnamese send word that they are ready to resume negotiations. On May 15 the US agrees to reopen plenary sessions in Paris.

On August 22 Nixon is renominated by the Republican Party with a vote of 1,347 to 1, and in November is re-elected in a landslide with the highest number of popular votes ever cast for a candidate, and the most number of states ever taken by a candidate. As we all know he did not live happily ever after, but at the time 61% of the popular vote seemed an endorsement of his handling of the war.

Background to the operation

Perhaps the mining operation should have taken place as early as 1964-65; indeed naval officers had cried themselves hoarse during the mid to late 60's advocating the mining of North Vietnam. As a Lieutenant Commander in 1945-46, Moorer had the job of interviewing Japanese naval officers on the effects of mining (Operation STARVATION) as part of the Strategic Bombing Survey. He was impressed by the direct and indirect effects on the Japanese war effort, and in 1964 (as CINCPAC) he was convinced mining would put huge pressures on North Vietnam. During his tour as CNO (67-70) the Navy continued to endorse the mining of North Vietnam, and funded a major mine warfare research study known as Project NIMROD was approved. Importantly, the study emphasised that civilian and military planners consistently:

- knew little about the use of mines and assumed that they could only be used in long strategic campaigns when the reverse is true, and
- failed to realise that mines are special weapons that require considerable training of support personnel if they are going to be used effectively.

Importantly, a major player in NIMROD later produced an influential article in the widely read Naval War College Review (May 1971 issue), exactly one year before the mining of North Vietnam. ¹⁰ It was called 'Mining: A Naval Strategy' and it exposed several misconceptions and challenged some of the long held fears about using mines – fears that may well have unecessarily limited US options for seven years. The article helped provide a new basis on which to firmly tie mines into the political-military strategy of graduated response and be used as tools in limited conflict. Moreover, it contributed to providing a logical basis on which to overcome the fear and ignorance associated with mine use.

This process of 'selling' a new approach to weapons use and strategy highlights the importance of the professional judgement and persistence of senior naval Officers being backed by solid research, then allowing the new approaches to be 'soaked up' by the naval/bureaucratic/academic community through publication in prominent journals.

Just how effective are mines?

Minefield effectiveness in general will now be discussed in terms of physical and psychological effects.

Physical effectiveness

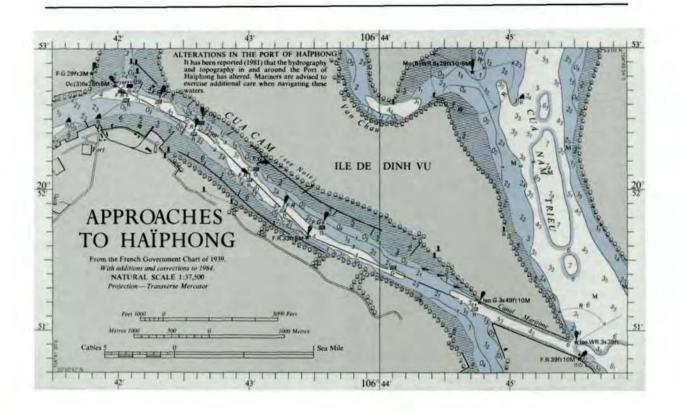
In 1987 the FFG USS Samuel B Roberts was struck by an Iranian moored contact mine of 1908 Russian design. The vessel was 'pushed up' three metres; drastic flexing occurred and major rupturing of the hull, keel and superstructure resulted. The engine room flooded immediately and the engines were dislodged from their beds, forcing the vessel to limp away using its retractable 'get home' auxiliary propeller. The ship then had to be towed to Bahrain and did not reenter service for years. Cost of repairs was \$96 million (in 1989 dollars) and it was thought — with some justification __that the only reason it was not 'written off' was to save face and not let it go down on the record that a US Man 'o' War was 'taken out' by a primitive Iranian mine. 11

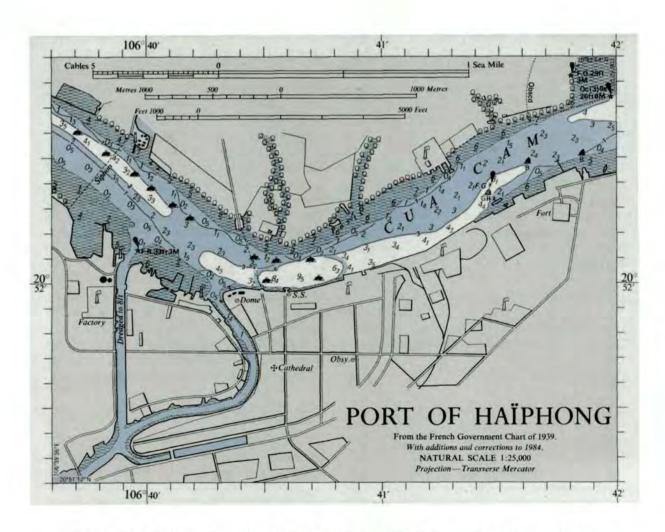
Bottom mines are even more dangerous than moored contact mines. Underwater ignition of high explosives produces gas under enormous pressure that rapidly and violently expands against the intervening, incompressible mass of water. A shock wave is produced that initially travels toward the target at supersonic speed and a huge gas bubble commences expansion and migration towards the surface. The subsequent pulse action of the gas bubble, in the incompressible water medium, gives rise to a series of overpressures and underpressures that follow up the initial shock wave and progressively hit the target. The target is then 'whipped' and lifted in the middle causing it to flex violently as a 'free beam'. Gas bubbles have lifted some vessels several metres causing their keels to snap - literally breaking them in two. Of course, the amount of damage depends on many factors: deployment depth, charge weight and target 'strength', as well as the composition and topography of the seabed.

Modern commercial and military vessels are in many ways less robust than their WWII equivalents. They are unrivetted and laden with sophisticated mechanical and electronic systems that are extremely vulnerable to violent shock damage inflicted by the detonation of large bottom mines in depths up to a maximum of perhaps 80 metres. For example, a simple DST with a 200 pound charge in 20 metres of water is capable of crippling or even 'writing off' a destroyer (depending on the nature of the bottom and degree of equipment shock mounting). A mine containing 500-700 kg of explosive is likely to cripple a 100m/4500 tonne destroyer at 60 metres. Obviously, damaging the vessel to 'write off' stage is possible as deployment depth decreases. While a ship may appear to maintain its integrity from a distance after a mine detonation it is interesting to note that ,during WWII, numerous ships were written off or held up with lengthy and costly repairs because of whipping effects. Distortion damage such as the breaking of frames, braces, lines and loading hatches together with main engines jumping off their beds, and all manner of pump, valve and system fittings breakages occurred.

The 'Psychological Warhead'

The use of any weapon, especially one as unique as the mine, has to take into account human perceptions. The mine is the 'weapon that waits' as a hidden, automatic device capable of infinite patience and instant attack. It cannot be fought like aircraft or surface ships since mines lay quietly, emitting no tell-tale radiations, only revealing themselves in violent spasms. The mine





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is the only form of weapon that can actually be deployed and used without killing or injuring people or damaging property. The initiative and aggression must therefore come from the opponent. However, in history there have been many blockade runners but precious few minefield runners; but why is this so?

The psychological impact of mines is quite different from that of other weapons. During the American Civil war, '... Sailors hardened to the smoke, noise and pandemonium of close range cannonading were stunned and demoralised by the sudden and unexpected mine blasts' 12 In both world wars, German submarine crews were more afraid of mines than any other weapons. In WWII a Japanese officer stated that, '...the crews ... were very much worried and frightened by this mining'. 13 The sinister aspect of mines in general was summed up by a British Officer in WWI who said, 'I don't mind a fighting chance but I have a dread of mines'. 14 Sixty years later, during the Falklands War another officer said, '... Mines have come to occupy an important place in the canon of fear producing agents...in part this is because they are an impersonal, inhuman threat ... not only are mines and booby traps impersonal but both can strike at any time, without any warning; they can help to extend danger from the firing line through to the lines of communication'. 15 It is also interesting to note that during the Vietnam War less than 10% of US casualties occurred as a result of mines and booby traps, yet the psychological effects of these weapons proved extremely disproportionate. Mines of all descriptions are seen as implacable, untiring, impersonal and incapable of mercy.

Any question of harbour closure is inexorably tied up with the psychology of the adversary, and the essence of the mine's psychological warhead is the increased stress placed on an opponent who can be made to develop extreme frustration and an exaggerated fear of the unknown, invisible mine threat. For example, have you ever wondered why people kick car tyres when they are frustrated with their vehicles? or, on another level, why numerous anti-aircraft systems had to be fitted to vessels in WWII when it was well established at the time that several were highly ineffective? One of the reasons is that human beings simply have to feel that they can 'do something' when things go wrong or they are under threat. Being able to do something - anything - tends to reduce personal stress. Minefields do not permit the rapid release of tension; on the contrary, they cause a build-up of stress.

Laboratory tests have shown that, given a choice under conditions of extreme uncertainty, combatants will exaggerate the likelihood of the more extreme consequences. 16 Studies also show that feedback concerning the validity of decisions arrived at under conditions of extreme uncertainty is critical. 17 Without feedback, 'all or nothing' behaviour is exhibited: this in-

volves inflexible and subjective evaluation of the probability of threat and a tendency to estimate risk at only two degrees of danger; risk is deemed to be at an acceptably low level or an unacceptably high level, and estimates of probability of loss are not made. 18 In fact, a major study of the psychological effects of minefields concluded that, '... psychological studies confirm the intuitive notion that decisions made with incomplete information, with no way to determine the accuracy of guesses, and with dire consequences for certain choices lead to strongly exaggerated perceptions of the situation. The application of minefield psychology seems clear, at least qualitatively. Any minefield, regardless of how small the threat it actually poses, tends to be viewed as a serious danger not to be taken lightly. 19

Minefield Cost Effectiveness

Naval mines are effective and affordable force multipliers which are easily manufactured, easily maintained and readily deployed. The following points are worth bearing in mind:

- Mines have been very cost effective in the past. In the North West Pacific during WWII, US cost per ton of enemy casualty for the mine compared to the submarine was \$6/ton compared to \$55/ton.²⁰ In the South West Pacific, largely because of the abundance of choke points and shallowness of water, this ratio was exceeded.²¹ It has also been estimated that in the Pacific Theatre mines were from 4 to 13 times more cost effective than torpedoes, depending on whether or not actual submarine losses were taken into account.²² The mine is even more cost effective today as the costs of counter measures and targets have risen astronomically.
- Mines have a relatively low initial cost and most are independent of cost increases for guidance and propulsion systems. They cost from around \$7,000 for a DST 36 to \$50-90,000 for a good AMP(Acoustic, Magnetic, Pressure actuated) bottom mine. This compares to \$1.5 - 2 Million for a Harpoon missile or a Mk 48 torpedo.
- Mines are easy to maintain and have low upkeep costs. They are true 'ready rounds' which have a 20-30 year shelf life
- Mines draw an extremely disproportionate response when deployed in critical areas such as choke points. Modern mine counter measures vessels are ton for ton the most expensive types of naval platform.
- Mines offer a permanent threat to the rival force, minimise the exposure and possible loss of valuable patrol platforms and enhance the value of other weapons systems by allowing them to redeploy in other critical areas.
- Mines can be produced in large quantities and so facilitate economies of scale
- Mines can be deployed by almost any military or civilian platform. In many cases the less 'military'

the platform appears the better.

 Mines are reliable and automatic and are immune to performance deficiencies in propulsion and guidance systems.

Some common misconceptions on the use of mines and minefields will now be dealt with.

Aren't mines highly escalatory?

Not at all! If used properly they can actually minimise or contain the level of violence by completely eliminating highly escalatory 'eyeball to eyeball' confrontation. Mines should be used to attack people with shortages, rather than with missiles and bullets. Minefields are 'low profile' weapons, the use of which can be accepted by the Australian public and the international community. For example, the 1972 mining of Haiphong harbour in terms of its impact on domestic perceptions and international opinion is a case in point. An ex-Chairman of the US Joint Chiefs of Staff commented that:

"...It is no exaggeration to suggest that the mining of Haiphong and other North Vietnamese harbours was a naval victory matching or exceeding the earlier land force's thrust into Cambodia to clean out North Vietnamese sanctuaries in May 1970. Both operations had similar objectives - prevent the enemy from getting supplies to the forces fighting in South Vietnam. While each operation accomplished its tactical mission, the mining of Haiphong by US naval forces provided an extra strategic bonus of bringing tremendous political pressure to bear on the enemy. Ironically, the Cambodia excursion led by the Army's First Air Cavalry Division and spearheaded by the 11th Armoured Cavalry Regiment had the opposite effect. Americans took to the streets to protest what they perceived to be the widening of the war into Cambodia with what they mistakenly believed to be unacceptable risks to US forces. Even though American casualties in Cambodia were kept to a minimum while US ground troops confiscated 70% of supplies and equipment held in enemy caches, the war opposition abroad and at home forced President Nixon to place time constraints on the operation, and US troops were withdrawn short of completing all objectives...the naval scenario was entirely different. America's allies applauded the President's action when he ordered the navy to mine the North Vietnam harbours, and at home hardly a whimper was heard because most Americans seemed to realise that mines do not have to sink a ship or cost a single life to act as a deterrent'.23

Mines are also handy in containing conflict when it is important to keep two 'barking dogs' or neighbours apart. Their invisible and automatic nature imply that there is little shame in refusing to challenge them. Less 'face' is lost as opposed to backing down when faced with combat aircraft and warships. All these factors contribute to the mine being a unique tool of conflict limitation and not of escalation.

Isn't using mines illegal?

No. Once again the US case study is a case in point of the legitimate use of the sea mine as a tool of collective self defence under Article 51 of the UN Charter: "...Nothing in the present Charter will impair the inherent right of individual or collective self defence if an armed attack occurs against a member of the United Nations..."

Nixon made it clear during his May 8th television address to the nation that an American ally was now in urgent need of defence assistance and 69,000 US lives were under threat. Also, in mining North Vietnamese waters detailed attention was paid to the customary and conventional laws of blockade, even though the terms blockade or quarantine were not used. 25

Reference was made by the US to the prevention, by mine interdiction, of access to and from North Vietnamese ports by commercial shipping and North Vietnamese naval units. This statement accorded with the 1907 Hague Convention Relative to the Laying of Automatic Submarine Contact Mines (Hague VIII) article II precept that mines not be laid with the 'sole purpose of intercepting commercial shipping'. Moreover, the mines were laid only in the territorial seas and internal waterways of North Vietnam. Freedom to navigate the high seas, under TIAS 5200 and the 1958 Geneva convention on the High Seas (and UNCLOS III today), was not interfered with.

Adequate precautions were also taken for the protection of neutrals. A 72-hour arming delay was set on all mines used in the initial sealing of Haiphong harbour so that neutral shipping had sufficient time to 'flash up' and leave harbour. A world wide notice to mariners was issued in accordance with article IV of the Hague VIII Convention.

The post conflict 'sweeping' of mines by the deployer is also required by article V of Hague VIII, but this did not prove to be a problem. The Mk 52 mines had a 100 day self sterilisation time , while most of the Destructors had 200 day self sterilisation settings. ²⁶ Of course, the North Vietnamese did not know this at the time. Of the 11,000 mines deployed only one (faulty) device was eventually 'swept', that is, actually detonated during US influence sweeping that took place in 1973 under the peace accord. The others had self sterilised or self destructed at preset times (to keep the enemy uptight).

Sure, but isn't using mines a 'dirty' way of fighting?

Hell, No! Why hang around to fight an opponent face to face if you can avoid it? If you do stay around trying to be a hero you might get hurt, beaten or even worse. Don't be a sucker! Mines issue no communiqués and never surrender; use them to give you an edge by exerting a continuous threat against the opposition. Besides, wouldn't you prefer to get operations over with early? Paradoxically, sea mines are relatively 'humane' weapons! They are passive, 'unaimed' weapons – impersonal if you like – and the onus is left with the opponent to challenge or withdraw from the danger. The consequences are borne by him or her. This is especially the case if warnings and notices to mariners have been issued.

How should mines be deployed?

Simple. The essence of effective mine warfare is to initially deliver 'heaps' of different mines at the earliest possible time and preferably (but not necessarily) cover them with some sort of 'fire', 'Fire', depending on the tactical situation, can comprise offshore destroyer patrols as well as air patrols. Submarines can be used if command of the sea and/or air is not achievable or is too expensive; they are also important in reseeding fields in such situations. These principles maximise the deterrent effect and operational value of the minefield while minimising risk to the delivery platforms. Night air deployments or covert surface deployments (to avoid mine spotting) are excellent ways to deliver the quantities of mines required to bottle up harbours. Australia has more than sufficient current assets to do this. For example, if only 'half of half of half' (ie about 6%) of Australia's mine ordnance air lift potential were used in one sortie, as much ordnance as that used to close Haiphong harbour could be delivered.²⁷

Setting a large number of mines to self destruct rather than self sterilise using varied time settings, also contributes to increasing the anxiety of the opponent. Sterilisation times should be set in accordance with political/operational imperatives.

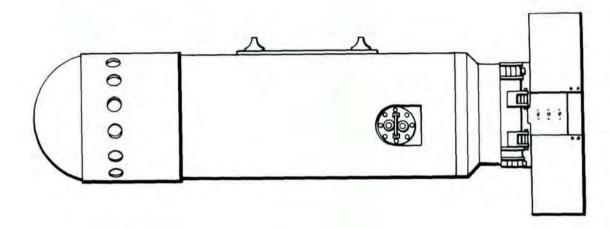
The need to deploy initially a large number of mines highlights the fallacy of a commonly believed view that you can 'bluff' an opponent by merely declaring that a field has been laid. If minefields are challenged and serious demonstration effects do not take place the minefield's psychological warhead is seriously impaired. During the 1984 mining of the Red Sea by Libya, initial fear after the first detonations was not followed up with serious demonstration effects and the effectiveness of mines was reduced to that of scare charges. After a brief decrease in traffic flow, traffic went back to normal after a few successful transits were made? ²⁸

Interestingly, in many of the conspicuous successes of minefields senior commanders attempting to transit minefields had actually witnessed the complete destruction of vessels (for example Admirals De Roebuck and Smith in the Dardanelles and off Wonsan, Korea respectively).²⁹ In the Red Sea minings, mine charges and settings – whether by accident, incompetence or design – were not sufficient to deter skippers and crews that in recent years had become used to the high threshold of risk inherent in sailing through middle eastern waters.³⁰ If mines are loaded and set to severely damage or sink ships, then the psychological warhead remains intact. Otherwise business is likely to go on as usual.

CONCLUSION

Fighting smarter depends on having an insight into when and how to best use the political and psychological warheads of various weapons and tactics, and the use of any weapon - especially one as unique as the mine - has to take into account human perceptions and behaviour. This article outlines some of the many uses of the naval minefield and has also attempted to deal with several common misconceptions about employing the 'weapon that waits'. The case study used to assist in meeting these objectives deals with the 1972 US mining campaign against North Vietnam. Certainly, the success of the campaign also depended on political conditions at the time but, given North Vietnam's heavy dependence on seaborne imports from the Soviet Union, it is reasonable to conclude that earlier deployment of mines against North Vietnam would have given significant political/military advantage to the US as far back as 1965.

The fear and ignorance which characterised approaches to mining taken by US Administrations, and which acted as caveats to effective action during 1964-72, were eventually overcome by determined political judgement and sound professional military advice, together with a tad of exasperation and frustration. What the 1972 operation does highlight is the importance of good advice to political decision-makers from professional and persistent naval staff. Such advice was derived from practical experience and backed by years of sustained high quality research and development. This led to the right mines being available and new doctrines for their use being developed. Furthermore, some key research results were ably diffused in professional journals so that politicians, bureaucrats and academics could be educated in the use of minefields as flexible tools of conflict limitation. A key lesson arrived at in theory, and then confirmed in practice during 1972, is that minefields really can be used to exercise some control over the actions of a determined adversary through adjustment of their areas, intensities, timings, targets and durations of effect. Minefields should be among the first, not the last options considered in a modern strategy of graduated response.



MINE MARK 52 (Typical)

Mine Mk 52 is an air-laid bottom influence mine containing an explosive charge of 625 pounds of HBX-1. It is in the 1000-pound-bomb size category and when dropped from aircraft must use flight gear. This mine was specifically designed to actuate on submarine signatures, its primary target, but it is equally effective against most surface ship signatures.

All mods of the Mk 52 have removable instrument racks, a feature which makes it possible to assemble, wire, test, and store "ready" firing-component assemblies remote from the explosive-loaded mine case and from other explosives. As a further design feature, all mods of the Mk 52 use identical cases and instrument racks; all cables and firing components are color-coded and modular. This not only makes assembly virtually foolproof but, through such ready interchangeability, means that each Mk 52 mine can be assembled in any of several mods, providing any desired combination of influence type actuation. These modular components are the same ones that are used in the Mk 55 mines.

Mk 52 mines were originally equipped with sterilizers only. During the Vietnam mining campaign, it became apparent that any such sterilized mines in shipping channels could pose a very severe hazard to dredging operations during peacetime. To avoid this problem a self-destruction modification was provided for the Mk 52 series mines which initiates the detonation of the mine at a predetermined time after laying.

Mod I employs an acoustic firing mechanism.

Mod 2 uses a magnetic induction type firing mechanism, efficient over a wide range of planting depths.

Mod 3 has a combination of pressure and magnetic induction influence firing mechansims.

Mod 4 combines acoustic and pressure influence type firing mechanisms

Mod 5 employs acoustic and magnetic induction firing mechanisms.

Mod 6 combines all three influence type firing mechanisms: acoustic, pressure, and magnetic induction and is incredibly difficult to sweep.

DIMENSIONS AND WEIGHTS

Length	70-3/16 inches
Diameter	18-13/16 inches
Weight	1130 pounds (Mod 1)
	1170 pounds (Mod 2)
	1190 pounds (Mod 3)
	1150 pounds (Mod 4)
	1200 pounds (Mod 5)
	1235 pounds (Mod 6)

Part 2 in the 'Fighting Smarter' series will appear in the Feb/Apr issue of JANI. It will look in detail at the particular mines required for Australian defence and how they should be used. Also, look forward to Part 3 of this five part series in the bumper 20th Anniversary edition (May/Jul 95): REVISITING THE "RUSTY HAND OF STEEL' - THE NAVAL RAID.

About the author

Alan Hinge MA BSc Dip Ed psc is author of the book 'Mine Warfare in Australia's First line of Defence'. In 1993 he became the inaugural Rockwell Scholar in Strategic Studies and is currently the Senior Visiting Military Fellow at the Australian Defence Studies Centre, ADFA. To date he has produced 33 articles on a very wide range of military subjects in professional journals in Australia and overseas. His latest publication is the ADSC Working Paper (No 26), 'Reducing Risk in Defence Projects'.

Note: 'Mine Warfare in Australia's First Line of Defence' is available to ANI members for \$17. This represents a 35% discount and includes postage and handling. Send your order to the ANI, PO Box 80 Campbell ACT 2601.

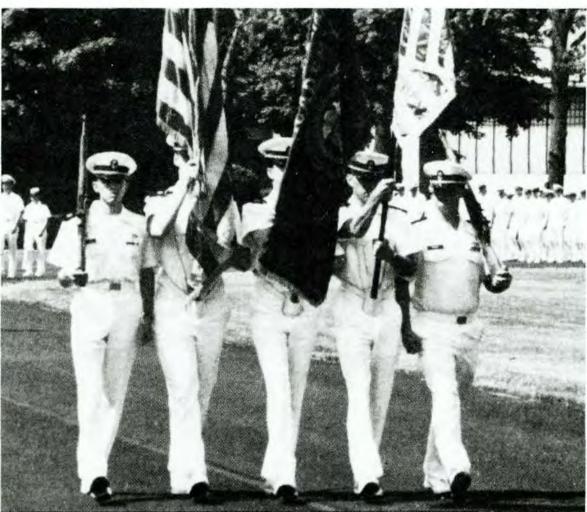
- The estimated cost of 8100 (27x300) ship days in 1972 is \$172,000,000. This translates to approximately \$1 billion in 1994 terms.
- See Nixon, R The Memoirs of Richard Nixon. (Arrow Books, London, 1979) p.689
- Zumwalt.E, On Watch: A Memoir, (Quadrangle and the New York Times Book Company, 1976) pp.384,387
- 4. Nixon(1979) ,op cit p.594
- 5. Ibid, p.595
- Hersh.S, The Price of Power: Kissinger in the Nixon White House,

(Summit Books, New York, 1983), p.510

- Kissinger, H. The White House Years, (Little-Brown, Boston, 1979) p.1178
- 8. Ibid, p.1185
- PROJECT NIMROD: The Present and Future Role of the Mine in Naval Warfare, (National Academy of Sciences, Washington, 1970)
- Patterson, A, 'Mining: A Naval Strategy', Naval War College Review, May 1971
- 11. See Friedman.N, 'US Frigate Mined in Gulf', US Naval Institute Proceedings, June 1988, p. 119. Evidence exists that the FFG was attempting to avoid the mine through a violent manoeuvre when it was hit. The mine was probably pushed away and downwards by the wash of the warship a situation which resulted in much more damage than an explosion to the side.
- 12. Patterson, op cit, p.63
- Duncan.R, America's Use of Seamines, (US Government Printing Office, Washington DC, 1962) p.157
- Holmes.R, Firing Line, (Jonathon Cape, London, 1985)
 p.211
- 15. Ibid.
- See Greer.W and Bartholomew.J. 'Psychological Aspects of Mine Warfare', Professional Paper No 365 (Center for Naval Analyses, Virginia, October 1982), pp.4-8. Some results of this research were published in the February 1986 issue of US Naval Institute Proceedings.
- 17. Ibid, pp.6-7
- 18. Ibid, p.7
- 19. Ibid.
- Johnson.E and Katcher.D, Mines Against Japan, (Naval Ordnance Laboratory, White Oak, Washington 1973), report NOL 0856-00038
- 21. See Duncan(1962), op cit, p.135. During WWII submarine minelaying in the South West Pacific had an average hit rate of 8 mines per target. This was the best rate in any theatre of war. See also the figure on p.220 of

- Lott.A, Most Dangerous Sea' (US Naval Institute Press, Annapolis, 1959).
- Figures are cited from Patterson, op cit, p.62. He takes his figures from S. Frey's report: The Offensive Mine laying Campaign Against Japan, (US Naval material Command, Washington DC,1969)
- 23. A comment by Admiral Crowe cited in 'Mine Warfare Vessels: Renewed Interest in a Credible Deterrent', Current News Early Bird Edition, Tuesday 11 February 1986, p.5 (This publication is prepared by the USAF for the US Department of Defense)
- Taken from the Yearbook of the United Nations 1968, Office of Public Information, UN, New York, Vol. XXII, Appendix II.
- A full transcript of Nixon's speech is found in, 'Text of the President's Address', Evening Star, Washington, 9 May 1972, p. A-10
- Lucknow, U, 'Victory over Ignorance and Fear: The US Minelaying attack on North Vietnam', Naval War College Review, Jan-Feb 1982, p.24 gives a detailed description of the mining of North Vietnam and includes such technical aspects.
- 27. 75,000 Ibs of mine ordinance were deployed along Haiphong's main channel. Australian military aircraft have an 'on paper' potential to carry a total of 1.4 million pounds of material in one sortie. This includes the P3C fleet 270000(18x15,000) Ibs, the F111s 240000 Ib (20/12000) and the C130 880,000 Ib (22/40,000). Various simple cradles have been developed overseas to carry mines in cargo aircraft, with the mines being 'gravity fed' out of the rear of the aircraft. The FA18 can carry two 500 Ib DST 36 mines. Of course, nowhere near this total potential could or should be realised, but a small fraction of it could, especially given that aircraft would return to their primary missions on completion of the initial minelays.
- See Truver.S, 'Mines of August: An International Whodunnit', US Naval Institute Proceedings, Naval Review Edition, May 1985
- See Meacham, J., 'Four Mining Campaigns: An Historical Analysis of the Decisions of the Commanders', Naval War College Review, June 1967, for an excellent and comprehensive account of the reactions of front line commanders to minefields.
- 30. It is estimated that 180 bottom mines were deployed in the Red Sea in July 1984 by the Libyan RO-RO vessel Ghat. It appears that at least some mines had less than half the normal charge weight (see Truver, op cit, p.109)





KINGS POINT—THE UNITED STATES MERCHANT MARINE ACADEMY

by

Warrant Officer Class Two Graham Wilson, Australian Intelligence Corps

ost people will be aware of the existence of the United States Military Academy at West Point and the United States Naval Academy at Annapolis. Some of the more knowledgable will know of the United States Air Force Academy at Colorado Springs. A few, even more knowledgable, will be aware of the United States Coast Guard Academy at New London. How many are aware, however, of a fifth U.S. Government funded academy tasked with the training of officers for Federal service?

The aim of this article is to introduce readers to this fifth institution, the United States Merchant Marine Academy (USMMA), the smallest and least known of the United States' Federal service training academies.

BACKGROUND

The USMMA represents a US government involvement in maritime training that dates back over a century. Since the administration of President Ulysses S. Grant, the US Government has initiated various programs to train its citizens for service in the merchant marine.

Between 1874 and 1936, various Federal legislation mandated and supported maritime training through school ships, internships and cadetships, and other methods. A disastrous fire in 1934 aboard the passenger ship *Morro Castle*, in which 134 people died, convinced the US Congress that direct Federal involvement in efficient and standardised training for the merchant service was needed.

Congress passed the Merchant Marine Act in 1936, and two years later, established the US Merchant Marine Cadet Corps. This marked the establishment of the USMMA, although training was carried out at temporary facilities until the Academy's permanent site at Kings Point, New York was acquired in early 1942. Construction of the Academy itself began immediately and 15 months later the task was completed. The Academy was dedicated on 30 September, 1943, by President Franklin D. Roosevelt, who noted that "the Academy serves the Merchant Marine as West Point serves the Army and Annapolis serves the Navy."

World War II forced the Academy to forego normal operation and devote all of its resources toward meeting the emergency need for merchant marine officers, Enrolment rose to 2,700 and the course of instruction was reduced from four years to two. Notwithstanding the war, shipboard training continued to be an integral part of the USMMA curriculum and midshipmen served at sea all over the world in combat zones. One hundred and forty-two midshipmen under training lost their lives in combat during the war and many others survived sinkings from enemy action. By the end of the war, the Academy had graduated 6,634 officers.

The war proved that the Academy could successfully meet the needs of a nation at war. As the war drew to a close, plans were made to convert the wartime curriculum to a four-year, university level program to meet the peacetime requirements of the merchant marine. The new curriculum was instituted in August, 1945.

The Academy has grown in stature since and is today recognised as one of the world's foremost maritime training institutions. In 1949 it received authorisation to award the degree of bachelor of science and attained full accreditation as a degree-granting institution; in 1956, the Academy was made a permanent institution by Act of Congress.

During the Korean and Vietnam wars, the USMMA again accelerated classes to meet the demands of those conflicts. Academy graduates and midshipmen were involved in both the Gulf War and in the humanitarian sealift to Somalia in Operation RESTORE HOPE.

The USMMA Campus

The USMMA is located at Kings Point, on the north shore of Long Island, in New York State, about 20 miles from New York City. The Academy's 28 buildings are located on 33 hectares of land on the Long Island Sound foreshore. While most of the Academy's buildings date from the 1940s, an extensive modernisation program in the 1980s has rendered most of the buildings and facilities virtually brand new. As well as being the officer producing institution for the USMS, the Academy is considered the "home" of the

Maritime Service and located on the campus are the Merchant Marine War Memorial, the Merchant Marine Memorial Chapel and the US Merchant Marine Museum.

The USMMA is operated by the Maritime Administration, an agency of the US Department of Transportation. Command of the Academy is vested in the Superintendent, a Rear Admiral in the United States Maritime Service (USMS). The current Superintendent is Rear Admiral Thomas T. Matteson, US Maritime Service (US Coast Guard, Retired) and under his control are the student body, the various academic and training departments and the administrative staff.

The Regiment of Midshipmen. In common with the practice at both the US Naval and Coast Guard Academies, the student body of the USMMA is organised into a cadet regiment. In 1972, the USMMA made history by being the first of the Federal academies to appoint female cadets; all cadets are referred to as "midshipmen" and the cadet regiment is referred to as the Regiment of Midshipmen.

Each year, approximately 275 young men and women are selected for appointment to the Regiment of Midshipmen, giving the Regiment a relatively constant average strength of 980. The Regimental Program is the mainstay of midshipman life. It is designed to provide midshipmen with leadership training and experience, and to develop qualities of self-discipline and responsibility.

The four classes of midshipmen bear the same designations as that of the other US service academies. Midshipmen in their first year at the academy are referred to as fourth classmen or plebes; in their second year as third classmen; in their third year as second classmen; and in their final year as first classmen. This "class system" is fundamental to regimental life. Although commissioned officers are allotted to each battalion and company of the regiment, their role is largely guidance and counselling. Command of the regiment and day to day administration is exercised by midshipmen. First classmen, under the supervision of the commandant of midshipmen and his staff exercise command of the regiment with the senior position being that of Midshipman Regimental Commander. Other midshipmen officer positions include those of Midshipman Battalion Commander, Midshipman Company Commander and Midshipman Platoon Commander.

First classmen who do not receive appointments to midshipman officer positions are appointed as midshipman petty officers and squad leaders. Second and third classmen are also eligible for these junior appointments and are expected to assist the first classmen in the indoctrination and guidance of the fourth classmen or plebes. An idiosyncrasy of the Regiment of Midshipmen, which it shares with the student bodies of the other US service academies, is the "Honour Code". This code states that "a midshipman will not lie, cheat or steal". As with the other academies, the USMMA Honour Code is supervised by a midshipman "Honour Committee". While the Honour Code is not as rigidly, some might say fanatically, adhered to at Kings Point as it is at, say, West Point, infringements of the code can lead to the "disenrollment", i.e. dismissal, of transgressors.

Academic Departments. The USMMA has a comprehensive academic organisation with departments of Engineering, Humanities, Marine Transportation, Mathematics and Science, Naval Science, Physical Education and Athletics and Shipboard Training and Continuing Education.

Administration and Staff. The superintendent of the Academy governs all aspects of academy and midshipman life. Under him come a number administrative offices and staffs tasked with the day to day management of the Academy. The principal administrative sections are Office of the Superintendent, Chief of Staff (part of the Office of the Superintendent), Office of Computer Resources, Department of Waterfront Activities, Office of the Chaplains, Office of External Affairs, Office of Admissions, Office of the Assistant Superintendent for Administration, Office of the Commandant of Midshipmen, US Marine Corps Representative, Office of the Academic Dean, Office of the Registrar, and the USMMA Library.

ENTRY TO THE ACADEMY

To gain entry to the USMMA, an applicant must both pass certain selection criteria and be "nominated" by a recognised nominating authority. General eligibility requirements include: "good moral character"; minimum age of 17 up to a maximum age 25 as at 1 July in the year of admission; US citizenship (except for a limited number of foreign midshipmen authorised by Congress); and ability to meet the physical, security and character requirements for appointment as a US Naval Reserve Midshipman.

Nomination

Once the general requirements are met, the applicant must obtain a Congressional nomination to the Academy. Each Congressman and Senator of the US Congress may nominate 10 candidates to the Academy each year. Additionally, the US representative for Guam, the Virgin Islands, the District of Columbia, the Commonwealth of Puerto Rico, and American Samoa, the Commissioner of the Panama Canal Commission and the governors of the Northern Marianas and the Marshall Islands may each nominate 10 candidates annually.

Nomination does not automatically qualify a candidate for admission to the Academy. Each candidate is required to pass stringent physical and scholastic tests prior to being accepted. Historically, 95 percent of each intake has ranked in the top 25 percent of high school classes. The Academy strongly recommends that prospective candidates take four years of mathematics, physics and chemistry, as well as mechanical drawing and machine shop.

Many highly qualified candidates are disqualified as a result of failing to pass part of the pre-admission medical and dental examination. Although legislative allowance is made for appointment of medically disqualified candidates following remedial treatment, the number of qualified applicants ensures that this avenue is rarely followed.

Appointment to the Academy is also open to enlisted personnel of the US Armed Forces on both active and reserve duty. Those applicants who are accepted but are not members of either the US Navy or US Naval Reserve are required to obtain release from their service and enlist in the US Naval Reserve. On successful graduation from the Academy, these personnel are discharged from the enlisted ranks of the Naval Reserve and commissioned as Ensigns. Former enlisted personnel who are "disenrolled" from the Academy are usually recalled to military duty in their previous service.

ACADEMIC TRAINING

The academic regime at the Academy, leading to the award of a Bachelor of Science degree, is intense. All midshipmen must complete a core curriculum of Mathematics, Science (physics and chemistry), English, History and American Studies, Naval Science, Physical Education and Ship's Medicine and Computer Science. Midshipmen select their major course of study from among five programs, namely: Marine Transportation, Ship's Officer, Marine Engineering, Marine Engineering Systems, and Dual Licence.

In the latter half of their final year, the first classmen take a comprehensive written examination, administered by the US Coast Guard, for their licences as merchant marine officers. Depending on their course program, midshipmen will qualify for: a third mate (deck officer) licence (Marine Transportation); third mate and Qualified Medical Technician (QMED) licences (Ship' Officer); or third assistant engineer (engineering officer) licence (Marine Engineering and Marine Engineering Systems). Dual Licence majors take both the third mate and third assistant engineer licence examinations.

In addition to their core curriculum studies, midshipmen are encouraged to take a number of elective subjects, both to enhance their professional training and to satisfy their intellectual curiosity. On top of this, midshipmen in their second and third year at the Academy spend six months of each year at sea on US merchant vessels where they are assigned to either the Deck Department or the Engineering Department, depending on their program major. This period is collectively referred to as the Sea Year and is administered by the Academy's Department of Shipboard Training and Continuing Education. Midshipmen who have indicated a desire to apply for a regular commission in the US Navy spend 30 days of their Sea Year embarked on a Navy ship.

MILITARY TRAINING

Although the USMS is not an "armed service" as such, the members of the service regard themselves as military personnel. All USMMA commissioned officers of the USMS also hold commissions in either the US Naval Reserve or another reserve component of the US Armed Forces. It is not surprising then that there is a strong military component to midshipman life. This is reinforced by the deliberate military atmosphere at the Academy — the uniforms and rank titles of the commissioned and non-commissioned members of the faculty, the military organisation of the student body, midshipmen's uniforms (to the uninitiated, indistinguishable from those of cadets at the Naval and Coast Guard Academies), and so on.

Military training is the responsibility of the Department of Naval Science whose Head of Faculty is a US Navy Commander on full time service. The Department gives instruction in a number of core courses — Fundamentals of Naval Science, Naval Weapons Systems, Naval Operations and Fundamentals of Leadership — and also offers a number of electives. One of these electives, "Advanced Naval Science Seminar", is designed for midshipmen intent on applying for a regular commission in the US Navy.

Successful completion of the Naval Science Program is a prerequisite for graduation from the Academy and qualifies a graduate for a commission as an Ensign in the Merchant Marine Reserve (MMR) of the US Naval Reserve. Not all midshipmen, however, are commissioned into the MMR. Some achieve regular commissions in the US Navy, while others receive regular or reserve commissions in the other services (Army, Air Force and Coast Guard) or the National Oceanic and Atmospheric Administration (NOAA).

PHYSICAL EDUCATION

The Department of Physical Education and Athletics runs a vigorous program of physical education which is integral to Academy training and emphasises team work, self confidence and initiative. All midshipmen take prescribed courses in swimming, life saving, sailing, self-defence and "ship's medicine". Additionally, all midshipmen have the opportunity to partake in a wide variety of team and individual sports.

RECREATION

Besides its impressive work and training facilities, the Academy provides a wide range of recreational facilities and activities for the midshipmen. Facilities include the chapel, the library, the Academy's flotilla of sailing and power craft and marina, and the midshipmen's recreation hall (Land Hall) which includes a bowling alley and various games rooms.

Activities available to midshipmen include sailing, rowing, scuba diving, the Regimental Band, choir, jazz club, debating and publication of student journals.

An interesting point in connection with the USMMA is that unlike the other four service academies, USMMA midshipmen do not receive pay (except during their Sea Year when midshipmen are paid about \$500:00 per month by the shipping companies) and that midshipmen are required to pay fees, currently amounting to about \$7000:00, spread over four years. Some of these fees are used to pay for mandatory student equipment (such as computers) and text books not provided at government expense. The bulk of the fees, however, is used to support the midshipmen's cultural activities.

GRADUATION

In order to graduate from the Academy, a midshipman must:

- · pass the required resident and sea project courses
- earn the minimum number of credits required by the curriculum in which he or she is enrolled
- · earn a minimum "quality point average"
- pass a US Coast Guard administered licence examination
- · pass all required certifications
- apply for and accept if offered a commission in the US Naval Reserve, or another uniformed service
- pass the Academy's physical fitness test in the first class year

MILITARY/MARITIME COMMIT-MENT

Graduates of the Academy incur a "return of service" commitment on completion of their training. This commitment consists of between five and eight years service in either the US Maritime Service, the regular or reserve components of one of the armed services or the NOAA, or in some other form of maritime related service (as determined by the Secretary of Transportation).

Failure by a graduate to complete his or her commitment can result in the person being called to full time active duty in a service determined by the Secretaries of Transportation and Defence for a period of not less than three years. This power may also be exercised by the Secretary in the case of midshipmen who are "disenrolled" from the Academy for scholastic failure or disciplinary reasons. In this case, service will be for a minimum of three years in the enlisted ranks.

CONCLUSION

As can be seen, the United States Merchant Marine Academy is a physically and intellectually demanding institution whose students are challenged every day to give their best.

Despite the fact that the United States imports over a third of the world's output of raw materials, 99 percent of which are transported to the US by merchant vessels, the US merchant fleet continues to shrink. This means fewer and fewer merchant sea berths available for Academy graduates. But that does not mean that the future is bleak for graduates. Those who do not obtain employment as sea going officers have many other avenues open to them including: commissions in the other services (including, surprisingly enough, the Army and Air Force) and the NOAA; Federal, State and municipal port and harbour authorities; ship construction and repair yards; and others, such as marine insurance underwriters, ship chartering firms, admiralty lawyers, and engineering and research companies.

Although the US merchant fleet is growing smaller, so long as US flag vessels ply the sea lanes there will be a requirement for high calibre officers to crew and command them. The job of the United States Merchant Marine Academy is to provide those officers.

Acknowledgment

The information on which this article was based was provided by Patricia Thomas, of the Office of Maritime Labor & Training, Maritime Administration, US Department of Transportation, and I gratefully acknowledge her assistance.



THE CENTRE FOR MARITIME POLICY

he Centre for Maritime Policy was established at the University of Wollongong earlier this year as a joint venture of the University and the Illawarra Technology Corporation, the commercial and consultancy arm of the University. The Centre is the first university-based centre in Australia to provide a focal point for multi-discipinary, policy-oriented research, teaching and consultancy on maritime issues. At the Centre there is a particular emphasis on the issues of concern to Australia and the nearer regions of the South Pacific and Southeast Asia.

The University of Wollongong provides an excellent home for the Centre. It is a smallish, regional university with a pleasantly developed campus, good services and only about five minutes from the nearest beach! The university prides itself on the excellence of its research and teaching, and this was recognised recently by the Federal Government when the University of Wollongong was ranked with the top nine universities in Australia. In fact, it was the sole regional university to gain this distinction, standing out as the only medium-sized institution in a group consisting mainly of the older, larger universities in the capital cities. These university rankings recognised quality of research, teaching and learning, community service, quality assurance processes, and performance within a national and international context. Importantly, overseas students constitute over ten per cent of the student population at the University of Wollongong - one of the highest percentages in Australia. There are many students from the Middle East, as well as from Asia and the South Pacific.

The Centre for Maritime Policy focuses on four substantive areas:

- Maritime security, strategy, and issues in maritime law including aspects relating to defence, maritime boundaries, law-of-the-sea, maritime law enforcement, maritime surveillance, response to maritime emergencies and maritime history;
- Maritime transport including commercial shipping, both in foreign and domestic trade; port development; logistics and intermodal transport systems; waterfront issues including problems of efficiency and waterfront reform;
- Maritime environment including problems of marine pollution, environmental monitoring, responsibilities, legislation, enforcement and control; and
- Maritime resources including problems that relate to offshore gas and oil extraction, seabed mining, aquaculture and fisheries.

The Centre's activities include a postgraduate program of Maritime Policy Studies aimed at providing a comprehensive introduction to maritime policy issues and covering a range of accompanying disciplinary, geographic and thematic interests.

The Centre has had some early achievements. It was successful in its application for funding assistance under the Australia and Asia Institutional Linkages (AAIL) Program administered by the Department of Foreign Affairs and Trade. Objectives of this program include the promotion of interaction between academic and research institutes in Australia and their counterparts in Asia, and the facilitation of 'second track' dialogue on regional economic, political and strategic issues to complement existing Government dialogue.

Funding assistance for the Centre for Maritime Policy covers the costs of two workshops held this year. The aim of the first workshop was to establish linkages between the Centre for Maritime Policy and the Southeast Asian Program in Ocean Law, Policy and Management (SEAPOL) based in Bangkok. This workshop was held in Wollongong during September and brought together representatives from SEAPOL and Australian participants to address national and international legal regimes covering coastal and maritime zone planning and management. With the imminent declaration of Australia's two hundred nautical mile Exclusive Economic Zone, and the entry into force later this year of the United Nations Convention on the Law of the Sea, the subjects covered at the workshop were very topical.

The second conference will be in Kuala Lumpur later in the year. It will be directed towards building a link between the Centre for Maritime Policy and the Malaysian Institute of Maritime Affairs (MIMA). The theme will be 'Regional Maritime Cooperation' and the focus will be on potentially valuable areas of cooperation, including the safety and security of shipping, marine environmental protection, marine scientific research and responses to marine emergencies. The workshop should help in bringing issues of importance to both Australia and Southeast Asian governments into a broader policy context.

The endorsement of these two workshops by the Department of Foreign Affairs and Trade is positive recognition of the growing importance of maritime affairs both to Australia and the regions around us. Nations are focussing more on planning and managing their uses of the sea. The Centre for Maritime Policy hopes to contribute to a more coordinated and comprehensive approach to maritime affairs and oceans management policy in Australia, and to lift the profile of Australia's skills and expertise overseas.

Other major objectives for the Centre for Maritime Policy will include the development of short courses in various maritime fields. The first short courses cover law of the sea, managing the Exclusive Economic Zone and maritime enforcement. These courses will be conducted on campus in conjunction with the Faculty of Law which will also be cooperating with the Centre in the presentation of a ten week course programme in marine law between July and September 1994 for twenty Indonesian public service lawyers between July and September 1994. As will be seen from these courses, many of the activities of the Centre will have a legal focus.

The Manager of the Centre is Commodore Sam Bateman who retired from the RAN last year. Other key players are:

Dr Ross Robinson, Associate Professor and Director of the Centre for Transport Policy Analysis in the Illawarra Technology Corporation. Dr Robinson, a former member of the UNCTAD team in Geneva and former Director of the Port Development Program in UN ESCAP, Bangkok, has had extensive experience in Southeast Asia. Dr

Robinson is regarded as Australia's leading expert in port development planning and policy. He is the joint director of the Centre for Maritime Policy.

- Professor Edward Wolfers, Foundation Professor
 of Political, Head of the Department of History
 and Politics, Coordinator of the Postgraduate Program in International Relations and joint director
 of the Centre for Maritime Policy. He has extensive experience in writing, teaching and consultancy on foreign and public policy in the South
 Pacific.
- Professor Martin Tsamenyi, Professor of Law and Director of the Centre for Natural Resources Law at the University of Wollongong. He has taught courses in international law and the Law of the Sea at the Universities of Papua New Guinea, Tasmania and Wollongong.

The Centre for Maritime Policy would be pleased to provide further information on any of its activities. The address is:

Centre for Maritime Policy University of Wollongong Locked Bag 8812 South Coast Mail Centre NSW 2521 Australia

(Ph: [042] 213224; Fax: [042] 264257)





AN ANI MEDALLION WINNING ESSAY

INDIA'S POST-COLD WAR MARITIME STRATEGY

AN ESSAY ON THE INFLUENCE OF ECONOMY AND EXTERNAL INTERESTS IN THE INDIAN OCEAN ON INDIA'S MEDIUM POWER STATUS

BY

LIEUTENANT COMMANDER C.S. MURTHY, IN

"...the medium power cannot neglect the preservation of its interests at sea nor the chance of safeguarding and promoting its more general interests by sea. Both these lines of strategy can be complex, subject to national choices; ...there will always be one restraining factor, particularly in the military aspect of strategy; the medium power's limited resources."

-R. Hill 1

ndia is the largest ex-colonial and developing power in South Asia. Post independence, its in terests in the Indian Ocean Region (IOR) were limited to territorial integrity and political independence. From 1947-1962, various leaders opined that the security of the country depended mainly on the security of the Himalayas and the sovereignty of the various buffer states in the north. The long anti-colonial struggle, under the aegis of the Gandhian policy of non-violence instilled a belief that former European colonial powers were tainted by war and that the new nations of Africa and Asia were a 'moral makeweight to restore the balance in the world'.2 Therefore, defence in India was conducted from a high moral ground and defence spending never rose above 2% of Gross National Product (GNP).3 This security edifice was eroded first by the Chinese aggression in 1962 and then by the Indo-Pakistan war in 1965. Defence spending almost doubled to between 3.5 to 4% of GNP by 1965 and a concentrated effort was undertaken by India to expand the capability of its forces.

The 1971 Indo-Pakistan war re-established India's confidence and superior position in the subcontinent. It now began to look towards the IOR for material and economic gains coupled with international status and influence. By the late 1980s, India was being referred to as a 'regional superpower'. Even the Pentagon assessed that India was on an upward trajectory in terms of its rise to power within the region.

This perception of her ability to mould her own destiny and safeguard her interests in the region placed her firmly in the club of medium powers with others such as Britain, France, Japan, China, Australia and Israel.⁴

In recent years, economic development pressures in the country have resulted in defence spending plateauing and even falling. With the demise of the Cold War, a major shift has also taken place in the economic, foreign and defence policies of countries both within and outside the region.

This paper seeks to examine India's maritime interests and external influences in the IOR in the post Cold War era. By studying these in relation to the development of India's economy and the effect of economic pressures on its defence spending, we can expect to understand its present thinking and examine its ability to maintain the status quo as a medium power.

INDIA'S INTERESTS IN THE INDIAN OCEAN

The Indian Ocean is the third largest ocean covering an area of 75 million square kms which includes the Arabian Sea, the Red Sea, the Persian Gulf and the Bay of Bengal. There are as many as 27 littoral countries in the IOR that are mostly under-developed and together form one of the most politically unstable and volatile regions of the world. India is the largest country in the north IOR with a coastline of 6300 kms on its mainland and about 1100 kms in its island territories. Its 120 island territories are mainly in two major groups: the Laccadives and Minicoy Islands in the Arabian Sea and the Andaman and Nicobar Islands in

the Bay of Bengal. The Andaman and Nicobar islands are only 145 kms from Indonesia but are 700 kms from the Indian mainland. India has 11 major, 20 intermediate and 100 minor ports scattered along its coastline and its 200 nautical mile Exclusive Economic Zone (EEZ) covers an area of 2.2 million sq kms which is approximately two-thirds the size of its entire land area.

India's EEZ is rich in hydrocarbons, minerals and living resources. Its offshore hydrocarbon resources could yield one billion tons of crude. Its premier oilfield, Bombay High, yields about one million tonnes annually and is expected to continue production for the next 40 years. The west coast of India itself has 570 platforms of which 176 have been brought into production. Twenty five percent of India's domestic oil consumption is met internally while the rest is imported. Rich offshore mineral deposits, located off the west coast and the Andamans, are valuable as India presently imports all its nickel and 60% of its copper needs. About 3.8 million tonnes of fish are currently harvested from its EEZ, but this area has the potential to yield up to 40 million tonnes of fish annually. India has also been assigned a pioneer investor status by the International Seabed Authority and was allotted an area of about 150,000 square kms in the South Central Indian Ocean in which it has the exclusive right to conduct activities leading to the exploitation of poly-metallic nodules.

Ninety percent of India's overseas trade (US \$ 41 Billion in 1990-1991), is via the sea. Its oil imports are mainly from the Gulf region and total to about US \$ 5.4 billion a month. It has a large merchant marine of over 439 ships totalling 6.4 million tonnes and there are over 100 ships in its waters on any one day.

Therefore, India's maritime interests in the IOR are primarily territorial integrity, protection of its trade and the unhindered exploitation of its offshore resources. As it cannot neglect the preservation of these interests, it wishes to pursue them through promoting regional stability which it feels is being violated with the presence and influence of powers external to the region.

EXTERNAL AND OTHER LITTORAL INTERESTS IN THE REGION

The importance of the region to external powers is centred in Persian Gulf oil as the region accounts for about 50% of the world's oil resources. The Indian Ocean also connects the Western Pacific to the Mediterranean and Atlantic theatres. Thus full access to this region permits unrestricted transit of commercial and naval shipping. Events in the middle east such as the fall of the Shah of Iran, the American Hostage crisis and the Soviet invasion of Afghanistan in the late 1970s were interpreted in most western alliance

capitals as posing a potential threat to the free flow of Persian Gulf oil. As a consequence, the US and its allies invested greatly in bases and ships to ensure their ability to project power in the region. The Soviet Union too behaved in a similar fashion, resulting in an arms race in the IOR.

During the Carter administration, American objectives in the IOR were to ensure access to an adequate supply of oil, resist Soviet expansion and promote stability and peace within the region. 6 Pakistan's strategic location, close to the mouth of the Persian Gulf, and its anti-Soviet orientation in the 1960s and 1970s made it a natural target for the furtherance of US interests. US military and economic aid to Pakistan steadily increased in exchange for use of its bases and the freedom to establish an anti Soviet monitoring base on the Pakistan-Afghanistan border. This triggered off a parallel arms race within the subcontinent between India and Pakistan. Though US aid decreased in the mid 1980s due to concerns of Pakistan's nuclear intentions, it spiralled from a modest US \$ 400 million in 1986 to US \$ 3.2 billion with the Soviet invasion of Afghanistan. This was in exchange for the use of Pakistan as a conduit for US arms supply to Afghanistan. With the end of the Cold War, US aid to Pakistan has been withdrawn because of Pakistan's intentions to pursue its nuclear program and because of the human rights violations within that country.

India viewed US naval deployments in the IOR, creation of the Rapid Deployment Joint Task Force, the construction of substantial defence facilities at Diego Garcia and US economic and military aid to Pakistan with concern. With the end of the Cold War, resisting Soviet expansion in the Indian Ocean is no longer a US security requirement. However, access to Gulf oil is still a paramount interest and was the crucial issue in the US led UN action against Iraq in 1991. Stability and peace in the region is still a necessary requirement for ensuring the security of the oil trade. However, economic pressures at home in the Clinton Government are forcing the US to withdraw its forces from the area. The IOR has become an interest it can ill afford and, therefore, the US appears to be pursuing an alternate means of ensuring stability in the region. Its present warming towards India has been interpreted by some to be a move towards this end.

France is the external state with the second most powerful force in the region. Its concerns relate primarily to the defence of the remaining French possessions in the western IOR, to its close security cooperation with several littoral and island states, its general concern for the security of Persian Gulf oil and the free flow of associated shipping. British concerns in the IOR and the Persian Gulf largely parallel those of the United States. Therefore, both France and the United Kingdom maintain substantial forces in the region. ⁷

China does not appear to have any overt interests in the IOR. However, its assistance to Myanmar in the build up of naval facilities and forces worries India. China is the major supplier of military equipment to Myanmar and is reported to be involved in the construction of a new naval base at Hanggyi Island, at the mouth of the Bassien river, and the development of existing naval bases at Settwi, Mergui and the Great Cocos Island.8 With China being the main source of naval hardware for Myanmar, India's worry is that Myanmar's China link could involve increased Chinese presence in the Bay of Bengal and the Andaman Sea. The development of radar facilities at the Great Cocos Island would also provide Myanmar, and through it China, with a capability for monitoring the Andaman Sea and the Malacca Straits.

Australia is a close western ally and an Indian Ocean littoral state. It maintains a national as well as an allied interest in unhindered access to Persian Gulf oil and the free flow of international shipping through the region. Because of its proximity and its possession of significant Indian Ocean island territories, Australia maintains an enduring interest in strategic developments in the region. Australian P-3 Orion long range maritime patrol aircraft operate routinely from its west coast bases, the Cocos Islands and the Butterworth airfield in Malaysia on IOR patrols.

The other littoral countries of the IOR are mainly interested in the stability of the region so as to be able to pursue their economic development programs. Only Indonesia and South Africa have well developed skills and expertise in the fields of marine affairs and ocean management (albeit to a lesser extent than Australia and India) with which they wish to pursue a cognisant program for offshore resource exploitation. 10 Most South Asian and South-east Asian countries have recognised India's unique position in the IOR and its leadership role in the non-aligned movement. However, they have also been critical of its stance on some regional and international issues that are of concern to them. India's alleged high-handedness in settling its differences with its smaller neighbours and its occasional big power attitude have not endeared it to the region. However, its willingness to use military force for power projection (Sri Lanka in 1987, the Maldives in 1988) has not been a cause for alarm but, instead, been viewed as a stabilising factor in the region.11

In the post Cold War era, the major destabilising factor in the IOR, apart from the political and internal instability of individual littoral countries, appears to be the long drawn impasse between India and Pakistan on territorial and regional issues. The major issues being the territorial dispute over Kashmir and the alleged involvement of Pakistan in terrorist activities in the Indian states of Punjab and Kashmir. ¹² The US and its allies have also expressed concern over

regional instability being perpetuated by the proliferation of nuclear weapons. Both India and Pakistan are not members of the nuclear Non-Proliferation Treaty (NPT). Though Pakistan has indicated willingness to sign the treaty if India signs, India wants to retain a nuclear option against perceived threats from China and Pakistan. ¹³

Pakistan's close relationship with China in the last three decades is also an Indian worry. China openly supported Pakistan's cause in the 1971 Indo-Pakistan war and is also a major source for its military hardware and missile technology. However, improved Sino-US and Sino-Indian relations in a post Cold War era have altered China's support for Pakistan substantially. Though sale of Chinese arms to Pakistan has not stopped, China has made it quite clear that she would not stand by Pakistan in a conflict. This has caused Pakistan to now turn to South West Asia for support. Even though differences between India and Pakistan continue to exist, their attention is currently focused on internal pressures of economic development.

INDIA'S ECONOMIC CRISIS

India's present economic crisis can be best understood if the history of its economy is examined briefly. For the first three decades following independence, India consciously sought to build a mixed economy. One of the main objectives of a general economic policy was to redress the weaknesses inherent in a developing economy with a poor capital and infrastructure base. Public investment, supplemented by private investment, laid the foundations for the growth of indigenous business enterprise.

India's protected industrial sector thrived during the 1960s. However a series of poor monsoons, two wars with Pakistan, one with China and rising social and political discontent within the country curbed productive investment leading to a deceleration in the growth of industrial production throughout the 1970s. To adjust to this low growth phase and in response to pressures from new business groups (both domestic and non resident Indians), a series of policy changes were carried out from 1978-79. This liberalised the economy, making production for exports, rather than for internal market, relatively profitable. However, the rise in the cost of petroleum on the world market in 1979 forced the government to revert to a more regulated economy until the next phase of liberalising was implemented in 1985-86.

Compared with the low economic growth of the 1970s (average 3.5%), the 1980s witnessed moderate to high growth with an average annual GDP growth rate of 5%. This was due to a steep increase in public expenditure and investment, with the government taking no measures to protect itself against excessive lev-

els of borrowing both domestically and internationally. India's excellent sovereign credit rating allowed it easy access to global financial markets in the late 1980s and both short and long term debts were rapidly accumulated.

With the high accumulation of debt, the burden of debt servicing and the absence of adequate growth in exports, India's economy and credit rating began their decline in 1990. By mid 1991, its rating fell from the highest ranking to below investment grade and foreign-exchange reserves decreased to less than US \$ 1000 million. Faced with the risk of default, the government imposed draconian import control measures, borrowed extensively from the IMF and devalued the rupee by 20% in July 1991. A series of liberal economic reforms were also introduced including the partial convertibility of the rupee and the Government committed itself to reducing the overall fiscal deficit from almost 9% of GDP in 1990-91 to 6.5% in 1991-92 and 5% in 1992-93. 14 However, the effect of economic development pressures did not leave its defence spending unscathed.

THE EFFECT OF ECONOMIC PRES-SURES ON INDIA'S DEFENCE SPEND-ING

Defence spending in India, as in other countries, has been directly affected by economic pressures. In the 1970s, it remained almost constant at the pre war level of between 3% to 4% of the GNP. With economic reforms in the late 1970s and mid 1980s, though the percentage figure varied only marginally, in real terms defence expenditure increased with the GNP. The perceptible peak in defence spending in the late 1980s was in direct response to the exponential increase in US economic and military aid to Pakistan. In 1989-90 it plateaued due to economic pressures and the devaluation of the rupee and, though the percentage figure of defence spending remained almost constant, in real terms it actually decreased.

The defence budget in the last two years has seen cuts of 5% in 1991-92 and 5.3% in 1992-93. Although the foreign exchange component still constitutes about only 12% of total defence spending, scarcity of foreign exchange is a significant restraint in the purchase of foreign sourced weapons and hence on the program of military modernisation. Growth in manpower levels of the regular and paramilitary forces in the 1970s and 1980s and the subsequent rise in the real cost of a full time member of the armed forces by about 70% from 1981 -82 to 1991-92 has also impacted upon the finances available for modernisation as pay and allowances constitute 30% of defence spending. ¹⁵

India found its world turned further upside down with the demise of the Cold War. Its US \$10 billion arms agreement with the USSR, which allowed it to repay loans at a concessionary interest rate of 2.5% in Indian Rupees and in Indian products, was valid until 1997, but ended as the Soviet regime vanished. Therefore, India was forced to make deals for the supply of spares with private companies and independent republics in the old Soviet Union. These agencies are demanding repayment in hard currency which India can ill afford in its present economic state. However, with some back breaking work in indigenisation of spares and pursuance of contracts with the old Soviet Union, India appears to have regained control on a major part of its spares resupply problems for the present.

The Navy's share of the defence budget which was about 11% in the 1960s rose to about 12.5% in the early 1980s. By 1987 it was about 13% and by 1988-89 it rose to 14%. The Navy's ambition was to control about 16% of the defence budget by the mid 1990s and around 20% by the first decade of the 21st century. However, the adverse economic environment in the country resulted in the reduction of the Navy's share to 13.2% in 1991-92.16

Given the task of safeguarding its maritime interests in the IOR, the Indian Navy has grown from a small force of a few ships in the 1950s to a comparatively much larger and more formidable force in the 1990s. The Indian Coast Guard too has grown in the 1980s to a moderate strength of 47 vessels and about a dozen aircraft. However, the combined strength of the Navy and the Coast Guard is inadequate to safeguard Indian interests in the IOR, even when its 'reach' is limited to the extent of its EEZ. ¹⁷ This has been further compounded by the age of a major portion of its assets which will require replacement or modernisation in the near future

THE WAY AHEAD

As India moves into the next century, its maritime interests in the IOR are not likely to reduce. Therefore, it would need a well balanced navy with a more sophisticated mix of weapons and sensors than it has today. The size of the navy required to meet India's needs and the necessity of a moderate blue water capability have been debated at length both within and outside the country and, therefore, will not be discussed here. But, the bottom line is that should India want to maintain even its present capability, then it will have to find the necessary resources for modernisation or replacement of its assets. This is no mean task in a poor economic environment.

Presently, efforts in the three services are being directed towards optimising existing manpower and reviewing establishment levels so as to release funds for modernisation. The army's 1.2 million standing strength and an equally large paramilitary are, therefore, targets for review. Lack of modern technology, the availability of cheap manpower and unemployment have made the army, and to some extent the other two services, manpower intensive. Thus, drastic cuts in manpower levels to release sufficient funds would be at the risk of a reduction of capability and further increases in unemployment levels in the country.

To reduce its heavy dependence on foreign sourced weapons and conserve valuable foreign exchange, India embarked on a program of defence industrialisation in the mid 1970s. Today its large defence industry is capable of producing military hardware with a reasonable level of sophistication. But, compared to what is available elsewhere in the world, there is still room for improvement in quality and sophistication. With an adequate infusion of technology India's defence industry will be able to sustain not only its own requirements, but could help generate valuable foreign exchange from arms transfers within the region. Technology transfer to India during the Cold War was kept at a minimum by western allies who were afraid that it might be passed on to the Soviet Union. With the demise of the Cold war, this restriction is slowly being lifted.

As drastic reductions in defence manpower levels are not fruitful and its own industry is inadequate for its defence requirements, India will have to look towards the development of its economy to provide necessary funds for its modernisation programs. But, to be able to pursue an unhindered economic expansion program, it will first have to reduce threats to both external and internal stability to the lowest levels. One means of doing this is to build on its emerging relationship with the United States and its allies.

A positive Indo-US relationship would be able to draw the US further away from Pakistan and would also reduce the threat from China. Since most of its internal problems have been generated by the interference of Pakistan in Punjab and Kashmir, and the outcomes of past poor economic policies, such a relationship would also assist in improving internal stability through economic progress. A meaningful reduction in the level of its regular and paramilitary forces could also be achieved in a potentially low threat environment.

However, there are many issues which force a modest pace to the development of Indo-US relations, the major ones being India's nuclear and space technology programs and the issue of fair trade. Fair trade practices such as patents, trade barriers and copyrights will continue to be imposed on India. These would only receive total acceptance if the west respects the Indian requirement of a self sufficient and labour intensive industrial sector and its fear of re-dominance after a long period of alien rule. The nuclear issue is another problem. India's reservations in becoming a member of the NPT are likely to continue until the threat environment in the IOR substantially reduces and external interests in the region are not seen as being detrimental to its own interests. However, in the interests of regional stability and the pressing requirement of economic development, some sacrifices in interests and policies will probably be made for the mutual benefit of all concerned.

It must be remembered that India propagated nonalignment in a bipolar environment. Though this does not have much relevance in a predominantly unipolar world, it is unlikely that India will place all its eggs in one basket but may prefer to spread them around as best as it can. Its interests, therefore, in closer relations with the economic tigers of south-east Asia cannot be overlooked.

Whichever course India chooses to pursue for economic progression it would find acceptance. Therefore, though the black clouds of its internal security problems and poor relations with Pakistan loom large, economic progress should be achieved in the favourable environment produced by the demise of the Cold War. The rate of progress, however, will depend on its ability to strengthen its relations both within and outside the region.

CONCLUSION

India's interests in the IOR are primarily maritime. Its inherent superiority and stabilising influence in the region are gaining acceptance both at the regional and international levels. Though its present economic crisis has impacted on its ability to pursue force modemisation and expansion plans, it has been largely offset by the favourable economic and diplomatic atmosphere created with the demise of the Cold War. Opportunity is now available for it to cement stronger relations with the west and south-east Asia and pursue a policy for the improvement of its economy. With efforts being made on all fronts to overcome present irritants, the technology transfers likely to result from closer cooperation with the US and its allies should open avenues for economic progress and through it, force modernisation and defence self reliance.

Though interests of the West in the IOR will continue to exist, they are likely to be reduced and restricted to the Persian Gulf region. Reduction of US strategic interests in Pakistan is in India's favour and should help diffuse the volatile situation in the subcontinent. Similarly, reduction in Chinese support to Pakistan would also benefit stability issues in the subcontinent. Growing Chinese interests in the region, however, are a cause of concern to both India and the west and therefore would be watched carefully.

Thus, though India had much to lose in the demise of the Soviet Union, it has much to gain in a favourable post Cold War era. With the resilience and determination to promote its economic interests that it has demonstrated since independence. India is likely to emerge as a cognisable power within the region and, therefore, will continue to retain its membership of the medium powers' club.

- 1. Hill J. R. Maritime Strategy for Medium Powers, Croom Helm, London, 1986, p 219.
- 2. Jawaharlal Nehru as quoted in Gupte P. India: The Challenge of Change, London, 1989, p 317.
- 3. Babbage R. and Gordon S. (Ed) India's Strategic Future - Regional State or Global Super Power, Macmillan, London, 1992, p 8. 4. Hill J.R. op cit, p 22.
- 5. Babbage R. and Gordon S. (Ed), op cit, pp 154-156.
- 6. Young P.L. 'The United States Navy, The Indian Ocean and the Politics of World Wide Command in a Post Cold War World', Asian Defence Journal, April 1993, p 7
- 7. For details of forces maintained by France and UK in the IOR see The Military Balance 1992-93. The International Institute for Strategic Studies, Brassey, London, 1992, p 43 and p 64.
- 8. Janes Defence Weekly, 12 September 1992, p 3 1.
- 9. For a discussion of Australia's Indian Ocean Maritime Strategy see Bateman S. 'The Indian Ocean in Australia's Maritime Strategy', Maritime Studies, July - August 1993, pp 11 -16.
- 10, ibid, p 13
- 11. For a discussion of South Asian and Southeast Asian perceptions of Indian maritime strategy see Habib A.H. 'An Indonesian View of India's Strategic Development' Babbage R. and Gordon S. (Ed), op cit, pp 107 - 121.

- 12. For a discussion of India's relations with Pakistan see Sharma V.N. 'A Glimpse of the Threat Perception and Security Environment of India', U.S.I. Journal, July-September 1991, pp 286-295 and Sharma V.N. 'India's Security Environment'? U S.I Journal? October-December 1992, pp 430-436.
- 13. For details of proliferation of nuclear weapons in the IOR see 'Indian Ocean De Facto Nuclear Powers', The Indian Ocean Review, September 1993, p 13. For Western views on the proliferation issue see Babbage R. and Gordon S. (Ed), op cit, pp 163 - 165.
- 14. For a discussion of India's economic development see Baru S. 'Indian Economy', Regional Surveys of the World: The Far East and Australasia1993, 24th edition, Europa Publications Limited, London, 1992, pp 286-293
- For details on India's defence spending see Gordon S. 'Treading Waters in the Fiscal Deep', Asian Survey, 10 October 1992, pp 934-950 and Joshi M.K. 'Directions in India's Defense and Security Policies', Babbage R. and Gordon S. (Ed), op cit, pp 76-80.
- 16. Gordon S. 'Can it Consolidate?', Asia-Pacific Defence Review, Annual Reference Edition, 1993, p.61.
- 17. The definition of reach here has been taken to be as in Hill J.R. op cit, p 149.





A TALE OF TWO NEWCASTLES

by

COMMANDER P.L. ELLIOTT, RAN

was privileged on 11 December 1993, to attend the commissioning of HMAS Newcastle. This was only the second such ceremony I had attended in my 27 years in the Navy: the other was in 1978 when, as a young Lieutenant on exchange with the Royal Navy, newly graduated as a PWO (G), I had presented the commissioning guard of HMS NEWCASTLE to the then First Sea Lord, Admiral of the Fleet Sir Michael Pollock, GCB, MVO, DSC, for his inspection.

As I sat with the other guests on Lee Wharf on 11 December, basking in the 25 degree sunshine and awaiting the arrival of the VIPs, I cast a critical eye over the guard and assembled ship's company of Australia's Newcastle — how did they compare with my Newcastle?

Well the weather was a marked change for a start. We had commissioned on a cold grey March day in Portsmouth. The UK was still recovering from a winter that had left large tracts of the country under snow, and the effects of an Arctic wind were still being felt, despite it officially being Spring. You could hide an awful lot of clothing under your '5s' but my hand, flexing and alternately relaxing around the handle of my sword, felt like a block of ice which threatened to clatter to the pavement in front of the distinguished guests. And were the tremors which found their way to the tip of my blade nerves, or were they caused by hypothermia?

I had joined NEWCASTLE in January 1978 as she was completing fitting out at Swan Hunter's building yards in Newcastle-Upon-Tyne in England's northeast. I caught a train from Kings Cross station in London which had arrived from the north still bearing accumulated snow from its journey. To a sun-loving Aussie this did not bode well for the future. My fears were well founded as the snow cover increased rapidly as we travelled north until the train, ultimately bound for Edinburgh, ground to a halt at Newcastle station, unable to complete its journey because of snow drifts on the line. That blizzard had also frozen all the points on Newcastle's domestic line and laid waste any form of vehicular traffic in the city. Thus it was I found myself walking up the centre of the main street of Newcastle, my footsteps flanked by the furrows in the snow from the two suitcases I was carrying, searching in the failing light for a hotel to spend the night. Siberia couldn't have looked less hospitable.

With some of the snow cleared, next morning I was able to find my way to Wallsend (so called because it marks the end of Hadrian's Wall) and the shipyard. It took some time to find the ship's office in the yard but eventually I was ushered into a warm building where I attempted unsuccessfully to dry out my snowsodden shoes and restore some circulation to my feet. I met the rest of the officers after which the First Lieutenant took me to meet the Commanding Officer, Captain J. J. R Oswald. He welcomed me on board and we exchanged the usual pleasantries, but I was just about to leave his office when the hammer blow fell - "Of course you realise Elliott, that I too am a Gunnery Officer?" And with those ominous words ringing in my ears, I was issued with a hard hat and escorted to the ship.

The Wallsend Yard was enormous and it took some time picking our way around buildings and through the entrails of ships before we rounded a final corner and there before me lay *Newcastle*, third of her class of Type 42 Guided Missile Destroyers, shining in her new coat of paint, flanked by the carcasses of her yet to be completed sisters, *Glasgow* and *Cardiff*. When the building program completed some years later, the Royal Navy was to have more Type 42s than the RAN had DDGs and FFGs combined.

There are many similarities between Newcastle-Upon-Tyne and Newcastle-Upon-Hunter, the weather not being one of them. Both are industrial cities with strong maritime traditions, their people are strongly supportive of their Navies and warm in their generous hospitality. The accent (more a local dialect) of the Geordies, however, was initially unintelligible to me. It was the custom of the RN when first commissioning a ship with a place name to man the ship with a crew from that town or city. I found myself then with a division of about 30 men who, when talking amongst themselves, could have been speaking Swahili for all I knew, and it made for an interesting few weeks as we learned to communicate with each other - my accent and sayings were equally foreign to them. Geordies, like Novacastrians, enjoy a warm beer on a cold day (or the other way round, depending on the hemisphere) and Newcastle-Upon-Tyne was home to the Scottish and Newcastle Brewery, purveyors of a particularly noxious dark beer called Newcastle Brown (pronounced "broon") Ale. My taste buds, attuned to the finer light ales of Australia, never did adjust to this molasses coloured brew which, to the unaccustomed constitution, is a particularly good purgative. Like Australia, beers are a regional thing, and knowing what to drink can be a problem. Imagine my reaction on breasting the bar at the Station Hotel in Whitley Bay for the first time when the patron next to me ordered a pint of Scotch. I had heard that Geordies could drink but this I had to see. I was disappointed when a pint of Scottish and Newcastle pale ale was produced for him, but I had learned an important catch cry and from then on my drink also became a pint of Scotch.

When we arrived in Portsmouth, we set about planning the commissioning ceremony and training the guard. On the way South I had selected them from the ship's company based on size and appearance - a tall, fit guard always impresses. Shortly after arrival I took them to the Gunnery School at Whale Island where, under the watchful eye of the Gunnery Instructors, we could perfect our drill. After falling in on the Parade Ground, CPOGI 'Biff' Elliott (whose name and face are emblazoned indelibly upon my memory) invited me, in his gravelly voice so typical of GIs, to "show me what you can do wiv 'em, Sir. Bring the Guard to the Present." I had not taken charge of a Royal Navy guard before but they were using the FN rifle, similar to the SLR, so I presumed the drill would be the same. "Guard, General Salute, Preeesent Arms", my voice echoed around the hallowed grounds of Whaley. Up, two three, cut, two three, my sword described the sweeping arc of a well performed sword salute. 'Crunch' came the final movement of the Guard - a perfect three seconds after I had finished. The RN drill was modelled after that of the .303 and contained three movements, not two like the Australian drill! There was a pregnant silence as Chief Elliott filled my face with his. He spoke not a word but quietly removed the sword from my hand and, having taken a rifle from one of the guard, thrust it at my chest in the high port position. "Once round the island, Go!" he roared, his scarlet complexion and the throbbing veins in his neck adding emphasis to this customary order to all offenders of gunnery protocol at HMS Excellent. The perimeter of Whale Island is a mile or so which gave me ample time to reflect on the intricacies of rifle drill in the Royal Navy. In any case, I did not err a second time and my guard was favourably commented upon by the First Sea Lord.

On commissioning day, after HMS Newcastle was formally inducted into the Royal Navy and before we marched onboard, we all sang 'The Blaydon Races' which, to the Geordies, is something akin to an anthem. This phenomenon was to be repeated later in the commission when we returned to Newcastle for the Freedom of the City and marched some three miles through the streets singing at the top of our voices and being joined by the crowds who lined the way.

"Oh my lads, you should have seen us gannin' All along the Scotswood Road, just as they were stannin' All the lads and lasses there, all with shinin' faces Gannin' along the Scotswood Road, to see the Blaydon Races."

After commissioning, Newcastle seemed condemned to an interminable period of trials in and around Portsmouth and Portland. The ship had a number of systems which differed from her previously commissioned sisters, Sheffield and Birmingham, and we had the impression that Captain (Trials) was committed to test them to destruction. Just as we were about to reach the end of our tether, however, we were allowed off our short leash for a long weekend in Bayonne, a small French port in the Bay of Biscay which is twinned with the Spanish city of Biarritz, just across the border. The occasion was the Fete de Bayonne.

Newcastle arrived in Bayonne on a Friday and, having prepared the ship for our stay, leave was granted. It was decided that Bayonne should be a "rig-run", that is, sailors proceeding ashore should be in uniform. The Fete De Bayonne is more an Hispanic rather than a Gallic festival as there is a strong Basque influence in the town. Bull running, bull fights and allnight dancing in the streets were major aspects of this celebration, and the local red wine was freely available for about 40 cents a bottle, if one needed to pay at all. This was our first overseas port visit and the ship's company joined in the celebrations with gusto. Testimony to the effort they put into creating a good impression with the locals was that liberty men returned throughout the first night variously attired in red and white striped shirts in lieu of their white fronts and their caps were replaced by red or green berets. The policy of sailors having to wear uniform ashore was persisted with through Saturday and again produced some startling assortments of rigs returning on board. With the number of whole uniforms dwindling rapidly, the policy was abandoned on Sunday and civilian clothing was allowed ashore. When it came time to sail on Tuesday morning, however, it was quickly discovered that virtually every cap onboard was now being worn by a member of the local populace. Not to be deterred from sailing in Procedure Alpha with the majority of the ship's company on deck, Captain Oswald ordered berets to be worn - green to starboard, red to port. Being the PWO of the Starboard Watch I donned my green beret and fondly bid farewell to Bayonne, one of the more memorable ports we visited.

I completed eighteen months in HMS Newcastle when the ship returned to Portsmouth in mid-1979 after a three-month South Atlantic deployment as a member of the 6th Frigate Squadron (or 6th Frigate and Destroyer Squadron as Captain Oswald always insisted). He departed the ship in Rio De Janeiro and eventually rose to become Admiral Sir Julian Oswald, GCB, First Sea Lord. Before leaving, he debriefed his officers and individually presented us with our 'flimsies',

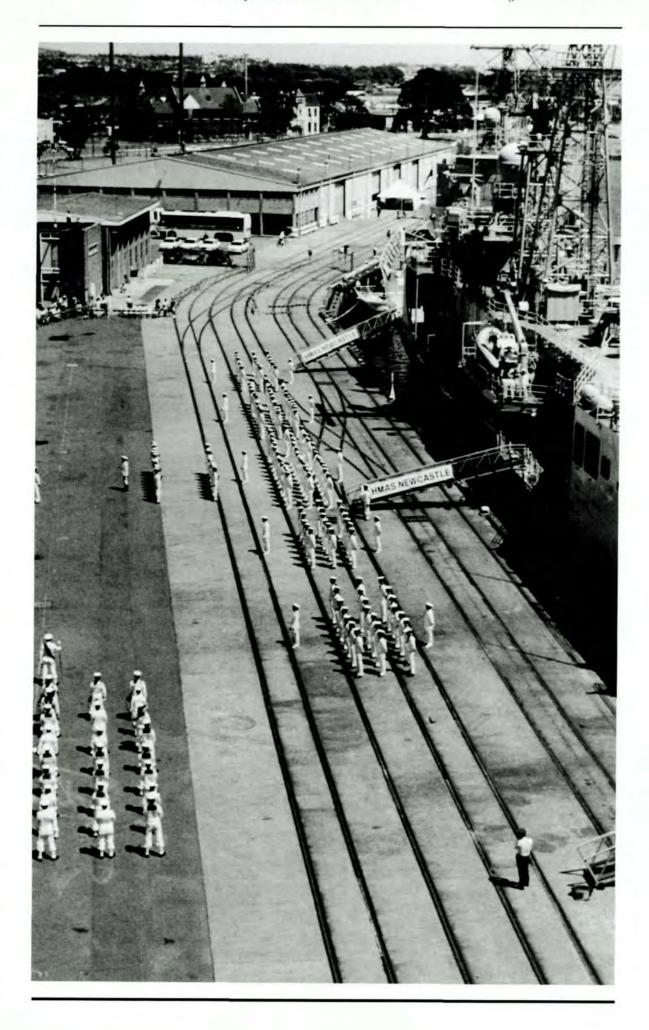
the synopsis of our confidential reports. When he had given me mine he reminded me of the day we had first met in Newcastle. It was then he confessed, chuckling to himself, that although he was a Gunnery Officer, he had specialised in Air Weapons and had not fired a gun in anger since his Long Course in the early fifties!!!

Ah, yes. How time flies. The Maritime Commander, CNS, CDF and the Lord Mayor arrived, followed by Minister Ray who received the salute of a very smart HMAS *Newcastle* guard which presented F88 Steyr rifles, a far cry from the FN or SLR of old. A wel-

come north easterly sea breeze kept us cool as Commander Rowan Moffitt read the commissioning order to the ship's company, invited guests and the spectators from her namesake city. Newcastle was blessed, the ensign stood stiffly in the breeze and the ship's company marched onboard, the last man taking his place at the rail as the sound of the band died away, and the ship began a life of service in the best traditions of the RAN and the name of Newcastle. I felt as proud of this ship as I was of the other. And I wondered as I sat there, how many other people in the RAN have attended the commissioning of two ships of the same name while still serving?



HMAS Newcastle (Type 42 Destroyer)



BOOK REVIEW

"Australian Dictionary of Biography", Volume 13, 1940-1980, A-De; General Editor, John Ritchie; Melbourne University Press, 1993 628 pp, \$59.95.

"Few things interest readers more than a glimpse of other people's lives and personalities. Obituaries offer examples, mostly good. They reflect our strengths ... (and) our weaknesses too." (David Bowman, "24 Hours", May 1994, p. 90). 1993 saw the publication of the latest ADB volume, described above, entering a new historical period covering initial selections from the Second World War up to 1980. Those people included came to prominence in those forty years of our young history.

The ADB has slowly become a cultural icon quietly emerging from its hitherto 'academic' closet into the mainstream of contemporary Australian literature. It is not one more book in the burgeoning field of Australian studies. Indeed, it has become the bookend of Australian society as we know it. These are our heroes and villains who are of us and are us – Australians all, or figures whose lives were part of the historical tapestry of our great land. The only difference is that they have met one criterion, death, and never saw the completed entries. For that reason, the individual contributors have been granted open season on their lives.

This volume is attractively published with a portrait of a young woman on the cover. As the publishers have broken with an earlier tradition of plain buff covers, the choice of a female is particularly apt considering the predominance of males featured to date. In this aspect, the ADB is not without its critics. Marianne Cutlack approached the series from a feminist perspective in a review in the "Weekend Australian" last year. While she selectively makes her point. as any attempt at deconstruction allows, she had enough grace to emphasise the strengths of the work. In her words "... the ADB will remain a sound reference work. In this short review, justice is not being done to the many informative and enjoyable contributions by the large network of authors who give their service voluntarily".

The ADB is not anti-history or even alternative history. It cleaves towards many histories from those individual authors as they portray their subjects. For once this series attempts to capture the Australian psyche. Winners and losers, the good and the bad, the famous and the infamous – moreover, real Australians ordinary or distinguished. The book reveals the motivations of those Australians describing their

weaknesses and strengths which made great individuals ordinary or ordinary people great.

Those interested in the genesis of the ADB can turn to many sources. Possibly the most informative is Penelope Layland's article in the National Library of Australia "News" of September 1993. The "ANU Reporter" has also given prominent coverage to the project. The work is also gaining international recognition and it has been highly praised in the "Times Literary Supplement" following the release of the tenth volume. Thanks to the ADB, concerned readers are also demanding of their quality newspapers that obituaries are an important editorial responsibility. Recently, "The Australian" has recognised the historical importance of obituaries in the recording of news.

Significant political figures are assigned to accomplished writers – experts in their field. Bill Hudson's entry on Lord Casey is one case in point. In less confident hands, the results would have been apparent. There are many politicians entered but surprisingly, few diplomats are mentioned, although Bowden is one of them. The conspiracy theorists among us would be heartened by inclusions of several people who kept in the background but whose contribution remains of lasting interest to many Australians. Those entries might include journalist Dalziel, administrator Conlon, broadcaster Cousens, speculator Becker, correspondent Bennetts and soldier Cawthorne. They too receive their day in history.

Good obituary can be fun as some of the better London papers daily attest. The "Weekly Telegraph" (129/94), in its treatment of General Christison noted that one (Ensign) "...Wolsely's policy for advancement was to try to get himself killed at every opportunity". Rather drastic but it puts a new light on over-achievers in the forces. "The Times" though is on its own in obituary handling. See "The Times Obituaries 1992", as edited by David Heaton and John Higgins. The book notes that "... here is contemporary social history; in these pages, the saints lie down with the sinners".

Readers of the journal are obviously interested in naval entries and they will not be disappointed for the many selections. They can be summarised as follows; Becher (Frame), Buchanan (Goldrick), Cousin (Hinchliffe), Crace (Coulthard-Clark), Dalton (Hinge), Davies (Bennet) and Dechaineux (Peek). All are well-written and thoughtful, demonstrating that the authors made a real attempt to determine what made them tick and why they achieved notoriety in their profession. It is though disappointing that the more senior

officers, admirals themselves, who may have served under these figures did not take the challenge and write on them. But this in no way detracts from the standard achieved by those junior officers who were prepared to write on personalities they had never met in their life.

This review could not do justice to the many entries included. That should be left to the reader as he or she works through the various professions represented – including actors, clerics, judges, medical practitioners, public servants, scientists and workers. As Alistair Cooke rightly says "... here is plenty, for anyone who has the honesty to admit that next to oneself nothing in life is more interesting than other people's lives. Especially when they're over." The volume is not designed to be read in a single sitting but dipped into at leisure. For that reason, it would make a good gift for someone who may have shared the same years as the figures under review.

The writers spare no punches, giving their opinion free of any threat of libel action. That allows for some harsh words and few are spared. We learn that one retailer joined the AIF on the last day of World War I. Davies had a reputation as "...the world's rudest and worst tempered woman". Conlon's "... judgement was on occasions seriously flawed". Dease was "... a very spoiled and lazy boy ... always reading ... (and had) ... a clever and mischievous tongue". Becker " ... severed connections with their only child because she had married a naval stoker against their wishes". David Bowman, noted above, adjured of us " ...let us have obituaries that avoid both reverence and censoriousness, reflect some intellectual rigour, and convey that, well, whatever you may think of it all, this is the human condition." And the ADB does just that. Bravo Zulu to Professor John Ritchie and his crew .

Michael Fogarty

COMMODORE FARNCOMB'S CAREER 7 JAN 1945

Commodore (First Class) H. B. Farncomb was one of the original term of cadet-midsnipmen at the RAN College in 1913. He was the first graduate of the college to reach the rank of captain when, in 1937, he was promoted to that rank. The only senior RAN officer to be a graduate of the Imperial Detence College, Commodore Farncomb has served many terms of exchange with the Royal Navy. At the outbreak of war he was in command of HMAS Perth, and some months later commanded HMAS Canberra. He was in command of HMAS Australia for more than two years from December, 1941, during which time he took part in the battle of the Coral Sea, the landing at Guadalcanal, the



COMMODORE FARNCOMB

battles of the Solomons, and the landings at Arawe and Cape Gloucester. He was awarded the DSO, and was also Mentioned in Despatches during 1942. At the time of his promotion to commodore (first class) he was commanding officer of the escort aircraft carrier HMS Attacker, and in this ship took part in the invasion of Southern France. He succeeded Commodore Collins as Commodore Commanding the Australian Squadron when Commodore Collins was wounded last October. Commanding officer of HMAS Australia in the action was Contain the

Commanding officer of HMAS Australia in the action was Captain J M Armstrong, RAN, who like Commodore Farncomb, entered the RAN in 1913 with the original term of cadet midshipmen. Since 1918 he has been continually at sea with the Royal Navy and Royal Australian Navy, earning promotion to commander in 1935, and to captain at the end of 1942. He was appointed in October to the command of HMAS Australia when the former commanding officer. Captain E. F. V. Dechaineux died of the wounds received when a Japanese plane crashed aboard the ship.

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ALLICA	FA	CMDR	93	COMMONS	BM	LCDR	94	FURLONGER	SG	LEUT	96
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ANDREW	MK	CPL	94	COOK	IR	CMDR	95	GARNER	WF	CMDR	93
ARNOLD	JP	MR	97	COONAN	DJ	LEUT	94	GASHLER	PB	CDRE	93
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ATKINSON	AJ	LCDR	94	COOPER	AJ	SBLT	94	GAUL	DJ	MR	95
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BAKER	AR	CMDR	96	COULSON	PK	CMDR	94	GEORGE	FG	CMDR	95
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BARNES	PD	LEUT	94	CRAIG	AH	CAPT	94	GILLBANKS	RJ	CAPT	96
BARNES	MS	LCDR	93	CRANSTON	F	MR	94	GILLIES	JH	LCDR	95
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BARRIE	CA	CDRE	96	CRICKARD	F	RADM	99	GOLDRICK	JVP	CMDR	94
BARTON	JB	CMDR	93	CULLEN	ST	LCDR	95	GOOD	EV	CMDR	95
BARWOOD	OS	CMDR	95	CULLEY	OF	CMDR	94	GOODRIDGE	LW	CMDR	93
BATEMAN	WS	CDRE	94	CUMMINS	AR	MR	95	GOOGE	AF	LEUT	93
BAYLISS	GJA	RADM	95	CUNNINGHAM	RW	CMDR	94	GORRINGE	BK	CMDR	93
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BELL	DN	CMDR	95	DAGWORTHY	RG	CAPT	94	GREIG	KJ	CAPT	95
BERLYN	NR	RADM	94	DALE	CJ	MR	95	GRIERSON	KW	CMDR	95
BEVERIDGE	PA	CAPT	94	DALRYMPLE	HH	MR	95	GRIFFITHS	RD	LCDR	96
BIEGA	MT	MR	93	DALTON	DJ	CAPT	93	GRIMORD	DL	CMDR	94
BIRD	JD	LCDR	93	DANIEL	NG	CAPT	94	GROVE	EJ	MR	94
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HORGAN	TJ	CAPT	95	MAYNE	GF	BISHOP	95	QUINN	II	LCDR	94
HOROBIN	PW	MR	95	MCCABE	JF	CMDR	93	RALEIGH	JL.	CAPT	95
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HUDSON	MW	ADML	94	MCCORMACK McCOURT	MG	LEUT	93	RAYMENT	MB	CDRE	94
HUDSON	ML	LCDR	95	MCDONALD	NE	RADM	95	RAYNER	GR	LEUT	94
HUDSON	PR	LCDR	94	MCEWAN	JC	LCDR	95	READ	BJ	CAPT	95
HUGHES	Ol	RADM	96	MCGRATH	KA	LCDR	93	REHN	P	MR	93
HUGONNET	PJ	CAPT	93	MCGUIRE	KM	MR	93	REILLY	D.P	CMDR	94
HUMBLEY	RR	CAPT	95	McGUIRE	PF	CAPT	95	REISCH	K	DR	95
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HUNT	PJ	LCDR	95	MEAKIN	PT	CMDR	93	ROBERTS	LI	CMDR	94
HUNTER	IA	RADM	96	MELLIAR-PHELPS	M	MR	95	ROBERTSON	BD	CAPT	95
HUXTABLE	CJ	SBLT	94	MENGKO	YF	COL	94	ROBINSON	GA	CMDR	93
JACKSON	RT	CMDR	96	MILLER	DD	CDRE	94	RODRIGUEZ	RP	CAPT	93
JACOBS	J	CMDR	94	MILLS	CA	LCDR	95	ROSE	DC	LCDR	94
JACOMB	WR	MR	93	MITCHELL	AG	MR	94	ROSE	GA	CDRE	93
JEMESEN	RM	CMDR	95	MITCHELL	PS	CAPT	93	ROSSER	MA	CMDR	93
JEPPESEN JEREMY	1C	LCDR MR	94 94	MOFFITT	RC	CMDR	93	ROURKE ROWE	WJ	CAPT	95 94
JERVIS	GE	CDRE	95	MONEY MOORE	WH EM	CAPT SBLT	95 95	ROWLEY	BL SM	CMDR	94
JOHNSON	MA	MR	95	MORGAN	KD	LCDR	94	RUSSELL	JRS	MR	95
JOHNSON	RJ	CMDR	94	MORGAN	TJ	CMDR	93	RUTING	TB	CAPT	95
JONES	RM	MR	94	MORRICE	JO	CAPT	94	RYAN	TJ	MR	93
JONES	PD	CMDR	96	MORTIMER	JR	MR	95	RYAN	FJ	LCDR	94
JONES	JA	MR	95	MORTON	GA	CDRE	95	SANGUINETTI	C	LEUT	95
JONES	JW	CAPT	93	MULCAHY	PJ	LEUT	95	SCHMITT	LG	LCDR	96
JULIAN	HG	CMDR	94	MULCARE	PM	CDRE	96	SCHWEIKERT	MD	MR	94
KABLE KAFER	GP BJ	CDRE	93 95	MURPHY	SA	LCDR	95	SCOTT	JS	LCDR	95 94
KELLY	JM	CAPT	94	NAUGHTON NEKRASOV	PK G	LCDR CMDR	95 94	SEARS SEN	JS DJ	MR	93
KEMP	WA	CMDR	95	NELSON	AJ	LEUT	94	SHACKLETON	DJ	CAPT	95
KEMPTHORNE	AV	CMDR	94	NEUMANN	D.C.	Mr	95	SHALDERS	RE	CAPT	95
KENNEDY	PG	RADM	93	NEWELL	H	CPO	95	SHARP	WR	CAPT	96
KEOUGH	AS	MR	95	NICHOLSON	IH	CDRE	94	SHARP	RW	CAPT	93
KING	JN	CMDR	95	NIXEY	GF	CDR	94	SHEARING	JA	CDRE	95
KING	FAH	MR	95	NOBLE	IA	CAPT	94	SHERWOOD	RJ	CMDR	96
KINGSTON	PS	CAPT	95	NORMAN	GF	LCDR	95	SHEVLIN	PJ	CMDR	95
KLIMECK KNOX	BS	VADM	94 95	NORTHCOTT NYE	TL BGJ	SBLT	96 95	SHEVLIN	JPM	LCDR MR	94
KRISTENSEN	B	LEUT	95	O'KEEFE	SJ	LEUT	93	SIEBERT	JR JA	CMDR	93
LAMACRAFT	R	CDRE	96	O'LOUGHLAN	GA	SBLT	94	SINCLAIR	JB	CMDR	95
LAMBDEN	ID	MR	94	O'ROURKE	TJ	DR	93	SKINNER	CJ	CAPT	94
LAMONT	RJ	MR	96	O'SULLIVAN	T	CAPT	95	SKINNER	KJ	CMDR	95
LANCASTER	I	CAPT	94	OBORN	V	LEUT	93	SMITH	1	CMDR	93
LASCELLES	K	LCDR	93	OLDHAM	PC	LCDR	94	SMITH	IB	LCDR	94
LATTIN LAUNDER	JN	CMDR	94	OLLIVER	CJ	LCDR	96	SMITH	KFH	CMDR	95
LAWRENCE	PJ GA	CMDR	95 95	ONER ORR	DE	MR CDRE	95 96	SMITH SMITH	WG HG	CAPT	93 94
LAWRIE	EH	LCDR	94	OVERTON	WR	CAPT	93	SMYTH	DH	CDRE	95
LEAHY	RC	LEUT	93	OXENBOULD	CJ	RADM	95	SNOW	ЛВ	CDRE	94
LEDSON	DI	CAPT	94	PAFFARD	PMS	CMDR	94	SOEWARSO	Н	RADM	94
LEMON	SP	CMDR	95	PALLOT	J.S.	LCDR	93	SPARKS	JN	LEUT	94
LEWIS	TE	CAPT	93	PARKER	NV	CAPT	97	SPENCE	G.A	CMDR	94
LEWIS	JAB	CDRE	95	PARKER	STA	LEUT	94	SPENCER	GL	LCDR	94
LISK	SK	LTCDR	95	PARKES	FJ	CAPT	93	STANBURY	JC	CMDR	94
LITTLETON	CJ VR	CDRE	94 94	PATTERSON	DR	CMDR	95 93	STAPLETON STEPHEN	JR KC	CAPT	95 94
LOCKEY	SJ	SBLT	93	PATTERSON PEARCE	AM AD	LEUT	93	STEPHENS	MG	LEUT	94
LOGAN	TH	CAPT	94	PEARSON	RS	CMDR	95	STEVENS	DM	LCDR	94
LONGBOTTOM	RJ	CMDR	94	PECHEY	ID	CMDR	94	STEVENS	KL	MR	94
LOOSLI	RG	RADM	93	PENNOCK	RJR	CMDR	94	STEVENS	JD	RADM	95
LORD	JR	CDRE	94	PERCY	RH	CDRE	93	STEVENS	DL	CMDR	95
LUCIE-SMITH	AE	SBLT	94	PERRETT	JK	CAPT	95	STEVENS	WT	LCDR	94
LYNAM	DF	RADM	94	PERRETT	N	CMDR	96	STEWARD	Cl	RADM	94
MACDONALD	RG IDG	MR	94	PETERSON	DN	CMDR	94	STODULKA	TB	CAPT	93 94
MACDONICALL	11 15 1	VADM	95	PIETOR	EJ	MR	95	STOKER	NJ	CDKE	
MACDOUGALL MACKINNELL	G	CAPT	95	PITT	KF	CDRE	94	STRACHAN	IJ	MR	93

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SWAN SWINDEN SWINDEN GJ LEUT SSWINNERTON RE CAPT 73 SWINNERTON RE CAPT 73 TALLACK HN WO 94 TALWAR R CAPT 76 TAPLEY SE CMDR 95 TARGA RW SBLT 73 TAYLOR PW LEUT 74 TAYLOR MJ CMDR 75 TAYLOR RG VADM 96 TEAGLE SF VADM 94 TEAGLE PF LEUT 93 TERNENT ML LCDR 94 THOMPSON MM LTCOL 93 THOMPSON MM LTCOL 93 THOMPSON MM LTCOL 93 TOBIN J CDRE 95 TONGUE WSJ CMDR 95 TONGUE WSJ CMDR 95 TONGUE WSJ CMDR 96 TOWNEND DA MR 93 TRIPOVICH MJ CMDR 94 TRITTEN JJ DR 93 TRIPOVICH MJ CMDR 94 VASEY TR CMDR 95 VETICH KW LEUT 94 VAND VENN WJ MR 94 WADDINGHAM FL SBLT 97 WALLACE- CJ MR 95 THOMPSON WALLS RA RADM 95 WALLOLE GR CAPT 94 WARD H LEUT 94 WARD H LEUT 94 WARD H LEUT 94 WARD H LEUT 94 WARD H WARD H WARD H WESTER MC CAPT 94 WARD MJ CAPT 94 WARD MJ CAPT 94 WEEKLEY IW LCDR 95 WESTPHALL JA CAPT 94 WHITTEN RJ CAPT PH	atrices	534	4558	ANI WIEWID
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